**Intro to Programming using C**

**Computer:-** Software , Hardware

**Algorithm:-** writings before coding

**Mother Board :-**

**ROM-** read only memory-Booting information

**RAM-** random access memory- your storage

**CPU-** where all the processing works

**Primary Memory:-** Nonvolatile- can’t erase after power off

**Random access memory(RAM)-** volatile- gets deleted after the power off

**CPU-** performs the actual computations.

**Memory Speeds:-**

**Registers(16)-** 10 nanoseconds

**RAM-** 60 nanoseconds

**Hard drive-** 12 million nanoseconds

Software🡪Opearting system🡪Ram🡪Program DATA🡪Input🡪program🡪 output

**Two types of information:-** Program instructions , Data both stored in RAM.

**Everything is stored in Bits.**

**Half Byte is a Nibble(4 Bits).**

**First large unit- Byte- 8 Bits**

**Byte stores 256 possible values.**

**Storage units-**

**Words-** fundamental transfer size

16 Bit- 2 Bytes

32 Bits- 4 Bytes

64 Bits- 8 Bytes

**Hexadecimal:- 16x**

Denoted as 0x

Always written in base 16 (4 Bits).

0,1,2,3,4,5,6,7,8,9,A,B,C,D,E,F

**Cat**- print file in this directory( Linux Command )

**Compilers-** Translate the C language to machine language

Human Language**🡪**Programming Language**🡪**Machine Language(Binary 0,1)

**Language Generations:-**

1. Machine Language-0,1
2. Assembly Language
3. Third Generation- C, C#, most programming languages
4. Fourth Generation- SQL
5. Fifth Generation- AI , Neural networks( Self driving cars )

**Features of C:-**

1. English like syntax
2. Small number of keywords
3. Lowest of high-level languages
4. Faster than most languages
5. UNIX, Linux and windows are written in C and C++

**Compilers-**

1. Source Code
2. Compiler
3. Binary Code
4. Input Code
5. Binary Code
6. Output Code

**C Syntax:-**

1. Comment-/\*,\*/ -- ignored by the compiler
2. Main- where the computer starts executing the code
3. Return 0 means successful
4. ; means line end of the line
5. \n for start from next line

**Computer uses BODMAS rule**

**Always put**

**#define \_CRT\_SECURE\_NO\_WARNINGS at the start of the program.**