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Ministry of Higher Education and Scientific Research

University of Tindouf

Institute of Science and Technology

Department of Maths and Computer Science

L2 (semester 03)

Pedagogical Handout

Foreign Language (Scientific English)

Course presented to students of Maths and Computer Science.

Year 2

Semester 03

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2025/2026

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I. Course description

This course is primarily designed for students of computer science to develop students' proficiency in English for computer science. It is built on authentic and contextual pedagogical supports to respond to the specific needs of the students. The course is composed of different linguistic sequences under the cover of different skills namely ; reading, speaking, listening and writing. In order for the students to be equipped with the necessary linguistic training required for their profile, different lessons are included in the course : grammar, syntax, lexic and phonetics. The following is the academic training offer provided by the official scientific councils which will be explained in more details in '*course content*' rubric.

Training Offer :

Semestre : 03

Unité d'enseignement Transversale : UT

Matière : Langue étrangère

Crédits : 2

Coefficient : 1

Objectifs de l'enseignement : Approfondissement et usage de la langue anglaise dans la manipulation de documents.

Connaissances préalables recommandées : Bonnes connaissances de l'anglais.

Contenu de la matière :

- Activités didactiques.
- Compréhension de documents écrits en langue anglaise.
- Reformulations.
- Production écrite.
- Exercices de traduction : Français – Anglais et Anglais – Français.
- Essais de rédaction de petits rapports techniques.

Mode d'évaluation : Examen (100%)

Références

- Murphy. English Grammar in Use. Cambridge University Press. 3rd edition, 2004
- M. McCarthy et F. O'Dell, English vocabulary in use, Cambridge University Press, 1994
- L. Rozakis, English grammar for the utterly confused, McGraw-Hill, 1st edition, 2003
- Oxford Progressive English books.

Activer Windows
Accédez aux paramètres

II. Course content :

Scientific English is a course that addresses students of technical and scientific specialties like 'Mathematics and Computer Science'. The notion on which the module is based is introduced in the program to train students using the linguistic tool of English as a language for specific purposes (ESP: English for Specific Purposes).

This course falls within the framework of the program and the ministerial project which aims for the presence of the English language in higher education. This aim is to reinforce the use of this language in the academic and professional field due to its validity in terms of the linguistic process of scientific research.

The course will revolve around 'The computer' as the main element. This element will assist the process through a linguistic approach that will be primarily built on the linguistic repertoire of the computer field. A variety of pedagogical activities will be presented to cover all the teaching aims of the subject. Reading comprehension, specialized vocabulary, grammar, morphology, phonetics, and written expression tools are the learning activities based on the computer and its multiple functions.

The course will unfold through sequences, sections, and learning activities. The sequence is the primary cover that will encompass pedagogical elements of the same aim and pedagogical content. For this reason, the course will consist of two fundamental sequences. They are:

1. *Reading and Writing*
2. *Listening and Speaking*

Each sequence is divided into two sections. '*Reading and Writing*' is composed of *Reading* and then *Writing*. *Listening and Speaking* will unfold in the same manner. Each section will be presented with learning activities compatible with the main aims of the sequence. Grammar, vocabulary, phonetics are pedagogical contents that will cover the different sequences and sections.

III. Teaching Objectives:

At the end of the course, students will be able to :

- ✓ Understand computer science texts ;
- ✓ Use technical vocabulary related to computing ;
- ✓ Write short technical reports ;
- ✓ Communicate orally about IT topics.

IV. Course Content:

- Didactic activities.
- Comprehension of written documents in English.
- Reformulations.
- Written production.
- Translation exercises: French -- English and English -- French.
- Attempts at writing small technical reports.

Section/module	Sub-section / learning sequence	Learning Objectives	Evaluation	Learner's Pedagogical Task
Reading Comprehension	1. The computer	Know the concept of the machine	Quiz	Consult the documents Participate in the discussion
	2. Lexicon	Develop specific vocabulary	Quiz	Consult the documents Participate in the discussion
Listening Comprehension	1. Computer parts and its functions	Describe the computer and its components	Quiz	Consult the documents Participate in the discussion

V. Final Outcomes :

This course is based on the Objectives-Based Approach (OBA), which is an excellent approach for this type of module. Furthermore, the teaching-learning activities of this course are based more on face-to-face sessions which rely on:

1. Knowledge and know-how are transmitted through the course; students must take notes that serve to master the concepts essential for carrying out the proposed learning activities during the session;
2. Students are invited to participate in debates, initiated by questions asked about the current pedagogical sequence, aiming to develop exchanges among them;
3. Students are invited to participate freely in these debates by proposing answers to the posed questions to mobilize their knowledge;
4. Exercises are scheduled for students during the semester to verify their abilities to mobilize knowledge in solving exercises.
5. Deepening and use of the English language in handling documents.
6. Recommended prior knowledge: Good knowledge of English.

Table : repartition of objectives with activities

Specific Objectives (according to Bloom's taxonomy)	Planned Activities	Justifications
1- Analysing the components of a text : general idea, paragraph idea, specific information in a text	Reading Comprehension of texts	The activities help learners to practically apply the knowledge they have already learned
2- Constructing an outline of a text ; -Building a text on the bases of the following elements : - The sentence (introducing sentence, supporting sentences and concluding sentences) -The paragraph (Introducing paragraph, developing paragraphs and concluding paragraph)	Writing a text	The outline helps students by providing them the opportunity to put their ideas in a clear plan in a well-organised map with a coherent and a logical structure

3- Evaluate and identify the different parts of the computer by the function of each component (Input/output)	Comuter parts categorisation	This activity provokes the critical thinking in the stuent's' cognition through the analysis of the computer parts through a comparative approach
4- Produce a text about the computer parts	Text construction (Role playing about each computer parts)	The acivity serves as providing students with the ability to output their schemata and pit it in a more productive method with the integration of listening and speaking skills involving synthesisi,g ; analising and critical thinking and speaking utterances producing

VI. Course Structure :

A course, or a training module, must be well structured to allow its online deployment. Such a course must be easy to access and use, thanks to its structure formed by three systems:

a- Input System:

- Objectives (Learning Aims): The objectives (general and intermediate) targeted by this course are diversified and declared in a simple manner, and they present the competencies to be developed in the student by following the course.

- Pre-test (objective test): Our good exposition of the objectives and targeted competencies will allow the student to measure their aptitude regarding the mastery of learning aims and to engage in this course.

- Prerequisites (entry test): A set of questions are presented to the student aiming to test their prior knowledge and to provide them with some resources (files) allowing them to reach the threshold of necessary knowledge before starting the course.

b- Learning System:

The course content is split into five learning units and it also contains learning strategies and a multitude of local learning activities specific to each learning unit (MCQ, short answer...). We also used orientation strategies based on feedback (Excellent, very satisfactory, satisfactory...). Resources are also made available to students to help them learn the course (PDF files, links...).

c- Output System:

To verify if the student has properly acquired the competencies targeted by the course, we have placed towards the end of the program a post-test (exit test) containing different activities and questions that encompass all the course content. Thus, to guide them, we used feedbacks. It is important to note that it is the objectives-based approach where the student moves from a simple level to a higher level; we will base this on the answers they provide to the posed questions (observable behaviors).

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VII. Pre-requisite :

Content	Applications
Reading comprehension	Scanning through a text/ Scanning a text
Written expression	Writing formats/ types of texts/ Logical connctions/punctuation/capitalisation
Listening Comprehension	The ability to listen and understan specific information/ details/ question answering
Speaking	The ability to express their ideas in spoken form
Grammar	Tenses/ active and passive voices
Phonetics	Intonation/ syllables/ stress/ physical organs of the pronuniation
Morphology	Affexation/ derivation
Syntaxe	Specific vocabulary of computer science

VIII. Course Mental Card

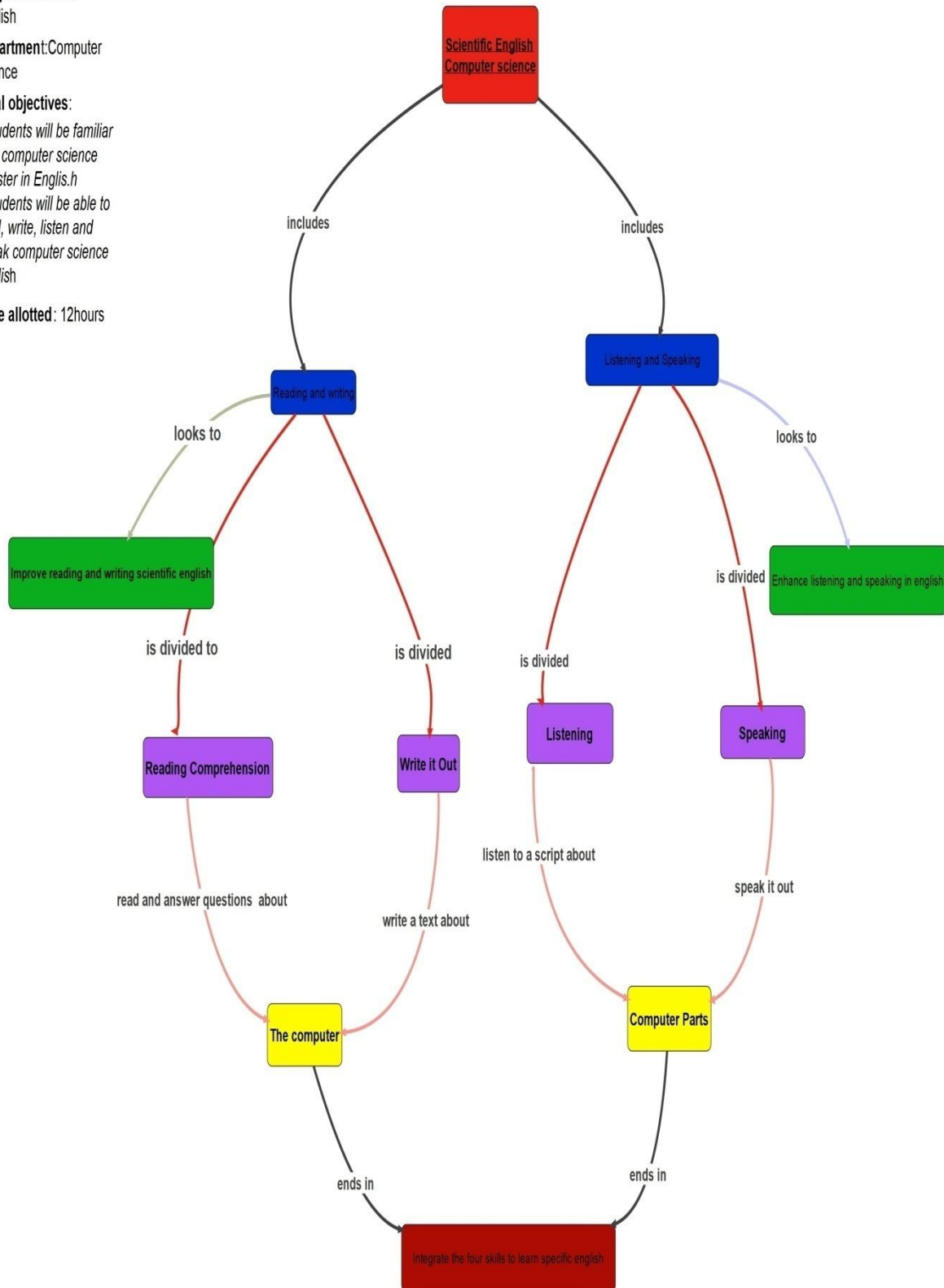
Subject: Scientific English

Department: Computer science

Final objectives:

- Students will be familiar with computer science register in English.
- Students will be able to read, write, listen and speak computer science English

Time allotted: 12 hours



IX. Learning Assessment

In terms of evaluation, we used three types of assessments:

a. Prerequisite Assessment

It takes place before the start of the training and consists of verifying if a learner possesses the necessary knowledge and skills to be able to follow the proposed training. But the students' answers alone do not account for their abilities and knowledge (this evaluation is not used in this training).

b. Formative Assessment

It occurs during learning and serves to inform the learner and the trainer of the degree of mastery achieved, to remedy shortcomings, to adopt other strategies. Self-assessment and peer assessment can also be used during a formative evaluation. But personalized support for learners proves necessary if we truly want to improve their knowledge level and encourage the trainer to continuously improve the methods used (this type of evaluation is used during the training of LMD academic students).

c. Summative Assessment or Assessment of Learning Outcomes

It occurs at the end of a learning or training process and allows situating learners relative to each other, verifying if the objectives have been achieved. It is generally a certifying evaluation.

Students will be evaluated on the basis of a final exam (100%/•)

X. Lecture one. The computer

Reading and comprehension

Read the following passages carefully then do the activities that follow.

A computer is a machine with an intricate network of electronic circuits that operate switches or magnetize tiny metal cores. The switches, like the cores, are capable of being in one of two possible states, that is, on or off; magnetized or demagnetized. The machine is capable of storing and manipulating numbers, letters and characters. The basic idea of a computer is that we can make the machine do what we want by inputting signals that turn certain switches on and turn others off, or that magnetize or do not magnetize the cores.

The basic job of computers is the processing of information. For this reason, computers can be defined as devices which accept information in the form of instructions called a program and characters called data, perform mathematical and/or logical operations on the information, and then supply results of these operations. The program, or part of it, which tells the computers what to do and the data, which provide the information needed to solve the problem, are kept inside the computer in a place called memory.

Computers are thought to have many remarkable powers. However, most computers, whether large or small have three basic capabilities. First, computers have circuits for performing arithmetic operations, such as: addition, subtraction, division, multiplication and exponentiation. Second, computers have a means of communicating with the user. After all, if we couldn't feed information in and get results back, these machines wouldn't be of much use. However, certain computers (commonly minicomputers and microcomputers) are used to control directly things such as robots, aircraft navigation systems, medical instruments, etc.

Some of the most common methods of inputting information are to use punched cards, magnetic tape, disks, and terminals. The computer's input device (which might be a card reader, a tape drive or disk drive, depending on the **medium** used in inputting information) reads the information into the computer.

For outputting information, two common devices used are a printer which prints the new information on paper, or a CRT display screen which shows the results on a TV-like screen.

Third, computers have circuits which can make decisions. The kinds of decisions which computer circuits can make are not of the type: "Who would win a war between two countries?" or "Who is the richest person in the world?"

Unfortunately, the computer can only decide three things, namely: Is one number less than another? Are two numbers equal?, Is one number greater than another?

What is a computer? (2015, March 21). *StudFiles*. Retrieved March 3, 2026, from <https://studfile.net/preview/1706519/page:2/>

Stage one : Skimming through the text

- 1- What is the title of the text ?
- 2- How many paragraphs in the text ?
- 3- What is the general idea of the text ?

Stage two : Scanning the text

- 1- Say whether these statements are true or false.

a - A network of electronic circuits that operate switches or magnetize tiny metal cores is the framework of the computer

b - The machine can store and manipulate numbers, letters and characters

c – We manipulate the machine to do what we want by inputting signals that turn certain switches on and turn others off

d – The computer accepts information in the form of instructions called data and characters called program

- 2- Answer the following questions according the text.

a- What is the computer?

b- Explain the functioning concept of the computer according to the text.

- 4 - Find in the text words that are opposite in meaning to the following.

magnetize (§1) refuse (§2)

- 5- Find in the text words that are opposite in meaning to the following.

Switch on (§1) –information (§2)

Answer Key :

Stage one : Skimming through the text

- 1- What is the title of the text ?
 - The computer
- 2- How many paragraphs in the text ?
 - There are paragraphs in the text

-
- 3- What is the general idea of the text ?
 - The computer and its functioning system.

1- Say whether these statements are true or false. (06pts)

a - A network of electronic circuits that operate switches or magnetize tiny metal cores is the framework of the computer True (01.50 pts)

b - The machine can store and manipulate numbers, letters and characters True

c – We manipulate the machine to do what we want by inputting signals that turn certain switches on and turn others off True

d – The computer accepts information in the form of instructions called data and characters called program false

2- Answer the following questions according to the text. (04pts)

a- What is the computer? (02 pts)

A computer is a machine with an intricate network of electronic circuits that operate switches or magnetize tiny metal cores. The switches, like the cores, are capable of being in one of two possible states, that is, on or off; magnetized or demagnetized. The machine is capable of storing and manipulating numbers, letters and characters. The basic idea of a computer is that we can make the machine do what we want by inputting signals that turn certain switches on and turn others off, or that magnetize or do not magnetize the cores.

b- Explain the functioning concept of the computer according to the text : (02 pts)

The basic job of computers is the processing of information. For this reason, computers can be defined as devices which accept information in the form of instructions called a program and characters called data, perform mathematical and/or logical operations on the information, and then supply results of these operations. The program, or part of it, which tells the computers what to do and the data, which provide the information needed to solve the problem, are kept inside the computer in a place called memory.

4 - Find in the text words that are opposite in meaning to the following.

magnetize (§1) : demagnetized

refuse (§2) : accept

5- Find in the text words that have the same meaning to the following.

Switch on (§1) : turn on

–information (§2) : data

XI. Lecture Two: Vocabulary : Computer science vocabulary

English	Arabic	English	Arabic
Computer	الحاسوب	device	جهاز
Desktop	حاسوب المكتب	Scanner	الماسح الضوئي
Laptop	الحاسوب المحمول	Input	ادخال
Central Processing Unit	وحدة المعالجة المركزية	Output	اخراج
Printer	طابعة	Components	مكونات
Mouse	فارة	Software	البرمجة البسيطة
Monitor	شاشة العرض	Hardware	البرمجة المعقدة للاجهزة
icon	ايقونة	application	تطبيق
network	شبكة	storage	تخزين
digital	رقمي	Data/ information	معلومات

Computer science common verbs List

English	Arabic	English	Arabic
To process	يعالج	To draw	يرسم
To treat	يعالج	To print	يطبع
To display	يظهر	To scan	يمسح ضوئياً
To integrate	يدمج	To store	يخزن
To switch on/off	يشغل/يطفيء	To access	يدخل
To calculate	يحسب	To transfer	يعيد الارسال الى وجهة اخرى
To write	يكتب	To mantain	يصلح
To send	يرسل	To receive	يستقبل

Activity : Choose the correct answer

- A computer is an _____ device.
a. slow b. electronic c. lazy
- The word 'Computer' is derived from the word
a. Complete b. Compute c. Calculate

-
- 3. Which of the following is used to play games?
a. Computer b. Calculator c. Motorcycle
- 4. Who does not make mistakes ?
a. Human being b. Animals c. Computer
- 5. This is the image of



- a. Calculator b. Laptop Computer c. Desktop Computer
- 6. This is the picture of



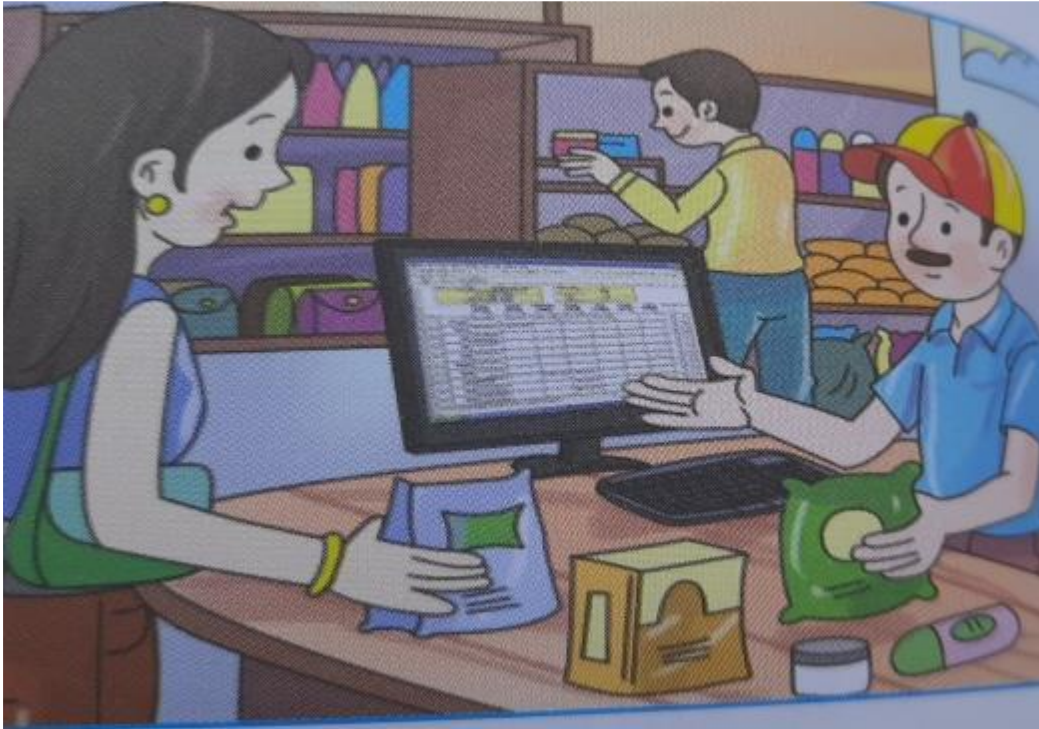
- a. Laptop computer b. Tablet c. Desktop Computer
- 7. Which statement is wrong
a. Computer does not make mistakes.
b. b. Computer can remember everything.
c. c. Computer needs rest.

-
- 8. PC stands for
 - a. Private Computer b. Personal Computer c. Public computer
- 9. At a railway station, the computer is used for printing
 - a. tickets. b. report card c. bill
- 10. ____use computers for making designs of buildings.
 - a. Architects b. Scientists c. Publishers
- 11. Computer is used by the_____ for research work.
 - a. Teachers b. scientists c. pilots
- 12. In _____ computer is used for typing letters.
 - a. office b. ATM c. hotel
- 13. Computer helps _____ in designing new clothes.
 - a. designers b. driver c. doctors
- 14. Computer helps to maintain _____ in banks.
 - a. report cards b. accounts c. movies

15. In schools, Computer is used for
a. teaching b. making report card c. both
16. _____ is used to withdraw money.
a. Car b. Tablet Computer c. ATM
17. Full form of ATM is
a. Any Time Money b. Automated Teller Machine
c. Automated Talking Machine
18. Computer is used in hospitals
a. To perform operations b. to prepare medical reports c. both
19. In this picture, computer is used for



- a. Space research b. Typing letters c. Playing games
20. In this picture, Computer is used in



a. Shops b. Airport c. Hospital

Key answers :

- 1- Electronic
- 2- Compute
- 3- Computer
- 4- Computer
- 5- Desk computer
- 6- Laptop computer
- 7- Computer needs rest
- 8- Personal computer
- 9- Tichets
- 10- Architects
- 11- Scientists
- 12- Office
- 13- Designers
- 14- Accounts
- 15- Both

-
- 16- Automatic Teller Machine
- 17- Both
- 18- Space research
- 19- shops

XII. Lecture Three: The Present Simple Tense for Computer Science

Part 1: Introduction & Context

- A programmer writes code every day. (Habit/Routine)
- A computer processes data using its CPU. (General Fact/Process)

Explanation:

- Use 1: General Truths & Facts. These are things that are always true.
 - Example: "A byte contains eight bits."
 - Example: "Python is an interpreted programming language."
- Use 2: Habits & Routines. These are actions that happen regularly.
 - Example: "I compile my code after every major change."
 - Example: "We have a team meeting every Monday morning."
- Use 3: Instructions & Processes. We use it to explain how something works or to give step-by-step directions.
 - Example: "First, the user enters their login credentials."
 - Example: "The algorithm checks for errors."

Part 2: The "Rule"

1. The Base Code (Affirmative Sentences)

- I / You / We / They : use the base verb.
 - "I write code."
 - "They debug the software."
- He / She / It : add an -s or -es to the verb. (This is like a special condition for the 3rd person).
 - "He writes efficient algorithms."

- - "She *debugs* the new feature."
- "It *runs* a diagnostic check."

Spelling Rules (The + -s Exception Handling):

- Most verbs: add '-s' (run - runs, execute - executes)
- Verbs ending in '-ss, -sh, -ch, -x, -o': add '-es' (fix - fixes, go - goes, crash - crashes)
- Verbs ending in 'consonant + y': change the 'y' to 'i' and add '-es' (try - tries, apply - applies)

2. The Negative Sentences

To make a negative sentence, we use the auxiliary verb 'do' + 'not'.

- I / You / We / They : 'do not (don't)' + 'base verb'.
 - "I *do not (don't) use* Java for this project."
 - "They *do not (don't) support* that legacy system."
- He / She / It : 'does not (doesn't)' + base verb'.
 - "He *does not (doesn't) work* on weekends."

3. The Query Function (Questions)

To form a question, we bring the auxiliary verb to the front of the sentence.

- 'Do + I/you/we/they' + 'base verb'?
 - "**Do** you *'understand'* the algorithm?"
 - "**Do** they *'test'* their code before deployment?"
- 'Does + he/she/it' + 'base verb'?
 - "**Does** the server *respond* to ping requests?"
 - "**Does** she *know* Python?"

Part 3: Let's Practice

Exercise A: Spot the Verb

Read the sentences. Identify the verb in the Present Simple and explain why it is used (Fact, Habit, or Process).

1. "An algorithm takes an input and produces an output."
2. "We use Git for version control in all our projects."

-
- 3. "The front-end developer designs the user interface."
- 4. "This IDE offers a lot of useful debugging tools."
- 5. "I do not like spaghetti code."

Exercise B: Debug the Code

Some of these sentences have syntax errors (grammar mistakes). Find the error and fix it, just like debugging.

1. He write clean, well-documented code.
2. They does not use cloud storage for sensitive data.
3. A loop continue to execute until a condition is met.
4. Do she work remotely?
5. The application crash every time I open it.

Exercise C: Fill in the Function

Complete the sentences with the correct Present Simple form of the verb in parentheses.

1. A database _____ (store) and _____ (organize) data.
2. We _____ (not/test) our code in the production environment.
3. _____ your computer _____ (have) enough RAM to run this software?
4. The software developer _____ (fix) bugs and _____ (implement) new features.
5. Good programmers _____ (always / comment) their code so others can understand it.
6. _____ this program _____ (require) administrator privileges to run?

Answer Key: Present Simple for Computer Science

Exercise A: Spot the Verb

1. Sentence: "An algorithm takes an input and produces an output."

Answer: takes, produces - Fact or Process (Describing what an algorithm does)

2. Sentence: "We use Git for version control in all our projects."

Answer: use - Habit or Routine (Describing a regular practice)

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3. Sentence: "The front-end developer designs the user interface."

Answer: designs - Fact or General Truth (Describing a job role)

4. Sentence: "This IDE offers a lot of useful debugging tools."

Answer: offers - Fact (Describing a feature of the IDE)

5. Sentence: "I do not like spaghetti code."

Answer: do not like - State or Habit (Expressing a general feeling)

Exercise B: Debug the Code

1. Incorrect: He write clean, well-documented code.

Correct: He writes clean, well-documented code.

Reason: Missing -s for third person "He".

2. Incorrect: They does not use cloud storage for sensitive data.

Correct: They do not use cloud storage for sensitive data.

Reason: Incorrect auxiliary "does" with "They". Use "do".

3. Incorrect: A loop continue to execute until a condition is met.

Correct: A loop continues to execute until a condition is met.

Reason: Missing -s for third person "A loop" or "It".

4. Incorrect: Do she work remotely?

Correct: Does she work remotely?

Reason: Incorrect auxiliary "Do" with "she". Use "Does".

5. Incorrect: The application crash every time I open it.

Correct: The application crashes every time I open it.

Reason: Verb ending in -sh needs plus -es for third person "The application" or "It".

Exercise C: Fill in the Function

1. A database stores and organizes data.

2. We do not test our code in the production environment.

(Or: We don't test our code in the production environment.)

-

3. Does your computer have enough RAM to run this software?
4. The software developer fixes bugs and implements new features.
5. Good programmers always comment their code so others can understand it.

Note: "always" is an adverb of frequency and goes before the main verb, "comment".

6. Does this program require administrator privileges to run?

XIII. Lecture Four : Grammar : *Direct and Reported Speeches.*

Task : Convert the following sentences from Direct into Indirect speech

1) "He works in a bank"

She said

"I was waiting for the bus when he arrived"

He told me

2) "Where will you live after graduation?"

He asked me.....

3) "Will you come later?"

She asked me.....

4) "Please come early"

He.....
.....

5) "Do your homework!"

He told me.....

6) "I'll come and help you at twelve"

He.....
...

7) "Would you mind waiting a moment please?"

She.....
.....

8) "I should have studied harder for the exam"

•
 She.....

9) “Do you like studying English?”

She.....

Direct Speech	Indirect (Reported Speech)
Inverted commas	No inverted commas
Affirmative statements	We use ‘that’ ...
Here	There
This	That
these	Those
tomorrow	The following day/ the day after
yesterday	The preceding day/The day before
Present simple. Present continuous. Present perfect. Future simple. Past simple. Past perfect	Past simple. Past continuous. Past perfect. Conditional. Past perfect.
The imperative	The infinitive
Modals (must, have to, can, may, will, shall)	Had to, had to, could, might, would, should

Lecture Five : Active and Passive Voices

1. Introduction to Active and Passive Voice

Active Voice: The subject performs the action.

- Structure: Subject + Verb + Object

- Example: The chef cooked the meal.

Passive Voice: The subject receives the action.

- Structure: Object + be + past participle + (by + subject)

- Example: The meal was cooked by the chef.

Key Components of Passive Voice:

1. Form of "be" - changes according to tense
2. Past Participle - main verb in its -ed/en form
3. "by + agent" - optional, omitted when agent is unknown/unimportant

2. When to Use Active vs Passive Voice

Use ACTIVE Voice when:

- ✓ You want to be direct and clear
- ✓ The doer of the action is important
- ✓ Writing most business, academic, and creative content
- ✓ Example: Shakespeare wrote Hamlet.

Use PASSIVE Voice when:

- ✓ The doer is unknown: My bike was stolen.
- ✓ The action is more important than the doer: The bridge was built in 1998.
- ✓ You want to be tactful/avoid blame: A mistake was made.
- ✓ Scientific/technical writing: The solution was heated to 50°C.

3. Basic Structure and Transformation Rules

Transformation Formula:

Active: Subject + Verb + Object

↓↓↓

Passive: Object + be + past participle + (by + subject)

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Step-by-Step Transformation:

1. Move the object to the subject position
2. Identify the tense of the active verb
3. Add appropriate "be" verb in the same tense
4. Change main verb to past participle
5. Add "by + original subject" (optional)

Example:

Active: 'The dog (S) chased (V) the cat (O).'

Step 1: The cat (new S)

Step 2: Past simple tense

Step 3: was

Step 4: chased

Step 5: by the dog

Passive: 'The cat was chased by the dog.'

4. Tense-by-Tense Guide {#tense-guide}

Present Simple

Active: S + V1 (+ s/es) + O

Passive: O + am/is/are + V3 + (by S)

Active: She writes a letter.

Passive: A letter is written by her.

Present Continuous

Active: S + am/is/are + V-ing + O

Passive: O + am/is/are + being + V3 + (by S)

Active: She is writing a letter.

Passive: A letter is being written by her.

Present Perfect

Active: S + has/have + V3 + O

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Passive: O + has/have + been + V3 + (by S)

Active: She has written a letter.

Passive: A letter has been written by her.

Past Simple

Active: S + V2 + O

Passive: O + was/were + V3 + (by S)

Active: She wrote a letter.

Passive: A letter was written by her.

Past Continuous

Active: S + was/were + V-ing + O

Passive: O + was/were + being + V3 + (by S)

Active: She was writing a letter.

Passive: A letter was being written by her.

Past Perfect

Active: S + had + V3 + O

Passive: O + had + been + V3 + (by S)

Active: She had written a letter.

Passive: A letter had been written by her.

Future Simple (will)

Active: S + will + V1 + O

Passive: O + will + be + V3 + (by S)

Active: She will write a letter.

Passive: A letter will be written by her.

Future Simple (going to)

Active: S + am/is/are + going to + V1 + O

Passive: O + am/is/are + going to + be + V3 + (by S)

Active: She is going to write a letter.

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Passive: A letter is going to be written by her.

Modals (can, must, should, etc.)

Active: S + modal + V1 + O

Passive: O + modal + be + V3 + (by S)

Active: She must write a letter.

Passive: A letter must be written by her.

5. Special Cases

A. Verbs with Two Objects (Indirect & Direct)

Some verbs like 'give, send, show, teach, promise, offer, tell' have two objects.

Active: She gave me (IO) a book (DO).

Two possible passive forms:

1. Indirect object as subject: I was given a book by her. (more common)

2. Direct object as subject: A book was given to me by her.

B. Verbs with Prepositions

The preposition remains with the verb in passive voice.

Active: Someone broke into the house.

Passive: The house was broken into.

Active: The doctor sent for the patient.

Passive : The patient was sent for.

C. Imperative Sentences

Active: V1 + Object

Passive: Let + Object + be + V3

Active: Open the window.

Passive: Let the window be opened.

Active: Don't touch this switch.

Passive: Let this switch not be touched.

D. Interrogative Sentences**Yes/No Questions:**

Active: Do/Does/Did + S + V1 + O?

Passive: Is/Are/Was/Were + O + V3?

Active: Did you write this letter?

Passive: Was this letter written by you?

WH-Questions:

Active: WH + do/does/did + S + V1 + O?

Passive: WH + is/are/was/were + O + V3?

Active: When did you write this letter?

Passive: When was this letter written by you?

E. Sentences without Objects (Intransitive Verbs)

These cannot be made passive: sleep, cry, go, arrive, die, happen, exist

The baby was slept. (INCORRECT)

The baby slept. (CORRECT)

F. Stative Passive (Adjectival Use)

Sometimes the past participle acts as an adjective describing a state, not an action.

The window was broken. (Could be action OR state)

The window was broken by John. (ACTION - passive voice)

The window was broken when I arrived. (STATE - adjective)

6. Common Mistakes

✘ Mistake 1: Forgetting to change the verb to past participle

The cake was bake. → The cake was baked.

✘ Mistake 2: Using the wrong form of "be"

The letters is delivered. → The letters are delivered.

✘ Mistake 3: Keeping the object after the verb

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The letter was written it. → The letter was written.

✗ Mistake 4: Using passive with intransitive verbs

The accident was happened. → The accident happened.

✗ Mistake 5: Incorrect placement of adverbs

The door carefully was closed. → The door was carefully closed.

7. Exercises with Answers

Exercise 1: Identify the Voice

State whether each sentence is active (A) or passive (P).

1. The president will announce the decision tomorrow. ____
2. The suspect was arrested last night. ____
3. Someone has stolen my wallet. ____
4. The damaged ship was being towed into harbor. ____
5. You should complete the assignment by Friday. ____
6. The building is being renovated. ____
7. They have postponed the concert. ____
8. The Mona Lisa was painted by Leonardo da Vinci. ____

Answers

1. A | 2. P | 3. A | 4. P | 5. A | 6. P | 7. A | 8. P

Exercise 2: Change Active to Passive

Transform these active sentences into passive voice.

1. Shakespeare wrote Romeo and Juliet.
2. The chef is preparing the dinner.
3. Someone has stolen my bicycle.
4. They will announce the results tomorrow.
5. The students were discussing the novel.
6. The mechanic had repaired the car.
7. People speak English all over the world.

-
- 8. The manager must sign this document.
- 9. They are going to build a new hospital.
- 10. The teacher explained the lesson.

Answers

1. Romeo and Juliet was written by Shakespeare.
2. The dinner is being prepared by the chef.
3. My bicycle has been stolen.
4. The results will be announced tomorrow.
5. The novel was being discussed by the students.
6. The car had been repaired by the mechanic.
7. English is spoken all over the world.
8. This document must be signed by the manager.
9. A new hospital is going to be built.
10. The lesson was explained by the teacher.

Exercise 3: Change Passive to Active

Transform these passive sentences into active voice.

1. The cake was eaten by the children.
2. A new law will be passed by Parliament.
3. The injured man has been taken to hospital.
4. The report is being written by Sarah.
5. The museum was opened by the Queen in 2000.
6. All flights have been cancelled due to fog.
7. The letter should be sent immediately.
8. The suspect was being questioned by the police.

Answers

1. The children ate the cake.
2. Parliament will pass a new law.

-
- 3. Someone has taken the injured man to hospital.
- 4. Sarah is writing the report.
- 5. The Queen opened the museum in 2000.
- 6. They have cancelled all flights due to fog.
- 7. Someone should send the letter immediately.
- 8. The police were questioning the suspect.

Exercise 4: Two Objects Transformation

Transform these sentences with two objects into BOTH possible passive forms.

1. The company offered me a job.
2. The teacher taught the students a new song.
3. My grandmother told us an interesting story.
4. They sent the customer a refund.
5. The manager gave the staff a bonus.

Answers

1.
 - I was offered a job by the company.
 - A job was offered to me by the company.
2.
 - The students were taught a new song by the teacher.
 - A new song was taught to the students by the teacher.
3.
 - We were told an interesting story by my grandmother.
 - An interesting story was told to us by my grandmother.
4.
 - The customer was sent a refund.
 - A refund was sent to the customer.

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5.

- The staff were given a bonus by the manager.
- A bonus was given to the staff by the manager.

Exercise 5: Prepositional Verbs

Transform these sentences into passive voice.

1. Someone broke into our house last night.
2. The doctor is operating on the patient.
3. They have sent for the doctor.
4. People looked up to the leader.
5. You must account for all expenses.
6. The police are looking into the matter.
7. Someone turned down my application.
8. They will take care of the children.

Answers

1. Our house was broken into last night.
2. The patient is being operated on by the doctor.
3. The doctor has been sent for.
4. The leader was looked up to.
5. All expenses must be accounted for.
6. The matter is being looked into by the police.
7. My application was turned down.
8. The children will be taken care of.

Exercise 6: Interrogative Sentences

Transform these questions into passive voice.

1. Did Alexander Fleming discover penicillin?
2. When will they announce the results?

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- 3. Are they building a new airport?
- 4. Has anyone seen my keys?
- 5. Who wrote this novel?
- 6. Why did the company close the factory?
- 7. Can we complete the project on time?
- 8. Where did they find the missing painting?

Answers

1. Was penicillin discovered by Alexander Fleming?
2. When will the results be announced?
3. Is a new airport being built?
4. Have my keys been seen?
5. Who was this novel written by? / By whom was this novel written?
6. Why was the factory closed by the company?
7. Can the project be completed on time?
8. Where was the missing painting found?

Exercise 7: Imperative Sentences

Transform these imperative sentences into passive voice.

1. Open the door.
2. Submit your assignments by Friday.
3. Do not touch the exhibits.
4. Please fill out this form.
5. Turn off the lights.
6. Send the package immediately.
7. Do not park here.
8. Clean your room.

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Answers

1. Let the door be opened.
2. Let your assignments be submitted by Friday.
3. Let the exhibits not be touched.
4. Let this form be filled out. / You are requested to fill out this form.
5. Let the lights be turned off.
6. Let the package be sent immediately.
7. Let parking not be done here.
8. Let your room be cleaned.

Exercise 8: Error Correction

Find and correct the errors in these passive sentences.

1. The letter was wrote by John.
2. The meeting is been held in Room 101.
3. The window was broke by the boy.
4. The suspect has arrested last night.
5. The cake is baked by my mother every Sunday.
6. The accident was happened yesterday.
7. The report must be submit by Friday.
8. The children are being take to the zoo.

Answers

1. The letter was written by John.
2. The meeting is being held in Room 101.
3. The window was broken by the boy.
4. The suspect was arrested last night.
5. The cake is baked by my mother every Sunday. (This is actually correct!)
6. The accident happened yesterday. (Cannot be passive)

-
- 7. The report must be submitted by Friday.
- 8. The children are being taken to the zoo.

Exercise 9: Mixed Tenses - Comprehensive Practice

Transform these active sentences into passive voice.

1. People grow rice in many countries.
 2. The storm damaged several buildings.
 3. They are repairing the road.
 4. Someone had left the door open.
 5. The committee will review the application.
 6. We must protect the environment.
 7. They were painting the house when I arrived.
 8. The company has promoted Sarah.
 9. They are going to launch the product next month.
 10. Someone should have informed the passengers.
-
1. Rice is grown in many countries.
 2. Several buildings were damaged by the storm.
 3. The road is being repaired.
 4. The door had been left open.
 5. The application will be reviewed by the committee.
 6. The environment must be protected.
 7. The house was being painted when I arrived.
 8. Sarah has been promoted by the company.
 9. The product is going to be launched next month.
 10. The passengers should have been informed.

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Quick Reference Card

Tense	Active	Passive
Present Simple	write/writes	am/is/are written
Present Continuous	am/is/are writing	am/is/are being written
Present Perfect	has/have written	has/have been written
Past Simple	wrote	was/were written
Past Continuous	was/were writing	was/were being written
Past Perfect	had written	had been written
Future (will)	will write	will be written
Future (going to)	am/is/are going to write	am/is/are going to be written
Modals	can write	can be written

Remember: *Passive voice is not wrong - it's a choice. Use it purposefully, not accidentally!*

XIV. Lecture Six: Listening: *Computer Science.*

Computer science is the study of computation, automation, and information. Computer science spans theoretical disciplines (such as algorithms, theory of computation, information theory, and automation) to practical disciplines (including the design and implementation of hardware and software). Computer science is a science that allows processing information automatically or using a computer by following a pre-stored program. Definition of a computer: It is a device that allows information to be received, stored and processed, and to produce the required results when needed. Computer science is generally considered an area of academic research and distinct from computer programming.

Computer architecture describes the construction of computer components and computer-operated equipment. A computer is a machine or device that performs processes, calculations and operations based on instructions provided by a software or hardware program. It has the ability to accept data (input), process it, and then produce outputs.

Automation depends on two basic and integrated parts:

Hardware: The components of a computer.

Software: A group of programs inside a computer.

Computer components:

A computer is made up of primary and secondary components

- **Screen:** is the unit for outputting and displaying stored information.

Internal components:

The motherboard

Central Unit :

It is the largest piece of the computer that contains mainly. The central memory is the unit in which information is stored, and it contains two parts:

- **Live memory:** it is the memory that stores information during processing and is deleted when the power is cut off.

- **Dead memory:** contains information necessary for the operation of the computer and whose content cannot be changed.

Processor: It is an integrated circuit and represents the brain of the computer as it conducts, monitors and coordinates all the tasks that take place inside it.

Basic Components:

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Keyboard: is the unit for entering information into a computer.

Secondary components:

Secondary memory: It is about disks that contain information permanently, including the floppy disk, which is a small disk that is read by the floppy disk reader installed in the central unit.

Compact Disk: It is a disk that has a capacity much larger than a floppy disk and is read by a CD reader.

DVD Digital Versatile Disk: A type of high-capacity CD used to store information.

USB flash disk:

It is a large-capacity disk that can be read and written and is connected to the central unit through the port.

Units of measurement in memory: Memory capacity is measured in the following four basic units:

Byte: A byte consists of eight digits (bit), any binary number, which can represent the two binary numbers (0, 1).

Kilobyte: KB and 1 kilobyte = 1024 bytes.

Megabyte: Megabyte (abbreviated M or MB = 1024 kilobytes).

Gigabyte: Gigabyte (abbreviated G or GB = 1024 MB)

Source :College of Computer Science and Information Technology. (n.d.). *Computer science: Definition, components, and memory measurement*. University of Anbar. Retrieved March 3, 2026, from <https://www.uoanbar.edu.iq/eStoreImages/Bank/16629/Computer%20science.pdf>

Vocabulary computer science:

English	French	Arabic
Attachment	pièce jointe	المرفق
bot/rebot	bot/rebot	
browse the web	naviguer sur le Web	تصفح الويب
Browser	navigateur	المتصفح
Broadband	haut débit	النطاق العريض

cache memory	mémoire cache	ذاكرة التخزين المؤقت
chip	puce	شريحة

Task : Listen carefully to the script and answer the questions that follow.

- 1- What is computer science ?
- 2- What does computer architecture describe ?
- 3- What is the difference between Live memory and Dead memory ?
- 4- Mention the different components of the computer mentioned in the script.
- 5- Categorise them according to their functions.
- 6- Complete the following chart according to the script.

Measurement Unit	Capacity
Byte	
Kilobyte	
Megabyte	
Gigabyte	

Practice :

Task : Choose the correct answer:

- 1) A..... is an autonomous computer program that does or performs specific tasks in a row.
 - a) Worm
 - b) Spyware
 - c) Bot
- 2) Google chrom , Mozilla, Firefox, Microsoft Ede and Safari are cross platform Web.....
 - a) Drivers
 - b) Browsers
 - c) Cyberspace
- 3) Facebook, Twitter, Instagram and Whatsapp are some of the largest social media platforms and sites that enable people to share different forms of format (mp3 , pdf , Doc , Excel...).

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Malware		
operating system		نظام التشغيل
Phishing		
search engine		
Spyware		
Worm		
zombie computer		
(wireless) access point		
wired network	réseau filaire	

XV. Lecture Seven : Phonetics : *The pronunciation of the final 'ed'*

Task : Complete the following chart with the words that follow according to the pronunciation of the final *'ed'*.

invented, followed, gained, allowed, helped, finished, laughed, wached, recorded, watched, loved, measuered, begged, accessed, raised, robbed, worked, named,

/d/	/t/	/ɪd/

The pronunciation of the final *'ed'* in English, which is naturally pronounced /d/, is usually influenced by the sound that precedes it. Accordingly, the sound /d/ is pronounced either /t/ or /ɪd/.

The pronunciation of the final *'ed'* /t/ with a remarkable shift from voicing /d/ to a devoicing /t/ is phonetically accounted for by the impact of the voiceless consonants that precede it. This makes /d/ change to /t/.

• The final 'ed' saves its voicing nature and pronounced /d/ when it is preceded by a voicing consonant. So, there is no impact of devoicing sounds that push the voicing sounds to change their features especially the vibration of the vocal cords.

The 'ed' is pronounced /id/ which means we precede it with the short vowel /i/ when it is preceded by /t,d/. These consonants make the final 'ed' changed to /id/ sound merely because it is the same sound with /d/ and/or it shares the same place as well as the phonetic features with the consonant /t/. This makes the pronunciation of /d/ after the /t,d/ impossible. This justifies the assistance of the vowel /i/ to be physically able to utter /d/ without changing it to a voiceless consonant. The following chart summarises the main cases of the pronunciation of the final 'ed'.

Production :

Task : Complete the following table by your own words

/d/	/t/	/id/

XVI. Lecture Eight : Reading Comprehension: The Evolution of Computers

SECTION A: Reading Passage

Read the passage carefully and answer the questions that follow.*

THE EVOLUTION OF COMPUTERS

The history of computers is a fascinating journey of human innovation spanning over 2,000 years. Long before the invention of electricity, ancient civilisations developed tools to help them calculate. The abacus, invented in Mesopotamia around 2700 BCE, is widely considered the first computing device. This simple frame with sliding beads allowed merchants to perform basic arithmetic quickly and accurately.

The next major advancement came in the 17th century. In 1642, French mathematician Blaise Pascal invented the Pascaline, a mechanical calculator capable of adding and subtracting. Thirty years later, German polymath Gottfried Wilhelm Leibniz improved upon this design, creating a machine that could also multiply and divide. These devices represented a crucial shift from manual to mechanical computation.

The 19th century brought perhaps the most visionary figure in computing history: Charles Babbage. An English mathematician and inventor, Babbage designed the Difference Engine, a machine intended to calculate polynomial functions. However, his most ambitious creation was the Analytical Engine, which contained many features found in modern computers—including a central processing unit, memory, and the ability to be programmed using punch cards. Although Babbage never completed either machine during his lifetime, his concepts were remarkably prescient. His collaborator, Ada Lovelace, is often credited as the world's first programmer for her work on algorithms for the Analytical Engine.

The early 20th century witnessed the birth of electronic computing. During World War II, British mathematician Alan Turing played a pivotal role in breaking the German Enigma code, a feat that depended heavily on computational methods. Meanwhile, American engineers developed ENIAC (Electronic Numerical Integrator and Computer) in 1945. Weighing over 27 tons and occupying 1,800 square feet, ENIAC could perform 5,000 calculations per second—a staggering speed at the time.

The invention of the transistor in 1947 revolutionised computing. Unlike bulky, unreliable vacuum tubes, transistors were small, efficient, and durable. This breakthrough enabled the development of second-generation computers in the 1950s and 1960s, which were smaller, faster, and more reliable than their predecessors. Perhaps the most transformative moment in computing history occurred in 1971, when Intel released the world's first microprocessor, the Intel 4004. This "computer on a chip" contained all the components of a central processing unit on a single silicon chip. The microprocessor made possible the personal computer revolution of the 1970s and 1980s. Companies like Apple and IBM

brought computers into homes and offices, fundamentally changing how people worked, communicated, and accessed information.

Today, computers have evolved beyond recognition from their ancestors. Smartphones possess more computing power than the machines that guided astronauts to the moon. Supercomputers like Japan's Fugaku can perform over 442 quadrillion calculations per second. Meanwhile, quantum computing promises to solve problems that would take classical computers millions of years.

Yet despite these breathtaking advances, the fundamental principles remain remarkably consistent: computers accept input, process information according to instructions, store data, and produce output. From the simple abacus to quantum processors, this basic framework continues to define what computers are and what they do. The evolution of computers is not merely a story of technological progress—it is a testament to humanity's enduring desire to understand, calculate, and create.

Isikkent Elementary School. (2025, January). *The evolution of computers*. Retrieved March 3, 2026, from <https://www.isikkent.k12.tr/wp-content/uploads/2025/01/THE-EVOLUTION-OF-COMPUTERS.pdf>

SECTION B: Comprehension Questions

PART 1: Multiple Choice

Circle the correct answer.

1. According to the passage, which device is considered the first computing device?

- A) The Pascaline
- B) The Analytical Engine
- C) The abacus
- D) ENIAC

2. What was Alan Turing's main contribution mentioned in the passage?

- A) Inventing the microprocessor
- B) Breaking the German Enigma code
- C) Building the first mechanical calculator
- D) Designing the Analytical Engine

3. The Intel 4004 is significant because it was:

- A) The first electronic computer
- B) The fastest supercomputer

- - C) The first microprocessor
 - D) The first mechanical calculator
4. Which statement BEST summarises the author's view of computing principles?
- A) They have changed completely over time
 - B) They are outdated and irrelevant
 - C) They remain fundamentally the same
 - D) They only apply to modern computers

PART 2: Vocabulary in Context

- Choose the word or phrase that BEST matches the meaning of the word as used in the passage.
5. The word "prescient" (paragraph 3) is closest in meaning to:
- A) inaccurate
 - B) forward-looking
 - C) accidental
 - D) complicated
6. The word "pivotal" (paragraph 4) is closest in meaning to:
- A) minor
 - B) controversial
 - C) crucial
 - D) experimental
7. The word "transformed" (paragraph 7) is closest in meaning to:
- A) delayed
 - B) preserved
 - C) changed dramatically
 - D) threatened
8. The word "enduring" (paragraph 8) is closest in meaning to:
- A) temporary

-
- B) fading
- C) lasting
- D) recent

9. The word "feat" (paragraph 4) is closest in meaning to:

- A) failure
- B) achievement
- C) accident
- D) routine

10. The word "staggering" (paragraph 4) is closest in meaning to:

- A) slow
- B) unimpressive
- C) astonishing
- D) predictable

PART 3: Referencing

- What do the underlined words refer to in the passage?

11. "This simple frame with sliding beads allowed merchants to perform basic arithmetic..." (paragraph 1)

- What does "This simple frame" refer to?

12. "...which contained many features found in modern computers..." (paragraph 3)

- What does "which" refer to?

13. "...a feat that depended heavily on computational methods." (paragraph 4)

- What does "a feat" refer to?

14. "...which were smaller, faster, and more reliable than their predecessors." (paragraph 5)

- What does "which" refer to?

15. "...this basic framework continues to define what computers are..." (paragraph 8)

- What does "this basic framework" refer to?

•
PART 4: Short Answer Questions

- Answer the following questions in complete sentences.

16. Describe TWO features of Charles Babbage's Analytical Engine that were similar to modern computers.

17. Why was the invention of the transistor significant in computing history? (2 marks)

18. Explain the difference between first-generation computers (like ENIAC) and second-generation computers.

19. What evidence does the passage provide to show that modern smartphones are powerful?

20. According to the final paragraph, what does the evolution of computers represent beyond technological progress?

SECTION C: Answer Key

Part 1: Multiple Choice

1. C. Paragraph 1: "The abacus... is widely considered the first computing device."
2. B. Paragraph 4: "Alan Turing played a pivotal role in breaking the German Enigma code"
3. C. Paragraph 6: "Intel released the world's first microprocessor, the Intel 4004."
4. C. Paragraph 8: "the fundamental principles remain remarkably consistent"

Part 2: Vocabulary in Context

5. B - forward-looking "Although Babbage never completed... his concepts were remarkably prescient" (he predicted future developments)
6. C - crucial "played a pivotal role" - key/main/essential role
7. C - changed dramatically | "transformed moment" - a moment that completely changed things
8. C - lasting "enduring desire" - a desire that continues over time
9. B - achievement "a feat that depended on computational methods" - an impressive accomplishment
10. C - astonishing "a staggering speed" - surprisingly fast/amazing

Part 3: Referencing

Q	Answer	Paragraph
11	The abacus	1
12	The Analytical Engine	3
13	Breaking the German Enigma code	4

14	Second-generation computers	5
15	Computers accept input, process information, store data, and produce output	8

Part 4: Short Answer Questions - Model Answers

16. Two features of the Analytical Engine similar to modern computers:

- It contained a central processing unit (CPU)
- It had memory and could be programmed using punch cards

(Accept: ability to be programmed / processing unit / memory / stored instructions)

17. The transistor was significant because:

- Unlike bulky, unreliable vacuum tubes, transistors were small, efficient, and durable
- This breakthrough enabled the development of second-generation computers that were smaller, faster, and more reliable

18. Difference between first and second-generation computers:

- First-generation computers (ENIAC) used bulky vacuum tubes, weighed 27 tons, and occupied huge spaces
- Second-generation computers used transistors, making them smaller, faster, and more reliable

19. Evidence that smartphones are powerful:

- They possess more computing power than the machines that guided astronauts to the moon

20. What computer evolution represents beyond technology:

- It is a testament to humanity's enduring desire to understand, calculate, and create

SECTION D: Extension Activities

Activity 1: Timeline Creation

Create a chronological timeline showing the major developments mentioned in the passage:

Date	Development	Inventor
2700 BCE	Abacus	Mesopotamia
1642	Pascaline	Blaise Pascal
1672	Stepped Reckoner (multiply/divide)	Gottfried Leibniz
1800s	Difference/ Engine Analytical Engine	Charles Babbage
1945	ENIAC	American engineers

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1947	Transistor	/
1971	Microprocessor (Intel 4004)	Intel

Activity 2: Discussion Questions

1. Why do you think Charles Babbage is called "the father of computing" even though he never completed his machines?
2. The passage mentions Ada Lovelace as "the world's first programmer." Why might it be significant that a woman holds this title in the history of technology?
3. Compare the computing power in your pocket (smartphone) with early computers. What does this suggest about future technological advancement?
4. The author states that fundamental computing principles "remain remarkably consistent." Do you agree that despite massive changes, computers essentially do the same things?

XVII. Lecture Nine : Writing : The computer**Think, pair and share**

The above rubric is an attempt to highlight the computer and its different parts. It has been said that the computer is an electronic machine which is invented basically to treat data in a way which is totally different of that of the traditional one. It makes it such a different one because of the electronic approach that is faster and more valuable in terms of validity and certainty. The computer can do so because of the different hardware and software components that make this machine of this importance especially in a world of innovation and technology.

Think :

Taking into consideration the different ideas presented above (reading rubric), write an outline of a descriptive text about the computer. The text has to be built upon three paragraphs. It is noticeable that the text would cover the definition of the computer, the different components of the computer and its categorisation (input/output) and the importance of the machine in its different functions it can ensure.

The outline should respect the different ideas you would explore as well as the different paragraphs that the text would be built upon.

Pair :

With your classmate, try to read your classmate's outline, then decide what should be kept and what should be ignored and/or added with respect to the criteria mentioned above. Make sure that your outline is rich of the ideas that could cover all the aspects required with a special emphasis on the excellency which makes the difference. Excellency means the outstanding ideas that makes your work exceptional and different from your classmates' works.

Share :

This phase is a space where you could share your works in a group. The group will discuss the different outlines and ideas prepared during the different preceding stages. This stage of your writing trip would end up with a written version of your ideas outlined before

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Evaluation Criteria

Criterion	Mark
1- Format	10pts
1.1- Three or more paragraphs well presented and indented with a title of the text.	03
1.2- Language (Capitalisation, punctuation, spelling mistakes, grammatical mistakes)	07pts
2- Content :	10pts
1.1- The convinience of the ideas	02.5
1.2- Cohesion	02.5
1.3- Logical connection of paragraphs and ideas.	02.5
1.4- Excellence	02.5

XVIII. Lecture Ten : CONDITIONAL SENTENCES

CONDITIONAL SENTENCE:

Conditional sentence contains two parts or clauses where the dependent clause gives a condition whereas a result is expressed in the independent clause. The condition clause usually contains an *if* statement. There are several different forms of conditional sentences that allow the writer to express various meanings using different tenses .

Condition (if) clause + result clause

CONDITIONAL Type Zero

In the zero conditional, the present tense is used in both clauses in order to talk about something that is always or generally true. The present tense signifies that these actions are both possible and typical.

Form: If + simple present, simple present

Example 1: If it rains , I take an umbrella with me to work.

Example 2: If I wake up early, I always read in bed.

CONDITIONAL Type one

The first conditional uses the present tense in the *if* clause and the future tense in the result clause. This form is used to talk about something that is a probable future result of a condition.

Form: If + simple present, will + base verb

Example 1: If I see you later, I will say hello.

Example 2: If I don't see you later, I won't be able to say hello.

CONDITIONAL Type Two

The second conditional uses the past tense in the *if* clause and a modal and base verb in the result clause. This form is used to talk about a hypothetical situation that cannot happen or is unlikely to happen.

Form : If + simple past, modal + base verb

Example 1: If I had a million dollars, I would buy a large vacation home.

Example 2: If I were you, I wouldn't wait to study for the test.

Note: The condition and the result are not taking place in the past, but the past tense is used to indicate the unreal nature of the situation.

CONDITIONAL Type Three

The third conditional uses the past perfect in the *if* clause and a modal and present perfect in the result clause.

This form is used to talk about a hypothetical situation in the past that did not happen – typically with an outcome that did not happen and is perhaps the opposite of what did happen.

Form : If + past perfect, modal + present perfect

Example 1: If it had rained last week, the plants would not have died .

Example 2: If I had finished college, I would have become a doctor.

ADDITIONAL NOTES ON CONDITIONALS

There are a few aspects of conditionals that should be noted in order to make their use easier and clearer.

Conditionals can be categorized as *real* and *unreal* . You can think of this as meaning possible or impossible. Zero and first conditionals are possible as they deal with things that are generally true or that could be true in the future. Second, third, and mixed conditionals are impossible because they are either hypothetical or concerned with events in the past that we cannot change .

Real Conditionals: Zero and First

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Unreal Conditionals: Second, Third, and Mixed

In the second conditional, the simple past is used in the condition clause. If the *be* verb is being used, it is typical to use *were* in more formal contexts. If you're speaking informally though, *was* is more usual.

Formal: If I were you, I would drink more water.

Informal: If I was you, I wouldn't stay out so late.

Here are three different exercises about conditionals, ranging from form-focused practice to meaning-based production. An answer key is provided at the end.

Exercise 1: Multiple Choice (Form & Structure)

Choose the best option (A, B, or C) to complete each sentence.

1. If you _____ ice, it floats.
 - A. will freeze
 - B. freeze
 - C. froze

2. If I _____ you, I would apologize immediately.
 - A. am
 - B. were
 - C. will be

3. She _____ the exam if she had studied harder.
 - A. would pass
 - B. would have passed
 - C. will pass

4. If it rains tomorrow, we _____ the picnic.
 - A. cancel

•
B. would cancel

C. will cancel

5. If he _____ more careful, he wouldn't make so many mistakes.

A. is

B. was

C. were

6. They _____ the game if they don't score soon.

A. will lose

B. would lose

C. would have lost

Exercise 2: Sentence Matching (Meaning & Logic)

Match the sentence halves from Column A and Column B to form logical conditional sentences. Write the letter of the correct ending (a-h) next to each number (1-8).

Column A

1. If you heat water to 100 degrees Celsius,

2. If I had woken up earlier,

3. She would be a better teacher

4. If we don't leave now,

5. He would have become a doctor

6. If I find your keys,

7. I would travel around the world

8. If she had asked me for help,

•
Column B

- a. we'll miss the beginning of the movie.
- b. I would have gladly given it.
- c. if she had more patience with children.
- d. it boils.
- e. I would have called you on the way.
- f. if he had been accepted into medical school.
- g. I'll call you immediately.
- h. if I won the lottery.

Exercise 3: Sentence Completion (Production)

Complete the following sentences in a logical and grammatically correct way. Be creative!

1. If I find a wallet on the street, I _____ .
2. I would be absolutely thrilled if my best friend _____ .
3. If the internet had never been invented, our lives _____ .
4. My parents would have been proud of me if I _____ .
5. If you mix the colors blue and yellow, _____ .
6. If I were the leader of my country for one day, I _____ .

Answer Key**Exercise 1:**

1. B (Zero Conditional: general truth)
2. B (Second Conditional: "were" is used for all persons in the "if" clause)
3. B (Third Conditional: past result of a past condition)
4. C (First Conditional: real possibility in the future)

-
- 5. C (Second Conditional: "were" is used for all persons)
- 6. A (First Conditional: real possibility in the future)

Exercise 2:

1. d (Zero Conditional: scientific fact)
2. e (Third Conditional: past hypothetical)
3. c (Second Conditional: present hypothetical)
4. a (First Conditional: future possibility)
5. f (Third Conditional: past hypothetical)
6. g (First Conditional: future possibility)
7. h (Second Conditional: present/future hypothetical)
8. b (Third Conditional: past hypothetical)

Exercise 3: (Sample Answers - Yours will be different but should follow the same pattern)**

1. ...will try to return it to its owner. (First Conditional)
2. ...bought me a house. (Second Conditional)
3. ...would be very different. (Third Conditional)
4. ...had become a doctor. (Third Conditional)
5. ...you get green. (Zero Conditional)
6. ...would focus on improving education. (Second Conditional)

XIX. Lecture Eleven : Pronunciation of Final 'S'

1. Introduction to Final 'S' Pronunciation

In English, the letter ‘-s or –es’ at the end of words can be pronounced in ‘three different ways’:

- ‘/ɪz/’ (like "iz") – adds an extra syllable
- ‘/s/’ (like "sss") – voiceless, no vibration
- ‘/z/’ (like "zzz") – voiced, with vibration

This applies to:

- Plural nouns (cats, dogs, buses)
- Third person singular verbs (runs, goes, watches)
- Possessive nouns (John's, girl's, children's)
- Contractions (it's, he's, that's)

Table : The Three Sounds of Final 'S'

Sound	Symbol	Voicing	When to Use	Example
/ɪz/	/ɪz/	Voiced	After sibilants(s, z, sh, ch, j, x)	buses, watches
/s/	/s/	Voiceless	After voiceless consonants	cats, books
/z/	/z/	Voiced	After voiced sounds (vowels & voiced consonants)	dogs, pens

3. The /ɪz/ Sound (The Extra Syllable)

Rule: Add /ɪz/ when the word ends in a ‘sibilant sound’ (hissing, buzzing, or shushing sounds).

Sibilant Sounds:

Sound	Symbol	Example Word
/s/	/s/	bus, gas
/z/	/z/	buzz, quiz
/ʃ/	/ʃ/	dish, wish
/ʒ/	/ʒ/	garage, massage
/tʃ/	/tʃ/	watch, match
/dʒ/	/dʒ/	judge, bridge

Key Point: ADDS A SYLLABLE

- bus (1 syllable) → buses (2 syllables: bus-es)
- watch (1 syllable) → watches (2 syllables: watch-es)
- box (1 syllable) → boxes (2 syllables: box-es)

Examples:

Base Word	Final Sound	Plural/3rd Person	Pronunciation	Syllables
bus	/s/	buses	/'bʌsɪz/	2
buzz	/z/	buzzes	/'bʌzɪz/	2
dish	/ʃ/	dishes	/'dɪʃɪz/	2
garage	/ʒ/	garages	/gə'reɪʒɪz/	3
watch	/tʃ/	watches	/'wɒtʃɪz/	2
judge	/dʒ/	judges	/'dʒʌdʒɪz/	2
box	/ks/	boxes	/'bɒksɪz/	2
kiss	/s/	kisses	/'kɪsɪz/	2
church	/tʃ/	churches	/'tʃɜ:tʃɪz/	2
rose	/z/	roses	/'rəʊzɪz/	2

4. The /s/ Sound (Voiceless)

Rule: Pronounce final '-s' as '/s/' when the word ends in a 'voiceless consonant'

Voiceless Consonants:

Sound	Symbol	Example
/p/	/p/	cup, stop
/t/	/t/	cat, hat
/k/	/k/	book, clock
/f/	/f/	roof, laugh
/θ/	/θ/	month, path

Key Point: NO EXTRA SYLLABLE

- cat (1 syllable) → cats (1 syllable)
- book (1 syllable) → books (1 syllable)

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Examples:

Base Word	Final Sound	Plural/3rd Person	Pronunciation
cat	/t/	cats	/kæts/
book	/k/	books	/bʊks/
cup	/p/	cups	/kʌps/
roof	/f/	roofs	/ru:fs/
month	/θ/	months	/mʌnθs/
stop	/p/	stops	/stɒps/
laugh	/f/	laughs	/læfs/
ship	/p/	ships	/ʃɪps/
hat	/t/	hats	/hæts/
clock	/k/	clocks	/klɒks/

5. The /z/ Sound (Voiced)

Rule: Pronounce final '-s' as '/z/' when the word ends in a 'voiced sound'.

Voiced Sounds Include:

1. All vowels (a, e, i, o, u and diphthongs)
2. Voiced consonants:

Sound	Symbol	Example
/b/	/b/	crab, web
/d/	/d/	bed, card
/g/	/g/	dog, bag
/v/	/v/	glove, love
/ð/	/ð/	bathe, smooth
/m/	/m/	ham, name
/n/	/n/	pen, fan
/ŋ/	/ŋ/	song, ring
/l/	/l/	ball, hill
/r/	/r/	car, door
All vowels	/ə, i, æ, etc./	boy, tree, car

The pronunciation depends on the 'sound before -e', not the spelling.

Word	Final Sound	Category	Pronunciation
rose	/z/	Sibilant → /ɪz/	roses /'rəʊzɪz/
horse	/s/	Sibilant → /ɪz/	horses /'hɔ:sɪz/
cake	/k/	Voiceless → /s/	cakes /keɪks/
game	/m/	Voiced → /z/	games /geɪmz/

•
B. Words Ending in -th

Word	Final Sound	Plural	Pronunciation
month	/θ/ (voiceless)	months	/mʌnθs/
mouth	/θ/ (voiceless)	mouths	/maʊðz/ (sound changes to /ð/ + /z/)

Exception: Some -th words become voiced in plural:

- path → paths /pɑ:ðz/

- bath → baths /bɑ:ðz/

- mouth → mouths /maʊðz/

C. Words Ending in -gh/-ph

These usually produce /f/ sound (voiceless):

Word	Final Sound	Plural	Pronunciation
laugh	/f/	laughs	/læfs/
graph	/f/	graphs	/græfs/
cough	/f/	coughs	/kɒfs/

D. Irregular Plurals (No -s)

These follow different rules entirely:

Singular	Plural	Rule
child	children	No -s ending
man	men	Vowel change
mouse	mice	Vowel change
sheep	sheep	Same form
fish	fish	Same form
tooth	teeth	Vowel change

7. Common Mistakes

Mistake 1: Adding /ɪz/ to everything

‘cats’ pronounced as "cat-iz"

Cats’ = /kæts/ (one syllable)

Mistake 2: Using /s/ after vowels

‘Dogs’ pronounced as "dogs" with /s/

‘dogs’ = /dɒgz/ (voiced /z/)

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Mistake 3: Forgetting the extra syllable

'bus' + 'es' = "bus" (no change)

'buses' = /'bʌsɪz/ (2 syllables)

Mistake 4: Confusing -ed and -s rules

watched = /wɒtʃt/ (one syllable)

watches = /wɒtʃɪz/ (two syllables)

Mistake 5: Over-voicing voiceless endings

cats = /kædz/

cats = /kæts/

Mistake 6: Not voicing the /z/

pens = /penz/ pronounced with weak /s/

pens = /penz/ (buzzing /z/ sound)

9. Practice Exercises

Exercise 1: Categorization

Place each word into the correct column based on the pronunciation of the final -s.

Words	/ɪz/	/s/	/z/

cats , dogs , buses, books, pens, watches, cars, boxes, cups, roses, hats, bags, dishes, months, names.

Exercise 2: Choose the Correct Pronunciation. Circle the correct pronunciation for the final -s.

1. cats

a) /kæts/ b) /kætz/ c) /kætɪz/

2. buses

a) /bʌs/ b) /bʌsɪz/ c) /bʌzɪz/

•
3. dogs

a) /dɒgz/ b) /dɒgz/ c) /dɒgɪz/

4. watches

a) /wɒtʃs/ b) /wɒtʃz/ c) /wɒtʃɪz/

5. books

a) /bʊks/ b) /bʊkz/ c) /bʊkɪz/

6. roses

a) /rəʊz/ b) /rəʊsɪz/ c) /rəʊzɪz/

7. months

a) /mʌnθs/ b) /mʌnðz/ c) /mʌnθɪz/

8. boxes

a) /bɒks/ b) /bɒksɪz/ c) /bɒkzɪz/

9. boys

a) /bɔɪs/ b) /bɔɪz/ c) /bɔɪɪz/

10. laughs

a) / læfz/ b) /læfs/ c) /læfɪz/

Exercise 3: Add the -s/-es and Write the Pronunciation. Write the plural form and the phonetic pronunciation.

Singular	Plural	Pronunciation
cat		
bus		
dog		
watch		
book		
rose		
cup		
box		
boy		
dish		
month		
pen		
church		
car		
kiss		

•
10. Answer Key

Exercise 1: Categorization

<i>/ɪz/</i>	<i>/s/</i>	<i>/z/</i>
buses	Cats	dogs
watches	books	pens
boxes	cups	cars
roses	hats	bags
dishes	months	names

Exercise 2: Choose the Correct Pronunciation

1. a) /kæts/
2. b) /bʌsɪz/
3. b) /dɒgz/
4. c) /wɒtʃɪz/
5. a) /bʊks/
6. c) /rəʊzɪz/
7. a) /mʌnθs/
8. b) /bɒksɪz/
9. b) /bɔɪz/
10. b) /læfs/

Exercise 3: Add the -s/-es and Write the Pronunciation

Singular	Plural	Pronunciation
cat	cats	/kæts/
bus	buses	/'bʌsɪz/
dog	dogs	/dɒgz/
watch	watches	/'wɒtʃɪz/
book	books	/bʊks/
rose	roses	/'rəʊzɪz/
cup	cups	/kʌps/
box	boxes	/'bɒksɪz/
boy	boys	/bɔɪz/
dish	dishes	/'dɪʃɪz/
month	months	/mʌnθs/
pen	pens	/penz/
church	churches	/'tʃɜːtʃɪz/
car	cars	/kɑːz/
kiss	kisses	/'kɪsɪz/

**XX. Lecture Twelve : Vocabulary : CORE COMPUTER SCIENCE
TERMINOLOGY in English – Arabic – French**

English Term	Arabic	French
1 Computer	حاسوب / كمبيوتر	Ordinateur
2 Hardware	عتاد / أجهزة	Matériel
3 Software	برمجيات	Logiciel
4 Processor / CPU	معالج	Processeur
5 Memory	ذاكرة	Mémoire
6 RAM (Random Access Memory)	ذاكرة وصول عشوائي	Mémoire vive
7 ROM (Read Only Memory)	ذاكرة قراءة فقط	Mémoire morte
8 Hard drive	قرص صلب	Disque dur
9 SSD (Solid State Drive)	قرص مزود إلكتروني	Disque SSD
10 Motherboard	لوحة أم	Carte mère
11 Peripheral	وحدة طرفية	Périphérique
12 Input	إدخال	Entrée
13 Output	إخراج	Sortie
14 Device	جهاز	Périphérique / Appareil
15 Screen / Monitor	شاشة	Écran
16 Keyboard	لوحة مفاتيح	Clavier
17 Mouse	فأرة	Souris
18 Printer	طابعة	Imprimante
19 Scanner	ماسح ضوئي	Scanner
20 Port	منفذ	Port
21 USB	ناقل تسلسلي عام	USB
22 Cable	كابل	Câble
23 Power supply	مزود طاقة	Alimentation
24 Fan	مروحة	Ventilateur
25 Battery	بطارية	Batterie

XXI. Lecture Thirteen : How to Write a Scientific Report: A Complete Guide

1. Before You Write: Preparation

Writing a scientific report begins long before you type the first word.

Define Your Purpose: What question are you trying to answer? For example, "Which sorting algorithm is fastest?"

Know Your Audience: You are writing for your professor and other computer science students. You can use technical terminology, but you must explain your specific approach clearly.

Gather Your Data: Ensure all your experimental results, code outputs, and notes are organized. You cannot write the report without the data.

Understand the IMRAD Structure: Familiarize yourself with the standard structure explained below before you start.

2. The Standard Structure (IMRAD)

Almost every scientific report follows the IMRAD structure, which stands for:

- Introduction
- Methodology
- Results
- And
- Discussion

3. Step by Step Writing Guide

1. Title

Goal: Be specific and descriptive.

How to write it:

- Include the key variables. For example, "The Effect of X on Y"
- Mention the type of study. For example, "A Comparative Analysis" or "An Investigation into"

Example: "A Comparative Analysis of Sorting Algorithm Performance on Large Datasets"

Tip: Avoid vague titles like "Computer Science Report" or "Sorting Algorithms."

2. Abstract

Goal: To provide a miniature version of the entire report. This is often the only part people read, so it must be clear and concise.

How to write it by answering these four questions in four to five sentences:

1. Background or Objective: What is the problem? For example, "Sorting is fundamental, but algorithm choice matters."
2. Method: What did you do? For example, "We tested Bubble, Merge, and Quick Sort on datasets of 100, 1,000, and 10,000 items."
3. Key Result: What was the main finding? For example, "Merge Sort and Quick Sort were significantly faster on large datasets."
4. Conclusion or Implication: Why does it matter? For example, "This shows that choosing the right algorithm is critical for performance."

Important: Write the abstract last, after you have finished the entire report.

3. Introduction

Goal: To set the scene and explain the purpose of your experiment.

How to write it using the funnel method:

1. Start Broad: Begin with general context. Why is this topic important in computer science? For example, "Sorting is a fundamental operation in databases and search engines."
2. Narrow Down: Introduce the specific elements of your study. For example, "Three common algorithms are Bubble Sort, Merge Sort, and Quick Sort. Each has different theoretical time complexities."
3. State the Problem or Objective: Clearly state the purpose of your experiment. For example, "The objective of this experiment is to compare the real world execution times of these algorithms."
4. State the Hypothesis: What do you expect to happen? For example, "We hypothesize that Merge Sort and Quick Sort will outperform Bubble Sort as data size increases."

4. Methodology

Goal: To describe exactly what you did so that another researcher could replicate your experiment. Think of this as the materials and methods section.

How to write it:

-
- Be Precise: Use specific details.

- Use Past Tense: You are describing what you already did.

- Structure it logically:

1. Environment: Hardware such as CPU and RAM, and software including operating system, programming language, and libraries.

2. Data Generation: How was the test data created? For example, "Random integers were generated using Python's random module."

3. Procedure: A step by step description of the experiment. For example, "Each algorithm was run five times on each dataset. Execution time was measured using the time module."

Example: "The experiment was conducted on a laptop with an Intel Core i5 processor and 8GB of RAM, running Python 3.9."

5. Results

Goal: To present the data objectively, without interpretation.

How to write it:

- Guide the Reader: Use text to highlight the main trends, but do not explain them.

- Use Visuals: Refer to tables and figures such as graphs. For example, "Table 1 shows the average execution times."

- Be Honest: Present all relevant data, even if it does not support your hypothesis.

Example Text: "As shown in Figure 1, Bubble Sort's execution time increased sharply with dataset size, while Merge Sort and Quick Sort increased only gradually."

Tip: Place tables and figures close to the text that refers to them.

6. Discussion

Goal: To interpret your results. This is the most important section for demonstrating your understanding.

How to write it:

1. Restate Key Findings: Start by reminding the reader of your main result. For example, "The results clearly support the hypothesis."

2. Explain the Trends: Connect your findings to the theory. Why did this happen? For example, "Bubble Sort's $O(n^2)$ complexity explains its poor performance on 10,000 items."

-
- 3. Compare with Expectations: Did your results match your hypothesis? If not, why not?
- 4. Discuss Implications: Why do these findings matter for a computer scientist? For example, "This confirms that algorithm choice has real world consequences for software performance."
- 5. Acknowledge Limitations: Were there any weaknesses in your experiment? For example, "This test only used random data; performance might differ on nearly sorted data."

7. Conclusion

Goal: To summarize the report and provide closure.

How to write it:

- Summarize the Main Finding: In one to two sentences, restate your most important result.
- Restate the Main Implication: Why is this finding useful?
- Suggest Future Work: What could be researched next? For example, "Future work could test these algorithms on non random data or compare additional algorithms like Heap Sort."

Example: "In conclusion, this experiment confirmed that Merge Sort and Quick Sort are significantly more efficient than Bubble Sort for sorting large datasets. Future research could investigate their performance on real world, partially sorted data."

8. References

Goal: To give credit to sources and allow readers to find them.

How to write it:

- Use a consistent citation style such as APA, IEEE, or ACM.
- List only the sources you actually cited in your report.
- Use a reference manager like Zotero or Mendeley to help format them correctly.

4. Formatting and Style Tips

Tense:

- **Abstract:** Use past tense to summarize completed work.
- **Introduction:** Mostly present tense for established facts and future tense for your objective.
- **Methodology:** Past tense for what you did.
- **Results:** Past tense for what was found.
- **Discussion:** Present tense for what the results mean.

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Voice: Use the passive voice in Methodology, for example "The data were collected," to focus on the action, not the person. In other sections, using "we" is often acceptable, for example "We hypothesize."

Clarity: Use short, clear sentences. Define acronyms on first use. For example, "Random Access Memory (RAM)."

Figures and Tables: Number them, for example Figure 1 or Table 1, and give them descriptive captions. Refer to them in your text.

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Recommended Databases for Supplementary Readings

- ✓ ACM Digital Library
- ✓ IEEE Xplore
- ✓ SpringerLink
- ✓ ScienceDirect
- ✓ arXiv.org (Computer Science section)

XXIII. Appendix

Glossary of computer science terms translated to Arabic and French :

| 26 | Operating System (OS) | نظام تشغيل | Système d'exploitation |

| 27 | File | ملف | Fichier |

| 28 | Folder / Directory | مجلد | Dossier |

| 29 | Path | مسار | Chemin |

| 30 | Extension | امتداد | Extension |

| 31 | Desktop | سطح المكتب | Bureau |

| 32 | Window | نافذة | Fenêtre |

| 33 | Icon | أيقونة | Icône |

| 34 | Menu | قائمة | Menu |

| 35 | Command | أمر | Commande |

| 36 | Setting / Preference | إعداد | Paramètre |

| 37 | User | مستخدم | Utilisateur |

| 38 | Administrator | مسؤول | Administrateur |

| 39 | Login | تسجيل دخول | Connexion |

| 40 | Password | كلمة مرور | Mot de passe |

| 41 | Driver | برنامج تشغيل | Pilote |

| 42 | Update | تحديث | Mise à jour |

| 43 | Install | تثبيت | Installer |

| 44 | Uninstall | إلغاء تثبيت | Désinstaller |

| 45 | Backup | نسخ احتياطي | Sauvegarde |

| 46 | Crash | تعطل | Plantage |

| 47 | Error | خطأ | Erreur |

| 48 | Warning | تحذير | Avertissement |

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- | 49 | Log | سجل | Journal |
- | 50 | Kernel | نواة | Noyau |
- | 51 | Network | شبكة | Réseau |
- | 52 | Internet | إنترنت | Internet |
- | 53 | Web | ويب | Web |
- | 54 | Website | موقع ويب | Site web |
- | 55 | Page | صفحة | Page |
- | 56 | Link / Hyperlink | رابط | Lien |
- | 57 | URL | عنوان | URL |
- | 58 | Domain | نطاق | Domaine |
- | 59 | Server | خادم | Serveur |
- | 60 | Client | عميل | Client |
- | 61 | Host | مضيف | Hôte |
- | 62 | IP Address | عنوان IP | Adresse IP |
- | 63 | DNS | نظام أسماء النطاقات | DNS |
- | 64 | Protocol | بروتوكول | Protocole |
- | 65 | HTTP / HTTPS | بروتوكول نقل النص | HTTP / HTTPS |
- | 66 | FTP | بروتوكول نقل الملفات | FTP |
- | 67 | TCP/IP | بروتوكول التحكم بالنقل | TCP/IP |
- | 68 | Router | موجه | Routeur |
- | 69 | Switch | مبدل | Commutateur |
- | 70 | Firewall | جدار ناري | Pare-feu |
- | 71 | Wi-Fi | واي فاي | Wi-Fi |
- | 72 | Bandwidth | عرض نطاق | Bande passante |
- | 73 | Download | تنزيل | Téléchargement (descendant) |
- | 74 | Upload | رفع | Téléchargement (montant) |

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- | 75 | Browser | متصفح | Navigateur |
- | 76 | Search Engine | محرك بحث | Moteur de recherche |
- | 77 | Cloud Computing | حوسبة سحابية | Informatique en nuage |
- | 78 | VPN | شبكة خاصة افتراضية | VPN |
- | 79 | Programming | برمجة | Programmation |
- | 80 | Programming Language | لغة برمجة | Langage de programmation |
- | 81 | Code | كود / شيفرة | Code |
- | 82 | Source Code | كود مصدري | Code source |
- | 83 | Compiler | مترجم | Compilateur |
- | 84 | Interpreter | مفسر | Interpréteur |
- | 85 | Algorithm | خوارزمية | Algorithme |
- | 86 | Variable | متغير | Variable |
- | 87 | Function | دالة | Fonction |
- | 88 | Array | مصفوفة | Tableau |
- | 89 | Object | كائن | Objet |
- | 90 | Class | صنف | Classe |
- | 91 | Method | أسلوب / طريقة | Méthode |
- | 92 | Loop | حلقة | Boucle |
- | 93 | Condition | شرط | Condition |
- | 94 | Boolean | منطقي | Booléen |
- | 95 | Integer | عدد صحيح | Entier |
- | 96 | String | سلسلة نصية | Chaîne |
- | 97 | Debugging | تنقيح | Débogage |
- | 98 | Error | خطأ | Erreur |
- | 99 | Bug | خلل | Bogue |
- | 100 | Framework | إطار عمل | Cadre / Infrastructure |
- | 101 | Database | قاعدة بيانات | Base de données |

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- | 102 | Query | استعلام | Requête |
- | 103 | API | واجهة برمجة التطبيقات | API |
- | 104 | Version Control | تحكم بالنسخ | Gestion de versions |
- | 105 | Repository | مستودع | Dépôt |
- | 106 | Open Source | مفتوح المصدر | Open source |
- | 107 | Artificial Intelligence | ذكاء اصطناعي | Intelligence artificielle |
- | 108 | Machine Learning | تعلم آلي | Apprentissage automatique |
- | 109 | Data Science | علم البيانات | Science des données |
- | 110 | Big Data | بيانات ضخمة | Mégadonnées |
- | 111 | Security | أمن | Sécurité |
- | 112 | Cybersecurity | أمن سيبراني | Cybersécurité |
- | 113 | Hacker | مخترق | Hacker / Pirate |
- | 114 | Attack | هجوم | Attaque |
- | 115 | Virus | فيروس | Virus |
- | 116 | Malware | برمجيات خبيثة | Logiciel malveillant |
- | 117 | Ransomware | برمجية فدية | Rançongiciel |
- | 118 | Phishing | تصيد | Hameçonnage |
- | 119 | Encryption | تشفير | Chiffrement |
- | 120 | Decryption | فك تشفير | Déchiffrement |
- | 121 | Authentication | مصادقة | Authentification |
- | 122 | Authorization | تفويض | Autorisation |
- | 123 | Certificate | شهادة | Certificat |
- | 124 | Vulnerability | ثغرة | Vulnérabilité |
- | 125 | Patch | تصحيح | Correctif |

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