

Tutorial (11)

2023 / 07 / 19.

① What is meant by addressing mode?

It is the way in which the operand of an instruction is specified is called the Addressing Mode.

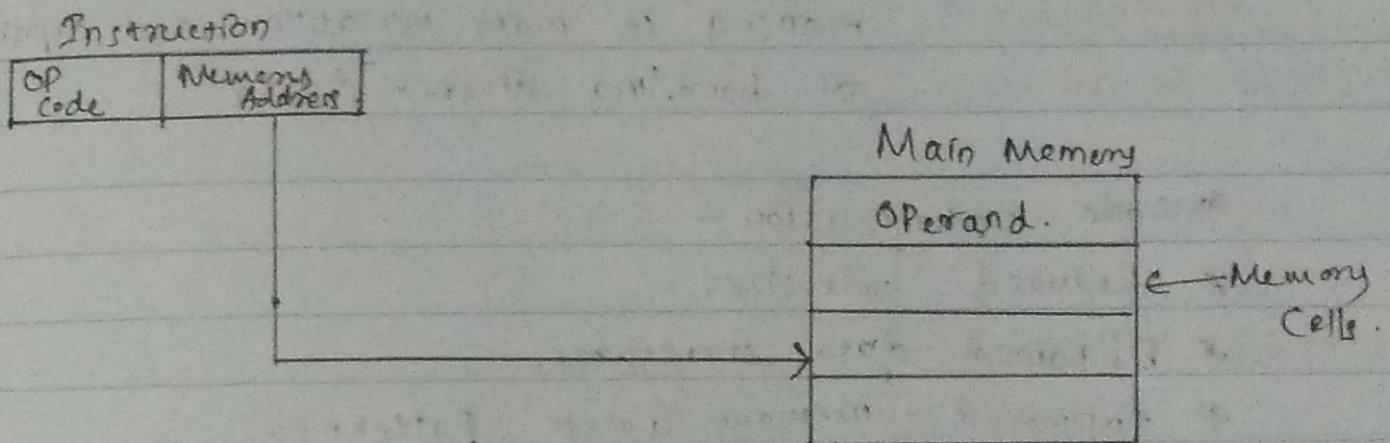
The addressing mode specifies a rule for interpreting or modifying the address field of the instruction before the operand is actually executed.

② What are the two types of addressing?

Direct Addressing

Absolute Addressing.

③ Draw a sample diagram to show how direct addressing works.



④ What are the pros and cons of direct addressing?

Direct Addressing.	
Pros	Cons
1> Simplicity	1> Lack of flexibility
2> Efficiency	2> Limited Address space.
3> Reduced introduction overhead.	3> Difficulty in dynamic memory management.
4> Memory Access optimization.	4> Code reusability.

⑤ What are the advantages of having multiple addressing modes in a computer architecture?

* Versatility — The architecture can accommodate a wide range of programming needs making it more versatile and capable of handling diverse tasks.

* Code optimization

* Reduced code size.

* Enhanced data structures.

* Improved memory access patterns.

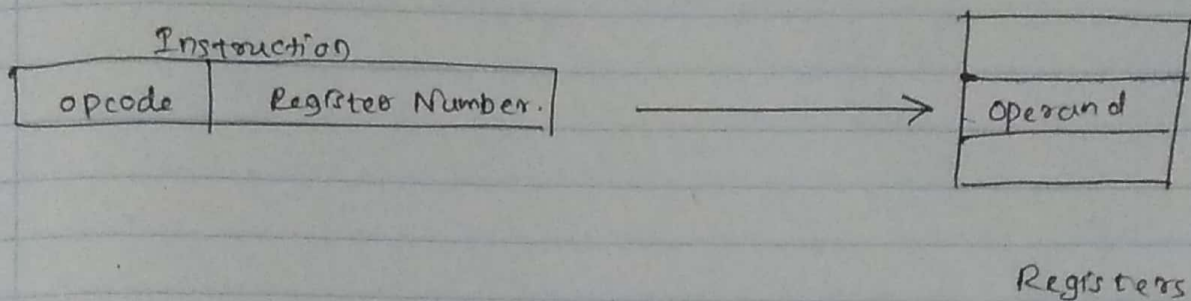
* Code portability.

* Dynamic memory management.

⑥ What are the characteristics of register addressing?

- * Register Utilization.
- * Fast Access
- * Limited Operand space.
- * Reduced memory traffic
- * Efficiency in loops.
- * Compiler optimization.

⑦ Draw a sample diagram to show how register addressing works.



Register Addressing mode.

⑧ Advantage and disadvantages of register addressing in computer architecture?

Advantages

- speed is higher
- Efficiency
- Reduced memory traffic.
- operand availability

Disadvantages.

- Limited no. of registers.
- Reduced flexibility.
- Not suitable for large data structures.
- Increased register pressure.