



# Sri GVG Visalakshi College for Women

(Autonomous)



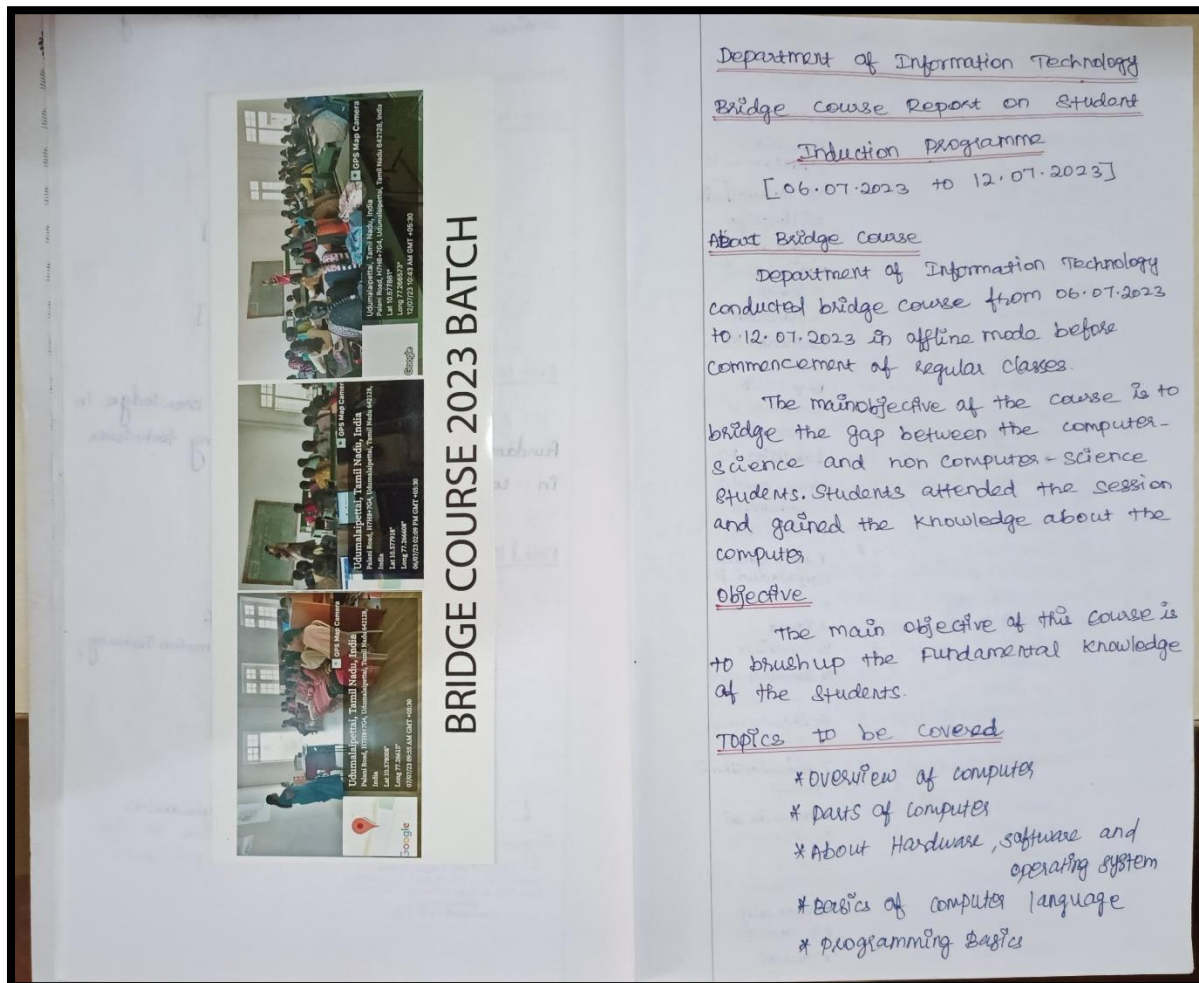
Re Accredited at A+ (Fourth Cycle)  
Affiliated to Bharathiar University, An ISO 9001-2015 Certified Institution  
Tirupur (DT), Tamil Nadu

Department of Information Technology  
Academic Year 2022-2023

Organizes

Bridge Course On

“Basics of Computer”



Non-IT Students Name List

Students Name	10/10	09/10	10/10	09/10	Signature
1. Astha Parveen H	/	/	/	/	H. Astha Parveen
2. Bhuvana V	/	/	/	/	Bhuvana V
3. Dharsini K	/	/	/	/	Dharsini K
4. Hafsa Sheeba	a	a	/	/	M. Hafsa Sheeba
5. Haripriya M	/	/	/	/	M. Haripriya
6. Indhu M	/	/	/	/	Indhu M
7. Kalavani N.M	/	/	/	/	N.M. Kalavani
8. Kanitha P	/	/	/	/	P. Kanitha
9. Karagam R	/	/	/	/	R. Karagam
10. Karthika M	/	/	/	/	Karthika M
11. Kavya N.C	/	/	/	/	N. Kavya
12. Kavyasri K	/	/	a	/	Kavya Sri B
13. Kirthika V	/	/	/	/	Kirthika V
14. Kumathal K	/	/	/	/	Kumathal K
15. Lakshitha M	/	/	/	/	Lakshitha M
16. Lavanya Gowri K	/	/	a	/	Lavanya Gowri K
17. Madhumitha C	/	/	/	/	C. Madhumitha
18. Mahalakshmi P	/	/	a	/	P. Mahalakshmi
19. Mahalakshmi P	/	/	/	/	P. Mahalakshmi
20. Marjuladevi P	/	/	/	/	Marjuladevi P
21. Meenakshi V	/	/	/	/	Meenakshi V
22. Ranya A	/	/	/	/	A. Ranya
23. Sandhya B	/	/	a	/	B. Sandhya
24. Saravanapriya N	/	/	/	/	N. Saravanapriya
25. Sathya Shree S	/	/	/	/	S. Sathya Sri
26. Shree Varshini M	/	/	/	/	M. Shree Varshini
27. Siva Sankari M	/	/	/	/	M. Siva Sankari
28. Svalakshmi T	/	/	/	/	T. Svalakshmi
29. Sriyani R	/	a	/	/	R. Sriyani
30. Sowbanika Sel R	/	/	/	/	R. Sowbanika
31. Sripragathi S	/	/	/	/	S. Sripragathi
32. Swetha G	a	a	/	/	G. Swetha
33. Varshini A	/	/	/	/	A. Varshini
34. Veeraselvi D	/	/	/	/	D. Veeraselvi
35. Venmugil K	/	/	/	/	K. Venmugil
36. Yuvasri K	/	/	/	/	K. Yuvasri

Methodology

Power point presentation, chalk and talk methods have been adopted for the theory subjects.

Hands on training and interactive sessions were conducted in the computer laboratory session.

Schedule

Date & Day
06.07.2023 [Thursday]
07.07.2023 [Friday]
10.07.2023 [Monday]
11.07.2023 [Tuesday]
12.07.2023 [Wednesday]

Outcome!

Students gained the knowledge in fundamentals and problem solving techniques in computer programming.

Handling Staff:

M. Malini Assistant Professor  
 S. Sophiya Assistant Professor  
 S. Saranya Assistant Professor  
 Department of Information Technology

Signature of the HOD Signature of the Principal

## Overview of Computer

### 1) What is a computer?

- A computer is a device capable of performing computations and making logical decisions at a speed of millions, and even billions of times faster than human beings.
- Computers process data under the control of sets of instructions called computer programs.
- The various devices (such as keyboard, screen, disks, memory, and processing units) that comprise a computer systems are referred to as hardware.
- The computer programs that run on a computer are called software.

### 2) Components of a computer:

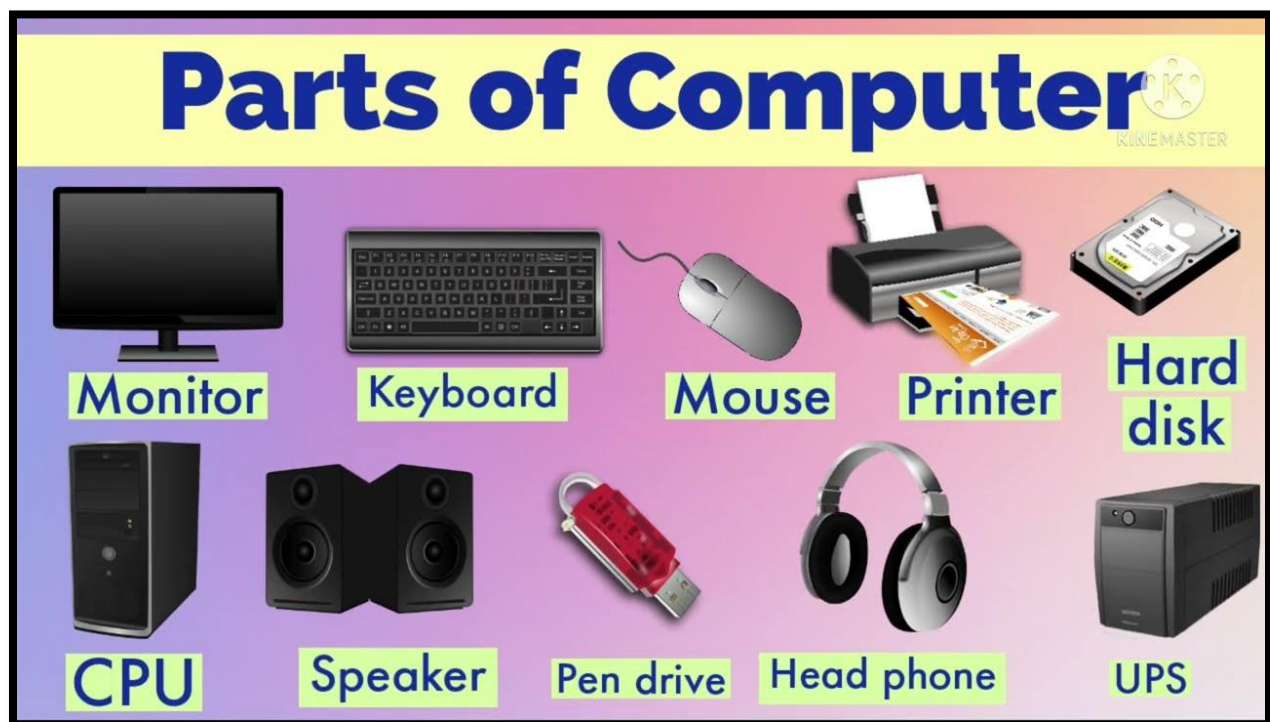
- i. Input unit: This is the "receiving" section of the computer (mostly keyboard).
  - ii. Output unit: This is the "shipping" section of the computer (CRT screen).
  - iii. Memory unit: This is the rapid access, relatively low-capacity "warehouse" section of the computer. It is often called main/primary memory. (board)
  - iv. Arithmetic and logic unit (ALU): This is the "manufacturing" section of the computer. It is responsible for all the calculations and decision-mechanisms.
  - v. Control unit (CU): This is the "administrative" section of the computer. It is the computer's coordinator and is responsible for supervising the operation of the other sections.  
Central Processing unit (CPU) = ALU + CU
  - vi. Secondary storage unit: This is the long-term, high-capacity "warehouse" section of the computer. Programs or data that are not currently active are placed here (disks). Human analogy: (hearing=input, telling=output, thinking=cpu, keeping-in-mind=main memory, permanent storage (file/cabinet)=secondary storage) Hard to match with humans though. In the pursuit of matching human brain, computers are having more than one processor. personal computers typically have one processor university computer, Strauss has 16 CPU's, 32GB memory. Input=keyboards, outputs=CRT screens, printers
- 2) Can a computer think? Computers can think what they are programmed to think. They are not "intelligent enough" (if interested, there are courses on AI, Robotics, Computer Vision, etc.)

### 3. How does a computer work?

Someone has to tell it what to do (program) + what to do it on (data). Simplified view of the operation of a computer:

1. A programmer (you) writes a program + creates data.
2. Program + data is typed, and will get stored on disk.
3. Programmer commands the computer to "execute" on the specified data. CU copies program+data into memory, keeps track of current instruction to perform (sets PC to point to 1st instruction in program) (note: CU=control unit, pc=program counter ) -Fetch instr. at PC from memory + store at small location in CPU. -Decode instr. -Fetch data/operands -Execute instructions (by ALU) (note: ALU=Arithmetic and Logic Unit) -Store result to memory - Increment PC to next instr. -repeat above steps until PC runs out of program.

### Parts of Computer



## About Hardware, Software and Operating System

**Hardware** – any physical device or equipment used in or with a computer system (anything you can see and touch).

### External hardware

- **External Hardware Devices (Peripherals)** – any hardware device that is located outside the computer.
- **Input Device** – a piece of hardware device which is used to enter information to a computer for processing.
- Examples: keyboard, mouse, trackpad (or touchpad), touchscreen, joystick, microphone, light pen, webcam, speech input, etc.



- **Output Device** – a piece of hardware device that receives information from a computer.
- Examples: monitor, printer, scanner, speaker, display screen (tablet, smartphone ...), projector, head phone, etc.



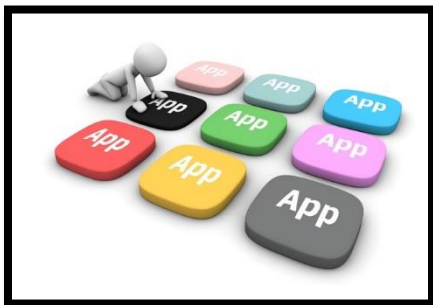
### Internal hardware

- Internal Hardware Devices** – any piece of hardware device that is located inside the computer.
- Examples: CPU, hard disk drive, ROM, RAM, etc.

### Computer software

- Software – a set of instructions or programs that tells a computer what to do or how to perform a specific task (computer software runs on hardware).
- Main types of software – systems software and application software.

### Application software

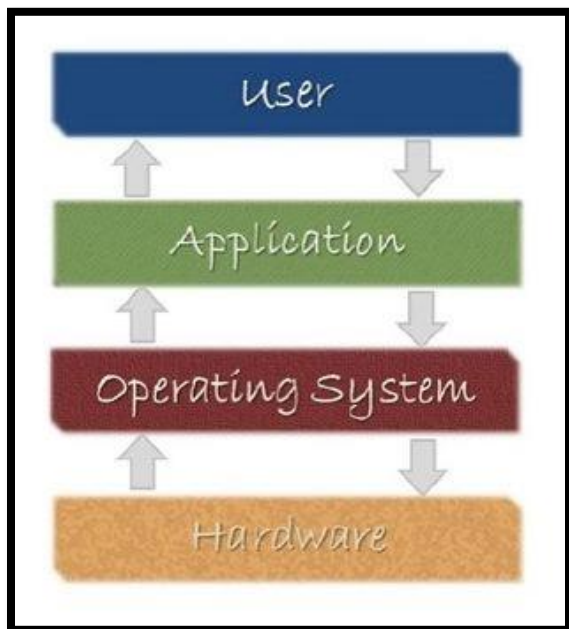


- Application Software** – a computer program that provides users with tools to accomplish a specific task.

- Examples of application software: word processing, spreadsheets, presentation, database management, Internet browsers, email programs, media players, accounting, pronunciation, translation, desktop publishing, enterprise, etc.

## System Software

**System Software** - it is designed to run a computer's hardware and application software, and make the computer system available for use. It serves as the interface between hardware, application software, and the user.



- Main functions of system software – allocating system resources, managing storage space, storing and retrieval of files, providing security, etc.
- Main types of systems software – operating system, device driver, utility software, programming software, etc.

**Operating System** - a software that controls and coordinates the computer hardware devices and runs other software and applications on a computer. It is the main part of system software and a computer will not function without it.

- Main functions of an operating system – booting the computer, managing system resources (CPU, memory, storage devices, printer, etc.), managing files, handling input and output, executing and providing services for application software, etc.
- Examples of operating system: Microsoft Windows, Apple iOS, Android OS, macOS, Linux, etc.

**Device Driver** – a software program that is designed to control a particular hardware device that is attached to a computer.

- The main purpose of device driver – it acts as a translator between the hardware device and operating systems or applications that use it.
- It instructs computer on how to communicate with the device by translating the operating system's instructions into a language that a device can understand in order to perform the necessary task.
- Examples of device driver: printer driver, display driver, USB driver, sound card driver, motherboard driver, ROM driver, etc.

**Utility System** – a type of system software that helps set up, analyze, configure, strengthen, maintain a computer and performs a very specific task (e.g. antivirus software, backup software, memory tester, screen saver, etc.).

## Basics of Computer Language

Developers should have essential knowledge on the following concepts to become skilled in Computer Programming,

**#1) Algorithm:** It is a set of steps or instruction statements to be followed to accomplish specific tasks. A developer can design his algorithm to achieve the desired output. **For Example**, a recipe to cook a dessert. The algorithm describes the steps to be followed for completing a specific task, but it does not say how to achieve any of the steps.

**#2) Source code:** Source code is the actual text that is used to construct the program using the language of choice.

**For Example**, it is mandatory to have the main method in Java and the text used is as shown below.

```
public static void main(String arg[]) {  
//Steps to be performed  
}
```

**#3) Compiler:** Compiler is a software program that helps in converting the source code into binary code or byte code, also called machine language, that is easy for a computer to understand, and can be further executed using an interpreter to run the program.

**#4) Data Type:** Data used in the applications can be of a different type, it can be a whole number (integer), floating-point (decimal point numbers), characters or objects. **For Example**, double currency = 45.86, where double is a data type used for storing numbers with decimal points.

**#5) Variable:** Variable is a space holder for the value stored in the memory and this value can be used in the application. **For Example**, int age = 25, where age is a variable.



**#6) Conditionals:** Knowledge of how to use a certain condition, such that a set of code should execute only if a certain condition is true. In case of a false condition, the program should exit and should not continue the code further.

**#7) Array:** Array is the variable that stores elements of a similar data type. Knowledge of using an array in coding/programming will be a great benefit.

**#8) Loop:** Loop is used to execute the series of code until the condition is true. **For Example,** in Java, loops can be used as for loop, do-while, while loop or enhanced for loop.

**The code for loop is as shown below:**

```
for (int I =0; i&&&lt;10; i++) {System.out.println(i); }
```

**#9) Function:** Functions or methods are used to accomplish a task in programming, a function can take parameters and process them to get the desired output. Functions are used to reuse them whenever required at any place repeatedly.

**#10) Class:** Class is like a template that contains state and behavior, which corresponding to programming is field and method. In Object-Oriented languages like Java, everything revolves around Class and Object.

## **Programming Basics**

Programming Language you choose to learn, the basic concepts of programming are similar across languages. Some of these concepts include:

- Variable Declaration
- Basic Syntax
- Data Type and Structures
- Flow Control Structures (Conditionals and loops)
- Functional Programming
- Object-Oriented Programming
- Debugging
- IDEs and Coding Environments