

Map

- It is a Data Structure that is used to store the elements in the key-value pair
- Keys cannot be duplicated however values can be duplicated.
- Implementation of Map interface are

1. HashMap

- There is no gurantee of order of elements.
- Order of elements is not guranteed

2. LinkedHashMap

- Insertion order is maintained in the LinkedHashMap

3. TreeMap

- Elements are ordered on the natural ordering of the keys.
- key cannot be null.

```
Set <String> s1;
s1.add("Anil");
s1.add("Mukesh");
s1.add(null);
s1.add(null);
```

Map<Key, Value> -> Set<Key, null>

Set<K> = keySet()

HashMap<Key, Value> -> Set<Key, null>

LinkedHashMap<Key, Value> -> Set<Key, null>

Collection<V> = values()

TreeMap<Key, Value> -> Set<Key, null>

Enum

-Enumerated types

- Why?

```
class ArithmeticOperations extends Enum{
    public static final ArithmeticOperations EXIT;
    public static final ArithmeticOperations ADD;
    public static final ArithmeticOperations SUB;
    public static final ArithmeticOperations MUL;
    public static final ArithmeticOperations DIV;
    private static final ArithmeticOperations [] ENUM$VALUES;

    static{
        EXIT = new ArithmeticOperations("EXIT",0);
        ADD = new ArithmeticOperations("ADD",1);
        SUB = new ArithmeticOperations("SUB",2);
        MUL = new ArithmeticOperations("MUL",3);
        DIV = new ArithmeticOperations("DIV",4);
        ENUM$VALUES = {EXIT,ADD,SUB,MUL,DIV};
    }

    private ArithmeticOperations(String name, int ordinal){
        super(name, ordinal);
    }

    public static ArithmeticOperations[] values(){
        return ENUM$VALUES;
    }

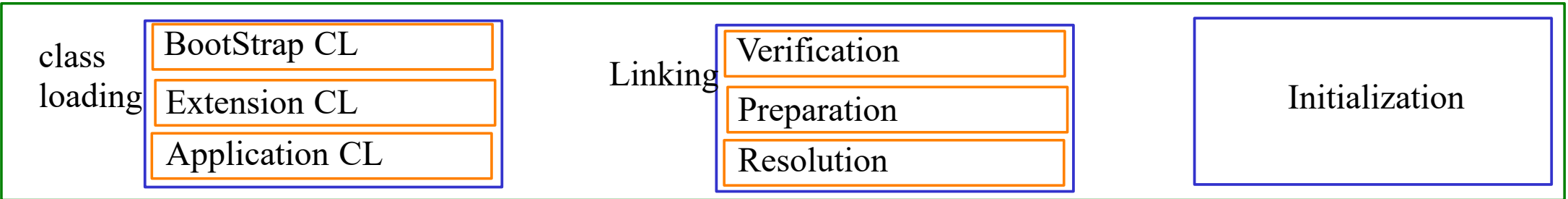
}
```

```
int choice = sc.nextInt();
ArithmeticOperations [] arr = ArithmeticOperations.values();
ArithmeticOperations a =arr[choice];
switch(a){
    case EXIT:
    case ADD;

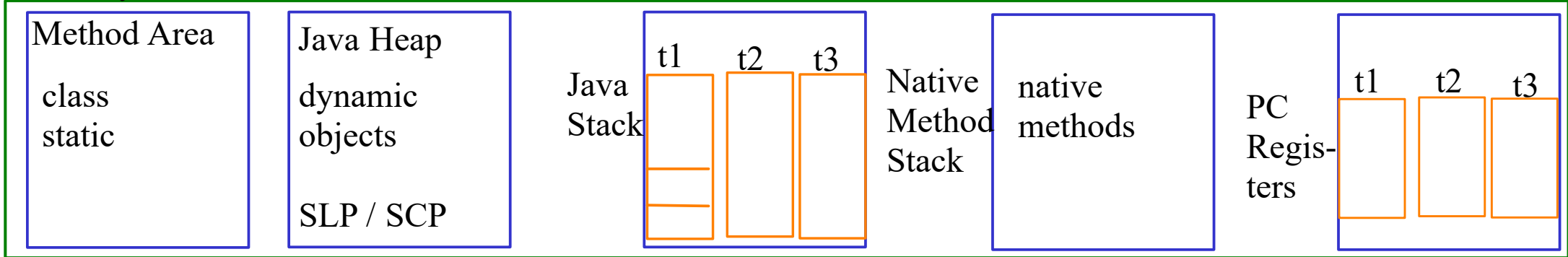
}
```

JVM

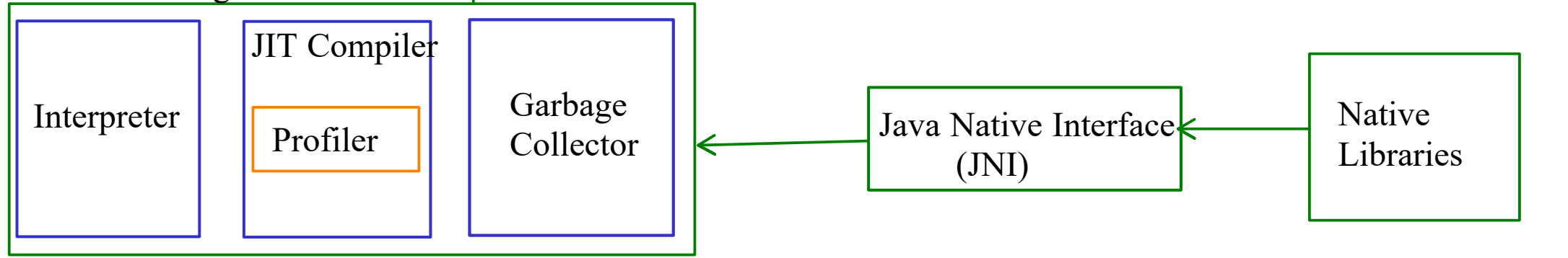
ClassLoader Subsystem



Memory Areas



Execution Engine



CPU Code

Dynamic Method Dispatch - Run time polymorphism

Interface ->
It provides set of protocols

