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**Q.1 (a):** Design an algorithm and draw a flowchart that will read the two sides of a rectangle and calculate its area.

Ans :

Write an algorithm and draw a flowchart that will read the two sides of a rectangle and calculate its area.

➢ Pseudo code;
  ✓ Input the width (W) and Length (L) of a rectangle,
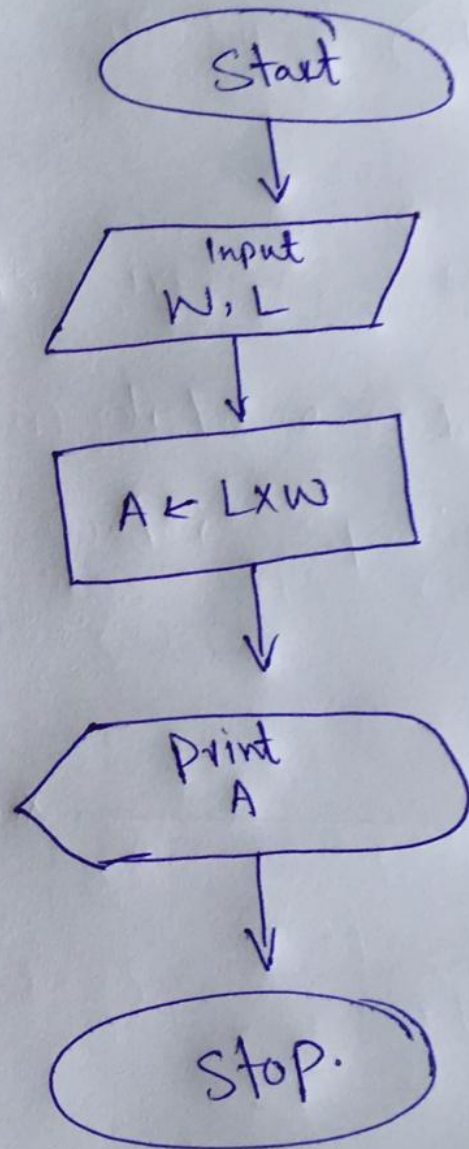  ✓ Calculate the area (A) by multiplying L with W,
  ✓ Print A.

# Algorithms & flow charts.

⇒ Algorithm;

Step 1: Input W, L,

Step 2:  A ← L × W,

Step 3:  Print A.

```
        ┌─────────────┐
        │    Start    │
        └──────┬──────┘
               ↓
        ╱──────────────╱
       ╱    Input     ╱
      ╱     W, L     ╱
     ╱──────────────╱
               ↓
        ┌─────────────┐
        │   A ← L×W   │
        └──────┬──────┘
               ↓
        ╱──────────────╲
       │    Print       │
       │      A         │
        ╲──────────────╱
               ↓
        ┌─────────────┐
        │    Stop.    │
        └─────────────┘
```

# Q1 (b)

## Name different types of errors which can occur during the execution of a program.

Ans

There are three general types of error

   1)Syntex error

      syntex (or "compile time" ) errors
      syntax error are "grammatical " error and are
      detected when you compile the program
      syntax error prevent your program from executing.

  1) Runtime error

      Runtime error occur when you tell the computer to
      do something illegal .
      Runtime error may halt execution of your program.

  2) Logic error

      Logic errors are not detected by the computer
      Logic errors cause your result to be wrong.

**Q.2 (a):** Why we use iostream.h and conio.h in C++ programming.

## iostream.h:

**This simply issues the command to include the iostream header, which is generally used for cin/cout.iostream stands for input/output stream, allowing you to access the output screen or allow user to provide input. iostream.h, it is header file with name iostream and .h indicates its type i.e header file**

This is the name of the library definition file for all Input Output Streams. Your program will almost certainly want to send stuff to the screen and read things from the keyboard.

iostream.h is the name of the file in which has code to do that work for you.

# conio.h

It again tells the compiler to include the header file conio(console input output).It allows you to acces the user screen, but its used by beginners for specific purposes(getch() to hold the output screen in Turboc++, and clrscr to clear the output screen).This is not a standard header, and is not present in all of the compilers.

conio.h  is a header file used mostly MS-DOS compiler to provide console input/output it is not part of the C standard library or ISO C , nor is it define by POSIX this header declear several usefull library function for performing console input and output from program .

**Q2(b): What do you understand by the term "Maintain and update the Program".**

Ans :

Maintain and update the program are the modification of a softwere product after delivery to correct faults, to improve performance or other attributes or to adapt the product to a modified environment .it deal with updating the softwere according to change in user requirements .

There fore , it is important to write a program that easy to read understand and maintain

Two types of maintain

   (a) Perfective maintance

   (b) Preventive maintance

**Q.3** Differentiate between the following**;**

## Bug

A softwere Bug is an error ,flow or fault in a computer program or system that cause it to produce an incorrect or unintendend way

⇨ Bug can trigger error that may have ripplr effect .

## Debug

Debuging is a methodical process of finding and reducing the number od bugs or defeats in a computer program or a piece of electronic hardwere thus making it behave as expected

It is a nessessary process in almost any new softwere or hardwere development

# Syntex error & Logical error.

## Syntex error

syntex (or "compile time" ) errors syntax error are "grammatical " error and are detected when you compile the program
syntax error prevent your program from executing.

## Logical error

Logic errors are not detected by the computer
Logic errors cause your result to be wrong.

# Compiler  & Assembler

## Compiler

Generate the assembly language code or directly the execute code .

Preprocessed souce code

The compiler phase are lexical analyzer, syntex sematic analyzer,

The assembly code generate is mnemonic version of machine code

## Assembler.

Generate the relcutable machine code

Assembly language code

Assembler make two passes over the given input

The relocatable machine code generated by an assembler is represent by binary code .

## System Software

  Software which is used to perform the basic functionality of the computer or in other words bridge between user & hardware.

Also known as Operating System.

After assembling the hardware first of all we install system software on the PC to make it functional.

It is an necessary  part in the operating of the computer.

We cant make Personal Computer functional without the system software.

- ➢ Examples are;
    - ➢ Operating systems,
    - ➢ Utilities programs,
    - ➢ Communication software,
    - ➢ Assembler, interpreter etc.

## ➢ **Application Software**

Those software which used to perform the specific tasks of the computer are known as application software.

➢ This software perform only a single task.

➢ They comes in different categories;

✓ Anti Viruses,
- Norton Anti virus.

✓ Text Editing,
- Notepad, WordPad, MS Word.

✓ Presentation Making,
- MS PowerPoint.

✓ Calculation Software,
- MS Excel.

✓ Compress Software,
- WinZip, WinRAR.

**Low level language & High level language.**

**Low level languages;**

Computer language consisting of mnemonics that directly correspond to machine language instructions.

- ✓ Very close to machine language,
- ✓ Concentrate on machine architecture.
- ✓ Machine language,
- ✓ Assembly language

**High Level Languages;**

Basically symbolic languages that use English words and/or mathematical symbols rather than mnemonic codes.

- ➢
  - ✓ Machine-independent programming language,
  - ✓ Concentrate on the logic of problem.
  - ✓ C,
  - ✓ C++,
  - ✓ Java.

Differences in terms of;
- ✓ Understand,
- ✓ Ease of writing,
- ✓ Running speed,
- ✓ Writing format.