

May 15th 2024

CSC211: Pascal Programming

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Official Title: Structured Programming In Pascal

Pascal can be used to write programs for a wide range of fields making it a general purpose language.

Code written in form of strings of 1's and 0's are known as machine code.

Pascal is an example of a high level programming language.

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To execute the application programs written in Pascal we need to understand the:

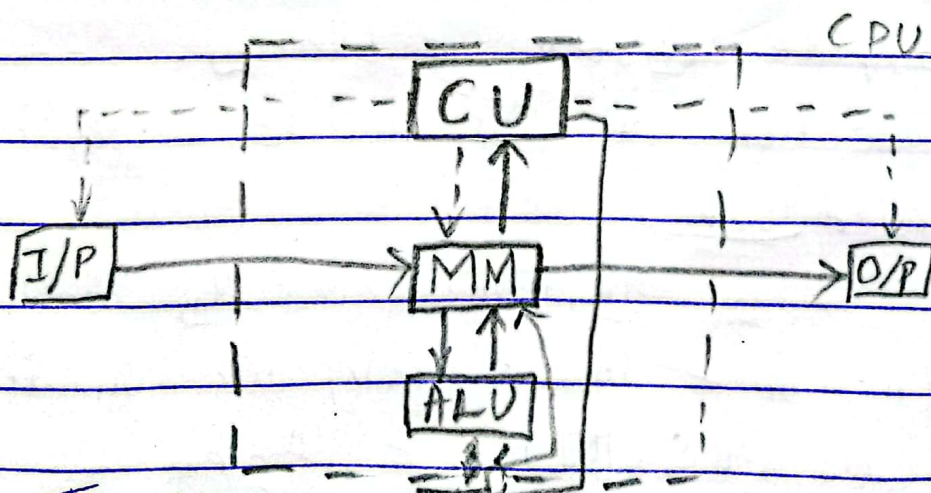
1. Physical (Hardware) Environment
2. Software Environment

for it to run smoothly.

The hardware are the visible parts of the computer that can be touched and held.

The software refers to the invisible parts of the computer (machine). Invisible meaning it cannot be touched or felt.

Computer Configuration refers to the arrangement of the computer hardware.



The Main Memory consist of RAM (Random Access Memory) and ROM (Read Only Memory).

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The ALU makes use of the RAM.

The RAM is volatile. It must have a supply of electric current to hold your data.

The semi-conductor material used for making the RAM only has magnetic properties when there is current.

Recall: Low Level Codes are in 0's and 1's.

0  $\Rightarrow$  Flowing Current  $\Rightarrow$  Magnetized

1  $\Rightarrow$  No Current  $\Rightarrow$  De Magnetized.

Each of the components in the computer memory can only hold a zero or a one. The combination of these components gives a character.

The basic component of representation in the computer system is binary.

A collection of 0's and 1's, with length 8 are called byte.

The coding system generally used for encoding data in a computer system is known as ASCII - American Standard Code for Information Interchange.

This coding system is based on 8-bits for

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a byte. A collection of bytes make up a word.  
Units of storage are usually measured starting from kb.

Auxiliary storage  $\rightarrow$  Backing storage.

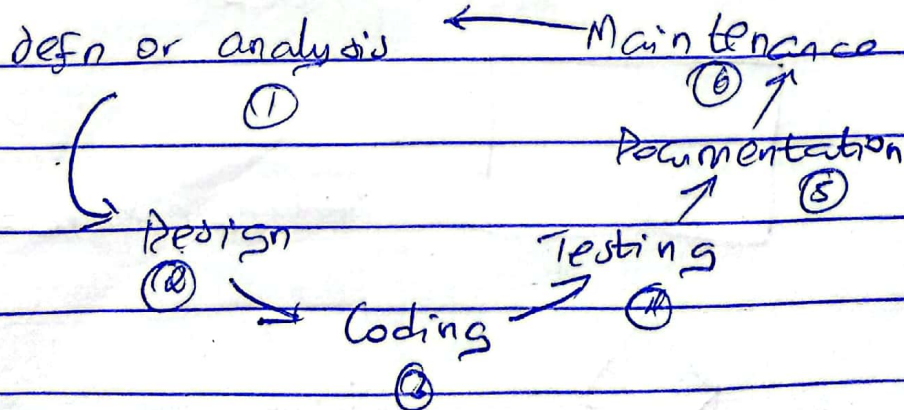
Control unit fetches and decodes instruction given to a computer.

Editor - Write Pascal Code

Compiler - Compile Pascal Code to Machine Code

Programming?: It is the process of taking the steps in a processor and putting them in the coded language of the computer.

Steps in writing a program:



Programming life cycle

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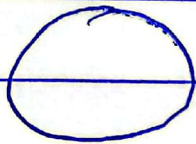
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## Design:

- (1) Architectural Design
- (2) Algorithm Design (flowchart or Pseudo code)
- (3) Data Design (Input/output)

Flow Chart: Pictorial / Diagrammatic Representation of the sequence of steps involved in solving a given problem.

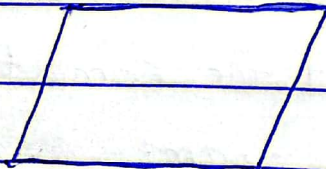
1.



Oval shape  $\rightarrow$  Terminal symbol.

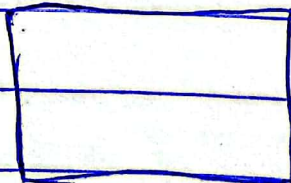
Words: stop, start, exit

2.



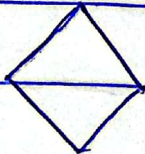
Parallelogram  $\rightarrow$  Input/Output  
shape symbol

3.



Rectangle shape  $\Rightarrow$  Process  
symbol

4.



Rhombus shape  $\Rightarrow$  Decision  
symbol.

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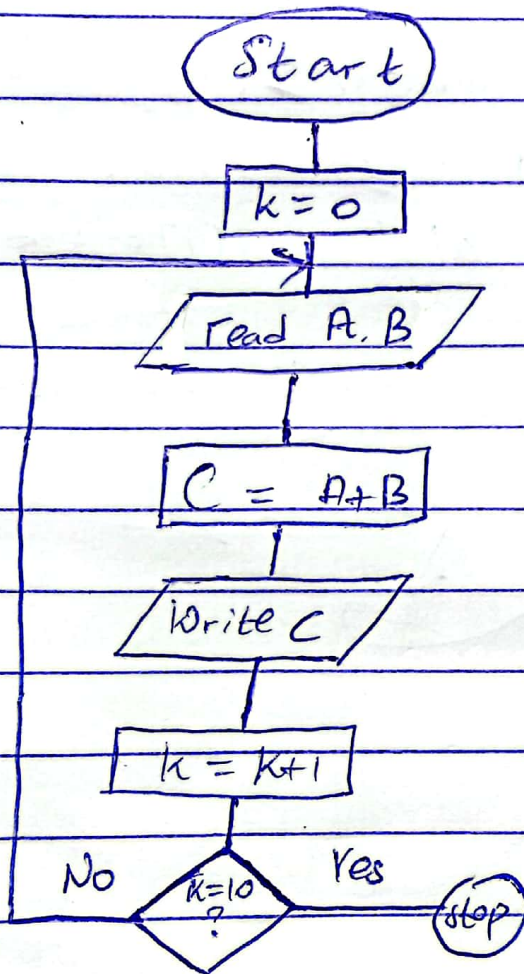
5.



Pre-defined symbol.

Illustration:

$$C = A + B$$



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