

JavaSummery

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Definitions:

- **OOP** is a programming technique that focuses on the data(=objects) and on the interfaces to that object.
- **Classes:** A class is the template or blueprint from which objects are made.
- **Encapsulation(sometimes called information hiding):** is simply combining data and behavior in one package hiding the implementation details from the users of the objects.
- **Instance variables:** are variables defined in a class, but outside the body of methods.
- **Constructor:** in is a special method that is used to initialize objects.
- **Public:** is keyword which declares a member's access as public.
- **Private:** is a Java keyword which declares a member's access as private.
- **Static:** object belongs specifically to the class, instead of instances of that class.

Three key characteristics of objects:

- **The object's behavior**
- **The object's state**
- **The object's identity**

Array:

```
int[] array= new int[20]; // allocating memory for array. it will be fixed sized
array[0]=5; //declaring first element array
```

```
//for loop - if nums is Array
for (int i = 0; i < nums.length i++){
    //nums[i];
}
```

```
//for each loop
for (int i: nums){
    //do stuff with i
}
```

ArrayList:

```
ArrayList<String>words=new ArrayList<String>();
```

```
ArrayList<Integer>num=new ArrayList<Integer>();
```

```
LinkedList<String> ll = new LinkedList<>();
```

```
num.add(1);

num.get(0); // we need put index

//remove element base on index
num.remove(1);

//for loop - if nums is ArrayList
for (int i = 0; i < nums.size(); i++){
    //nums.get(i);
}

//for each loop
for (int i: nums){
    //do stuff with i
}
```

HashMap:

```
Map<String,String>myMap=new HashMap<>();

// add key
myMap.put("Hadi", "21");

// get the value of the key
myMap.get("Hadi");

// remove the key
myMap.remove("Hadi");

// clear whole Map
myMap.clear();

// get the size
myMap.size();

// Different way of loop
for (String name: myMap.keySet()){
    System.out.println(name);
}

for (String age: myMap.values()){
    System.out.println(age);
}

for (Map.Entry<String,String>entry:myMap.entrySet()){
    String key=entry.getKey();
    String value=entry.getValue();
}
```