**Bahria University Karachi Campus**



**Department of Software Engineering**

**ASSIGNMENT # 01 – Fall 2020**

Course Title: **Computing Fundamentals** Course Code: **CSC-110**

Class: **BSE – 1(B)** Shift: **Morning**

Course Instructor: **Dr. Salahuddin** Max. Marks: **5.0**

Date: **12th Oct 2020** Due Date: **25th Oct 2020**

**Note:** (i) Please submit your assignment via BU-LMS in MS-Word document only.

(ii) Submit assignment before due date. After due date, LMS system will not accept your submission.

**[CLO 1]**

**Q1. Define Computer Generation. Make a table to show the different generations of computer, their time-periods, and technologies that they used.**

**ANS: GENERATIONS OF COMPUTER** Each generation of computer is characterized by a major technological development that fundamentally changed the way computers operate, resulting in increasingly smaller, cheaper, more powerful and move efficient and reliable devices.

|  |  |  |
| --- | --- | --- |
| **GENERATIONS** | **TIME** **PERIODS** | **TECHNOLOGIES** |
| First Generation | (1940-1956) | Vacuum tubes for circuitry and magnetic drums for memory. Input was based on punched cards and paper tape, and output was printed on paper. |
| Second Generation | (1956-1963) | Transistors replaced vacuum tubes. The transistors were far superior to the vacuum tube, allowing computers to become smaller, faster, cheaper, more energy efficient. |
| Third Generation | (1964-1971) | Development of integrated circuits (IC) was the hallmark of the third-generation pf computers. Keyboard and monitors allowed the device to run many different applications at one time with a central program. |
| Fourth Generation | (1971-1980) | The microprocessors brought the fourth generation of computers. The intel 4004 chip, developed in 1971, located all the components of the computer from the central processing unit and memory to input/output controls on a single chip |
| Fifth Generation | (1980-Till Date) | Fifth generation computing devices based on artificial intelligence are still development, through there are some applications, such as voice recognition, that are being used today. |

**Q2. What are input and output devices? Which I/O devices are more popular in today’s generation computer in your opinion?  
  
  
Ans: INPUT DEVICES:** The function of input devices is to pass information in to the memory unit of the CPU and convert the characters into binary patterns, which can be held inside the computer memory.  
  
  
**OUTPUT DEVICES**: The function of output devices is to convert data and information expressed in electronic impulses to human understandable forms such as printed report.  
  
  
**Most popular input and output devices now a days are listed below**:

|  |  |
| --- | --- |
| **INPUT DEVICES** | **OUTPUT DEVICES** |
| * Keyboard | * Monitor |
| * Mouse | * Printer |
| * Light pen | * Headphones |
| * Scanner | * Speaker |
| * Microphone | * Projector |
| * Track Ball | * GPS |
| * Graphic Tablet | * Sound Card |
| * Bar code Reader | * Video Card |
| * Optical Mark Reader | * Speech Generating Device |

**Q3. Define Volatile and Non-volatile memory. Which one is more widely used in your opinion?**  
  
**ANS**: **VOLATILE MEMORY:** Volatile memory is the type of memory in which data is lost when the system is powered-off. Contents of Volatile memory is stored temporarily, and it is faster than non-volatile memory. Volatile memory generally has less storage capacity.  
  
**NON-VOLATILE MEMORY:** Non-volatile memory is the type of memory in which data remains stored even the system is powered-off. Contents of Non-volatile memory is stored permanently, and it is slower than volatile memory. Non-volatile memory generally has more storage capacity than volatile memory.

**More widely used memory:**According to my opinion now a days, non-volatile memory is widely used because when the computer is shut down accidentally or electricity interrupted but your data is never lost.

**Q4. What is a System board? Explain its different components  
  
  
ANS: SYSTEM BOARD**: The system board is also known as motherboard it is the main board which connects different parts of computers. It includes the general components, Microprocessor (CPU), Slots, Plots, Buses, RAM, ROM, and other electronic components for example resistors, capacitors, diodes, transistors, jumpers etc. **COMPONENTS OF SYSTEM BOARD:**

**Ports:** It acts as an interface or a point of attachment between computer and external devices.

**ISA SLOTS:** The Instruction Set Architecture (ISA) is the part of the processor that is visible to the programmer or compiler writer. The ISA serves as the boundary between software and hardware.

**AGP SLOTS:** AGP cards can access the system memory to help with complex operations such as texture mapping.

**PCI SLOTS**: PCI cards can only access the memory available on the actual card. The PCI slots are slightly longer and are colored white.

**POWER CONNECTOR**:Power connectors are devices that allows an electrical current to pass through it for the exclusive purpose of providing power to a device (not a data stream, for example, or anything more complex).

**BATTERY**: A device containing an electric cell or a series of electric cells storing chemical energy that can be converted into electrical power, usually in the form of direct current.

**CHIPSET NORTHBRDIGE:** The Northbridge is the controller that interconnects the CPU to memory via the frontside bus (FSB). It also connects peripherals via high-speed channels such as PCI Express.

**CHIPSET SOUTH BRIDGE:** The Southbridge controller handles the remaining I/O, including the PCI bus, parallel and Serial ATA drives (IDE), USB, FireWire, serial and parallel ports and audio ports. Earlier chipsets supported the ISA bus in the Southbridge.

1. **Q5. Define following**:  
     
     
   **ANS: POINTING DEVICES:** Pointing device is an input interface that allows user to control and provide data to the computer using physical gestures by moving a hand-held mouse or similar devices. The use of pointing devices is to control the position of the cursor or pointer on the screen and allow the user to select options displayed on the screen. Commonly pointing devices are mouse, and it is including the pointing stick, touch pad, digitizer, and others.  
     
   **SCANNNIG DEVICES:** A scanner is an input device that scans documents such as photographs and pages of text. This creates an electronic version of the document that can be viewed and edited on a computer.  
      
   **CAPTURE DEVICES:** Capture Device is a device used to capture digital images. Scanners are an example for capture devices. Artist can get the digital image of their pictures, painting, drawings, or any other artwork using a capture device. There is different type of capture devices that an artist can choose based on his requirement. Capture devices relate to computers to get the digital image, and once a digital image is produced, the image can be modified to include graphic design or effects.    
     
   **STORAGE DEVICES:** A storage device is one of the basic elements of any computer device.  It almost saves all data and applications in a computer except for hardware firmware.  It comes in different shapes and sizes depending on the needs and functionalities.