JavaSummery

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Diffinitions:

- **OOP** is a programing 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.

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);
```

```java
//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:

```java
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(age);
}

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();
}
```