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**CHAPTER 1  
EVOLUTION OF COMPUTERS**

You know that the computer is a fast calculating machine that performs different operations. Although the computer was originally invented for high speed and accurate calculations, but it is not just a calculating device.

**HISTORY OF COMPUTERS**

Do you know how the computer was developed? The development of the computer started with mechanical devices. Slowly, they were improved to electro-mechanical devices and finally the electronic computers came into existence. Let us learn about some of the early computers.

| **Name** | **Developed in/by** | **Year** | **Features** |
| --- | --- | --- | --- |
| **Abacus** | China | 3000 BCE | - first mechanical device used for calculations |

* performed addition, subtraction, multiplication and division
* made up of wooden frame with rods, each rod having beads |  
  | **Napier’s Bones** | John Napier | 1617 | - performed multiplication with repeated addition and division with repeated subtraction
* consisted rectangular strips of rods made from bones and ivory
* rods had numbers written on it |  
  | **Pascaline** | Blaise Pascal | 1642 | - performed only addition and subtraction
* looked like a rectangular box
* used gears, wheels and dials
* numbers were displayed by rotating the wheels
* also known as adding machine |  
  | **Analytical Engine** | Charles Babbage | 1837 | - It was a general purpose fully program-controlled and automatic digital computer.
* had five units – input, output, store, mill (CPU) and control
* known to be the basis for all the modern day computers |

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| **Name** | **Developed in/by** | **Year** | **Features** |
| --- | --- | --- | --- |
| **Tabulating Machine** | Dr Herman Hollerith | 1890s | - first electronic machine |

* capable of reading data, processing it and giving output
* used punch cards to give input, record and store information |  
  | **Mark-I** | Howard H. Aiken | 1944 | - first fully automatic digital computer
* marked the beginning of the era of modern computing
* also known as automatic sequence-controlled calculator |  
  | **EDSAC (Electronic Delay Storage Automatic Calculator)** | Maurice Wilkes | 1949 | - first electronic computer that used stored programs
* faster than ENIAC |  
  | **UNIVAC-I (Universal Automatic Computer)** | J. Presper Eckert, John Mauchly | 1951 | - first commercially available electronic computer
* first computer to handle both numeric and text data |

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**GENERATIONS**

Do you know what the term generation means? In terms of time, it means age group. For example, you are your parents’ child. Similarly, your father is your grandparents’ child. So, your parents are the first generation of your grandparents and you are the second generation of your grandparents. Hence, in this case there are three generations: your grandfather, father and you, similarly, the computer also has different generations.

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**GENERATIONS OF COMPUTERS**

Computers are classified into five generations based on the technology used, the way they work and their size. Features of these generations of computers are:

**First Generation Computers (1946–1959)**

* They used **vacuum tubes**.
* They were very expensive.
* They were heavy and large in size.
* They generated a lot of heat.  
  Examples: **ENIAC, EDVAC, UNIVAC**

**Second Generation Computers (1959–1965)**

* They used electronic devices called **transistors**.
* They were smaller in size than the first generation computers.
* They were faster and less expensive than the first generation computers.  
  Examples: **ENIAC 1401, IBM 700, CDC 160**

**Third Generation Computers (1965–1971)**

* They used electronic devices called **Integrated Circuits (ICs)**.
* They were smaller in size and less expensive than the second generation computers.
* They were faster and more accurate than the second generation computers.  
  Examples: **IBM 360, ICL 1900, VAX-750**

**Fourth Generation Computers (1971–1980)**

* They use a device called **microprocessor**.
* They are smaller in size.
* They are cheaper and faster.
* They are very easy to handle.  
  Examples: **IBM 4300, ICL 2900, HP 9000**

**Fifth Generation Computers (1980 to the Present)**

* The fifth generation computers are based on **Artificial Intelligence**.
* They are intelligent like human beings.
* They are able to think and take decisions like us.
* They are used in areas such as robotics, designing and defence at present.

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**Key Points**

* Abacus, Napier’s Bones, Pascaline, Difference Engine, Analytical Engine, Tabulating Machine, Mark-I, ENIAC, EDSAC and UNIVAC-I are involved in the evolution of the computer.
* Abacus was first mechanical device used for calculations.
* Computers are classified into five generations.
* The fifth generation computers are based on Artificial Intelligence.

**EXERCISES According to NEP Guidelines**

**A. Picture Quiz**

1. Identify the machine that uses punch cards to give input, record and store information.
2. Identify Abacus from the following pictures.

**B. Multiple Choice Questions**

1. IC stands for .........................  
   (a) Integrated Chip  
   (b) Inter-related Circuit  
   (c) Integrated Circuit
2. Computers are classified into ................ generations.  
   (a) four  
   (b) five  
   (c) six
3. .............. generation computers used transistors.  
   (a) First  
   (b) Second  
   (c) Third
4. Use of ................ revolutionised the computer system completely.  
   (a) microprocessors  
   (b) ICs  
   (c) vacuum tubes

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**C. Fill in the blanks**

1. Abacus was developed in \_\_\_\_\_\_\_\_\_\_\_\_.
2. \_\_\_\_\_\_\_\_\_\_\_\_ is also known as an adding machine.
3. The Analytical Engine was invented in the year \_\_\_\_\_\_\_\_\_\_\_\_.
4. The third generation computers used electronic devices called \_\_\_\_\_\_\_\_\_\_\_\_.
5. Fifth generation computers are based on \_\_\_\_\_\_\_\_\_\_\_\_.

**D. Quiz**

1. Who invented Pascaline?
2. What was the time period of the third generation computers?

**E. Answer the following**

1. Write any one feature of UNIVAC-I.
2. Who invented Tabulating machine and when?
3. Write the full form of EDSAC and its features.
4. Write any two features of the machine invented by Howard H. Aiken.
5. Differentiate between third and fourth generation of computers.

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**F. Computer In Everyday Life (Application-based Question)**

Which generation of computer should a bank use to do all its operations to meet the customer’s requirements? Why do you suggest so?

**TECH ZONE** *(Cross Curricular-GK)*

**A. Project**

Rearrange the jumbled letters and write the names of the following famous personalities. Create a PowerPoint presentation referring these personalities.

1. NHOJ IPANER
2. SIALBE AAPSCL
3. DR AMREHN TOHLLHERI
4. DRAWOH H. NIAKE
5. NHOJ YUAMCHL

**B. Picture History**

Look at the given timeline. It shows the evolution of computers from the year 1960 to 2015. Find more about the evolution of computers and discuss it in class.

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**MORE ON WINDOWS 10**

**INTRODUCTION**

MS Windows is an operating system. It also manages the resources of the computer system and does many other things.

**LIVE TILES**

Live tiles are the animated icons of applications installed on your computer. These tiles display latest updates and information such as news, weather report and incoming mails without opening the app.

**Pinning an App to the Start Menu**

This helps the user quickly open frequently used programs. The application icon is displayed as a live tile.

**Resizing Tiles**

You can resize the tiles according to your needs. **To resize the live tiles**, follow the given steps.

**Moving And Grouping**

You can move a tile in the Start menu just by dragging. **To group the tiles**, follow the given steps:  
**Step 1:** Drag the tile to the bottom of the Start menu. A blank horizontal bar appears with the **name group** as heading.  
**Step 2:** Click the name group and add a name. You can now add the relevant tiles to this group.  
To **move** a group of tiles, drag the two small lines to the position you prefer.

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**Turn OFF Live Tiles**

To turn OFF the tiles, follow the given steps:

1. Right-click here
2. Click More
3. Click Turn Live Tile off

**UNIVERSAL APPS OF WINDOWS 10**

Universal apps are the applications that are accessible from any platform like smartphones, laptops or desktop computers.

Photos | Weather | Mail

*(Experiential Learning)*

**Practice Time**

Visit the computer lab and check weather of your city. List weather for upcoming week using universal app.

**CUSTOMISING THE DESKTOP**

Customising means modifying. You can personalise the Windows desktop according to your requirement. **To change the colour scheme of your desktop**, follow the given steps:

1. Right-click
2. Click Personalize
3. Click Colors
4. Choose colour
5. Check these boxes
6. Turn it ON

*(Experiential Learning)*

Practice Time: Visit the computer lab and customise your desktop according to your choice.