

Type of instructions

- consists Program to be implemented from a set of instructions to be stored in main memory by binary system ,instruction set of binary cells divided into a field or more, as is shown in the

Operation - code	Operands address
------------------	------------------

the operation code determined type operation to be implemented such as •
addition, subtraction, etc.

field Operands address consisting of several fields used to store Operands or •
address.

- each instruction store in the memory location under a specific address so as to save the address of instruction at is special Register in control unit called a **Program Counter(PC)** which refers to the address the next instruction, and after searching for the instruction and found, store at is special Register in the control unit Called the **Instruction Register(IR)**

Classification Instructions

- Instructions of four addresses:
- contains the instructions on the field operation code in addition to four fields representing four addresses. as is shown in the following figure 2.
- A4 A3 A2 A1 OPC
- - where A1, A2 Operands address 1 and 2.
 - A3 address result of the implementation process.
 - A4 address the next instruction
 - OPC code process.

- ***Instructions of the three addresses:***

If the instructions stored in memory in sequence there is no need for the field A4.

move to next instruction increase the program counter 1 ,represent three-address instruction as follows figure 3:



figure 3: Instructions of the three addresses

A2 and process procedure, the result stored on-location A1.

MUL A1, A2, A3

Instructions with a two address:

- These Instructions contain the fields OPC, A1, A2, fetch Operands from locations A1, A2 and implement, the result is stored, in A1.

ADD A1,A2

- A2 A1 OPC

Instructions with a one address:

- Contains Instructions on the operation code in addition to the one operand Address. It used the accumulator for all data manipulation.
ADD A1
- A1 OPC

