

# ملخص

## CHAPTER 1

اسم المقرر: مقدمة في الحوسبة  
رمز المقرر: 111-عال-5

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# An introduction to computer science

## 1) Definition of a computer:

- Computer is an electronic device which:



## 2) Definition of a computer science:

- Computer science is the study of algorithms, including their:

**1**Formal and mathematical properties: Making algorithms - correct and efficient.

**2**Applications: Using algorithms design correct and efficient application programs.

**3**Languages: Translate the algorithms into the programming language.

**4** Hardware: Need computers to execute the algorithms.



### 3) Definition of algorithms:

- **Algorithms**: is a well-defined procedure that allows a computer to solve a problem

(OR)

A set of steps for solving a particular problem.

- An algorithm is a list that looks like:

STEP 1: Do something

STEP 2: Do something

STEP 3: Do something

STEP 4: Stop

### 4) Birth & history of Computers: 1940 - 1950:

- John Von Neumann invented the modern computer.

- John Von Neumann is called as the “Father of the Modern Computer”.

- Proposed the stored program computer concept in the year 1946.

- Also known as Vonn Neuman architecture.

- Stored program computer: stores the program along with data in memory

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- Research group at the University of Pennsylvania built one of the first stored program computer, called **EDVAC** in 1951.

#### First stored program computers names:

EDVAC

EDSAC

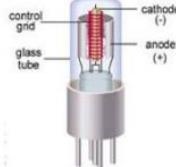
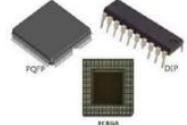
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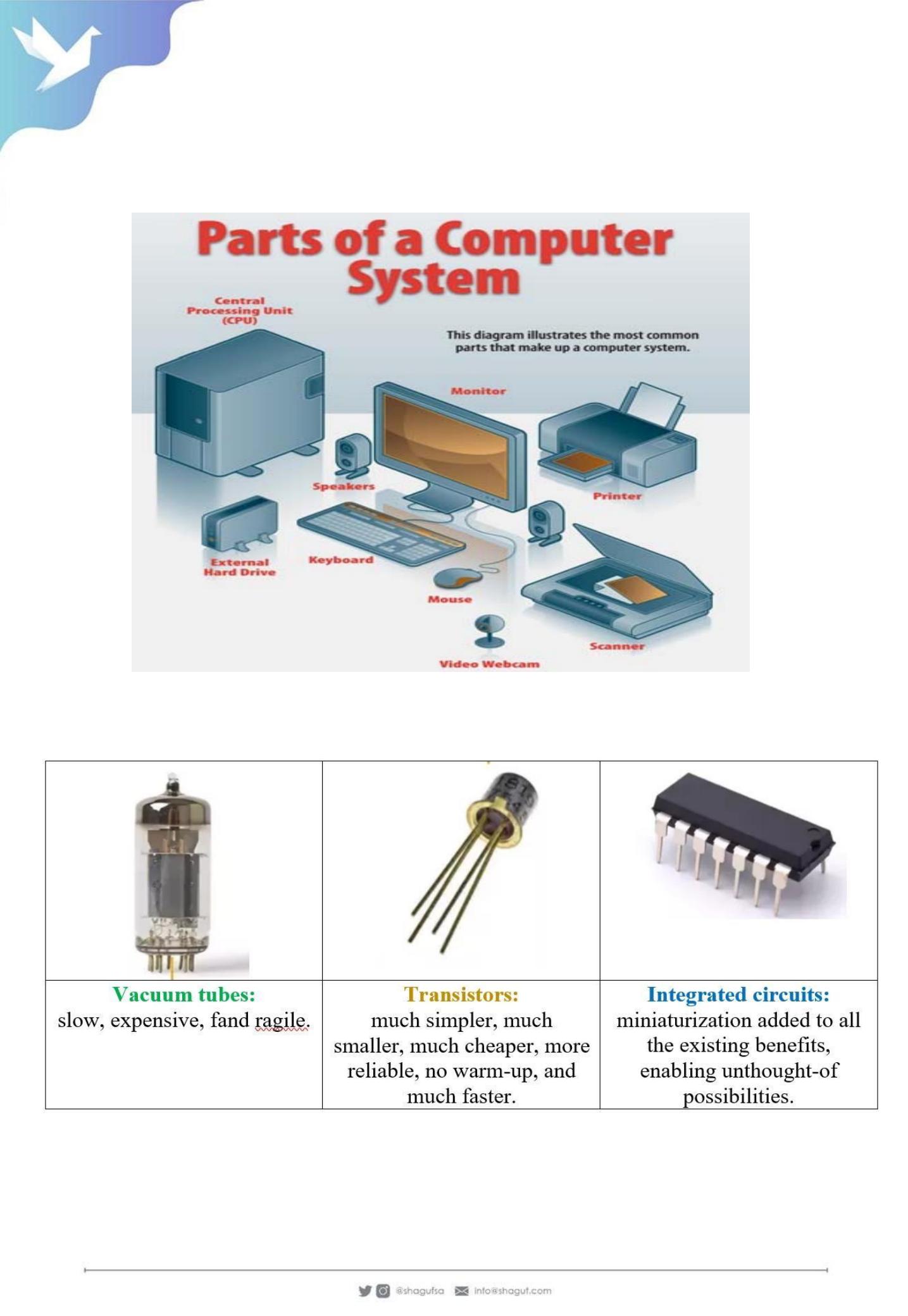


## - Why are algorithms so Important?

- 1- Algorithms provide a solution to the problems.
- 2- It is an organized and sequential (step-by-step) way to solve a particular problem.

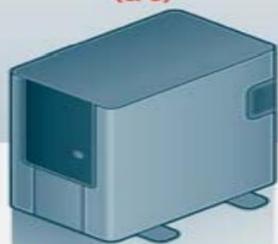
## 5) Generations of Computers:

	<b>First generation (1950-1957)</b>	<b>Second generation (1957-1965)</b>	<b>Third generation (1965-1975)</b>	<b>Fourth generation (1975-1985)</b>	<b>Fifth generation (1985-Now)</b>
<b>Technology Used</b>	Vacuum tubes (to store data and programs.)	Transistors.	Integrated Circuits (IC)	Processors	<ul style="list-style-type: none"> <li>- Parallel processors</li> <li>- High-resolution graphics.</li> <li>- Multimedia (Audio, Video, Touch screen).</li> <li>- Games.</li> </ul>
<b>Computer Size</b>	Multiple rooms.	Single room.	Desk size	Typewriter Desktop PC	Like: smartphones, Laptops, tablets, E-readers etc.
<b>Reliability</b>	Not reliable.	Increase but less	Increased	Much increased	Much increased
<b>Cost</b>	Expensive.	Reduced	Still reduced	Much reduced	*
<b>Speed</b>	Very slow	Still reduced	Fast	Very fast	*
<b>Features</b>	*	Used High-level programming languages like COBOL and Fortran	<ul style="list-style-type: none"> <li>-Minicomputer developed.</li> <li>- Birth of Software Industry.</li> </ul>	<ul style="list-style-type: none"> <li>-First microcomputer developed</li> <li>Desktop and PC .</li> <li>- Computer Networks.</li> <li>- Electronic mail.</li> <li>- (GUI) like Windows, Mac OS.</li> <li>-Embedded systems (Traffic Signals).</li> </ul>	<ul style="list-style-type: none"> <li>- Internet.</li> <li>- Wireless data communications.</li> <li>- Ubiquitous computing.</li> <li>- Cloud computing.</li> </ul>
<b>Pictures</b>					



# Parts of a Computer System

Central Processing Unit (CPU)



This diagram illustrates the most common parts that make up a computer system.

Monitor



Speakers



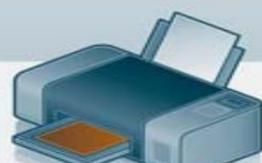
Keyboard



Mouse



Printer



Scanner



External Hard Drive

Keyboard

Video Webcam



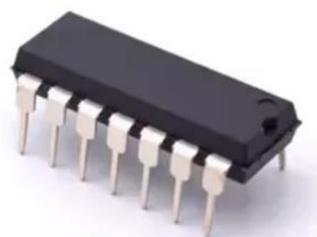
## Vacuum tubes:

slow, expensive, fand fragile.



## Transistors:

much simpler, much smaller, much cheaper, more reliable, no warm-up, and much faster.



## Integrated circuits:

miniaturization added to all the existing benefits, enabling unthought-of possibilities.

### **دعاة قبل المذاكرة :**

اللهم اني أسألك فهم النبيين وحفظ المرسلين والملائكة المقربين .

اللهم اجعل السنننا عامرة بذكرك وقلوبنا بخشيتك إنك على كل شيء قادر وحسنا اللهم ونعم الوكيل .

### **دعاة بعد المذاكرة :**

اللهم إني استودعك ما قرأت وما حفظت وما تعلمت فرده لي عند حاجتي إليه إنك على كل شيء قادر وحسنا اللهم ونعم الوكيل.

### **عند التوجيه إلى الإختبار :**

اللهم إني توكلت عليك وسلمت أمري إليك لا ملجأ ولا منجي منك إلا إليك .

### **عند دخول لجنة الإختبار :**

ربi ادخلني مدخل صدق وأخرجنـي مخرج صدق واجعل لي من لدنك سلطاناً نصيراً .

### **عند بداية الإجابة :**

ربi اشرح لي صدري ويسـر لي أمري واحـلل عـدة من لـساني يـفقـه قولـي بـسم الله الفتـاح ، اللـهم لا سـهل إـلا ما جـعلـته سـهـلا فـإنـك ان شـئـت تـجـعـل الصـعـب سـهـلا يا أـرـحـمـالـراـحـمـينـ.

### **عند تعسر الإجابة :**

لا إـله إـلا أـنت سـبـانـك إـنـي كـنـت مـن الـظـالـمـين ، يا حـي يا قـيـوم بـرـحـمـتك استـغـيـثـ ، ربـي إـنـي مـسـنـي الـضـرـ وـأـنـت أـرـحـمـالـراـحـمـينـ .

### **عند النسيان :**

الـلـهم يا جـامـع النـاسـ لـيـومـ لا رـيبـ فـيـهـ اـجـمـعـنـي بـضـالـتـيـ +ـ الـحـوـقـلـةـ وـالـإـسـتـغـفـارـ

### **عند الانتهاء من الإختبار :**

الـحـمـدـلـلـهـ الـذـيـ هـدـانـاـ لـهـذـاـ وـمـاـ كـنـاـ لـنـهـتـدـيـ لـوـلـاـ إـنـ هـدـانـاـ اللـهـ .