1)Create a class named 'Programming'. While creating an object of the class, if nothing is passed to it, then the message "I love programming languages" should be printed. If some String is passed to it, then in place of "programming languages" the name of that String variable should be printed. For example, while creating object if we pass "Java", then "I love Java" should be printed.

Create a class named 'Programming'. While creating an object of the class, if nothing is passed to it, then the message "I love programming languages" should be printed.

```
1  package com.pack1;
2
3  public class Programming
4  {
5      Programming()
6      {
7          System.out.println("I love programming lan
8      }
9      public static void main(String[] args)
10     {
11         new Programming();
12     }
13 }
14
15
```

```
I love programming languages
```

```java
package com.pack1;

public class Programming
{
    Programming()
    {
        System.out.println("I love programming languages");
    }
    Programming(String word)
    {
        System.out.println("I love "+word);
    }
    public static void main(String[] args)
    {
        new Programming("India");
    }
}
```

```
<terminated> Programming [.
I love India
```

2)Write a program to print the name of a student by creating a student class. If no name is passed while creating an object of Student class, then the name should be "Unknown", otherwise the name should be equal to the String value passed while creating object of Student class.

```java
package com.pack1;

public class Student
{
    Student()
    {
        System.out.println("Unknown");
    }
    Student(String s)
    {
        System.out.println("the name of the student is:"+s);
    }
    public static void main(String[] args)
    {
        new Student("Raki");
    }

}
```

```
<terminated> Student [Java Application] C:\Users\ADMIN\D
the name of the student is:Raki
```

3) Suppose you have a Bank Account with an initial amount of 500 and you have to add some more amount to it. Create a class 'Add Amount' with a data member named 'amount' with an initial value of 500. Now make two constructors of this class as follows:

1 - without any parameter - no amount will be added then just display your balance without updating.

2 - having a parameter which is the amount that will be added to the account & display the final amount.

```java
package com.pack1;

public class AddAmount
{
    int amount=500;

    AddAmount()
    {
        System.out.println("Balance is : "+amount);
    }
    AddAmount(int deposit)
    {
        System.out.println("Updated Balance is : "+(amount+deposit));
    }
    public static void main(String[] args)
    {
        //new AddAmount();
        new AddAmount(400);
    }
}
```

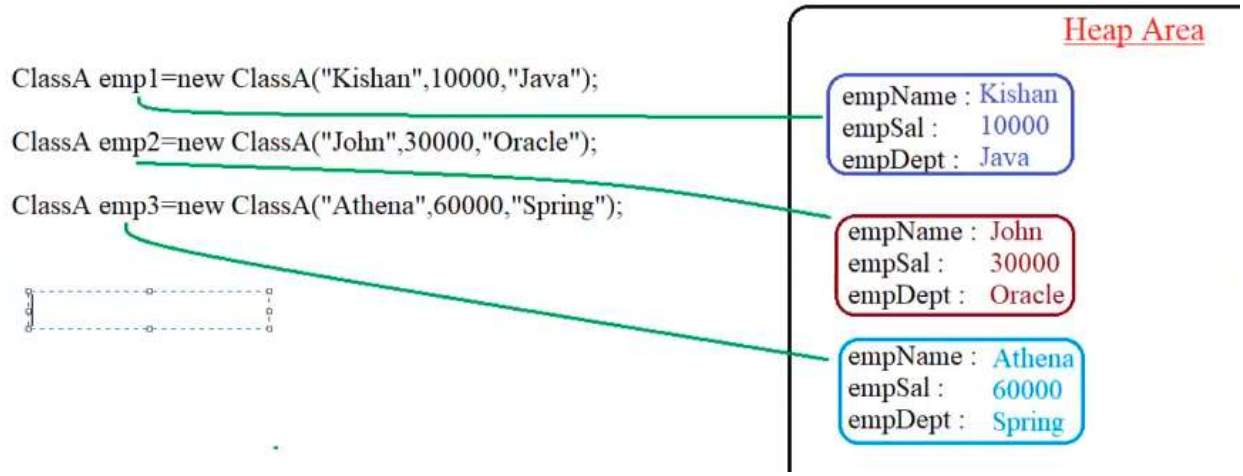
```
<terminated> AddAmount [Java Application] C:\Progra
Updated Balance is : 900
```

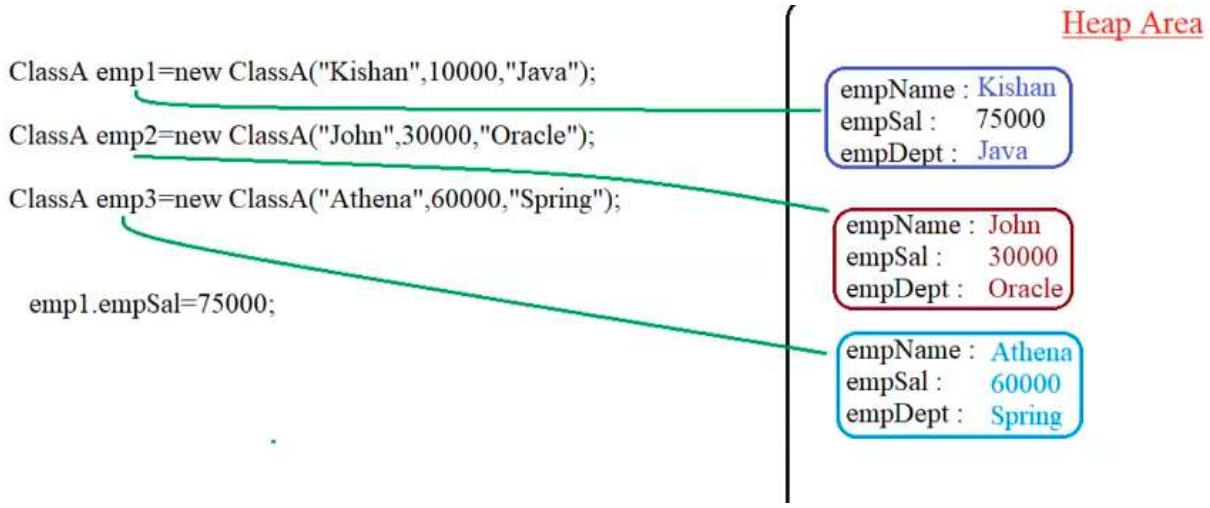
Instance variable

For every instance a separate copy of Instance variable will be created. (means how many object we are creating, those many copies of instance variable will be created).

```
2
3  public class ClassA
4  {
5      String empName;
6      int empSal;
7      String empDept;
8
9      ClassA(String name,int sal,String dept)
10     {
11         empName=name;
12         empSal=sal;
13         empDept=dept;
14     }
15     public static void main(String[] args)
16     {
17         ClassA emp1=new ClassA("Kishan",10000,"Java");
18         ClassA emp2=new ClassA("John",30000,"Oracle");
19         ClassA emp3=new ClassA("Athena",60000,"Spring");
20
21         System.out.println("emp1 data : "+emp1.empName+" "+emp1.empSal+" "+emp1.empDept);
22         System.out.println("emp2 data : "+emp2.empName+" "+emp2.empSal+" "+emp2.empDept);
23         System.out.println("emp3 data : "+emp3.empName+" "+emp3.empSal+" "+emp3.empDept);
24     }
25 }
```

```
<terminated> ClassA [Java Application] C:\Program Files\Ja
emp1 data : Kishan 10000 Java
emp2 data : John 30000 Oracle
emp3 data : Athena 60000 Spring
```






```
8
9       ClassA(String name,int sal,String dept)
10      {
11          empName=name;
12          empSal=sal;
13          empDept=dept;
14      }
15      public static void main(String[] args)
16      {
17          ClassA emp1=new ClassA("Kishan",10000,"Java");
18          ClassA emp2=new ClassA("John",30000,"Oracle");
19          ClassA emp3=new ClassA("Athena",60000,"Spring");
20
21          System.out.println("emp1 data : "+emp1.empName+" "+emp1.empSal+" "+emp1.empDept);
22          System.out.println("emp2 data : "+emp2.empName+" "+emp2.empSal+" "+emp2.empDept);
23          System.out.println("emp3 data : "+emp3.empName+" "+emp3.empSal+" "+emp3.empDept);
24
25          emp1.empSal=75000;
26
27          System.out.println("\nemp1 data : "+emp1.empName+" "+emp1.empSal+" "+emp1.empDept);
28          System.out.println("emp2 data : "+emp2.empName+" "+emp2.empSal+" "+emp2.empDept);
29          System.out.println("emp3 data : "+emp3.empName+" "+emp3.empSal+" "+emp3.empDept);
30      }
31  }
```

```
    ClassA(String name,int sal,String dept)
    {
        empName=name;
        empSal=sal;
        empDept=dept;
    }
    public static void main(String[] args)
    {
        ClassA emp1=new ClassA("Kishan",10000,"Java");
        ClassA emp2=new ClassA("John",30000,"Oracle");
        ClassA emp3=new ClassA("Athena",60000,"Spring");

        System.out.println("emp1 data : "+emp1.empName+" "+emp1.empSal+" "+emp1
        System.out.println("emp2 data : "+emp2.empName+" "+emp2.empSal+" "+emp2
        System.out.println("emp3 data : "+emp3.empName+" "+emp3.empSal+" "+emp3

        emp1.empSal=75000;

        System.out.println("\nemp1 data : "+emp1.empName+" "+emp1.empSal+" "+em
        System.out.println("emp2 data : "+emp2.empName+" "+emp2.empSal+" "+emp2
        System.out.println("emp3 data : "+emp3.empName+" "+emp3.empSal+" "+emp3
    }
}
```

```
emp1 data : Kishan 10000 Java
emp2 data : John 30000 Oracle
emp3 data : Athena 60000 Spring

emp1 data : Kishan 75000 Java
emp2 data : John 30000 Oracle
emp3 data : Athena 60000 Spring
```

From this all program below, to check the full program of below go down

```
package com.pack1 ;

public class ClassA
{
    String empName;
    int empSal;
    String empDept;

    String empCompany;

    ClassA(String name,int sal,String dept, String company)
    {
        empName=name;
        empSal=sal;
        empDept=dept;
        empCompany=company;
    }
    public static void main(String[] args)
    {
        ClassA emp1=new ClassA("Kishan",10000,"Java","TCS");
        ClassA emp2=new ClassA("John",30000,"Oracle","TCS");
        ClassA emp3=new ClassA("Athena",60000,"Spring","TCS");

        System.out.println("emp1 data : "+emp1.empName+" "+emp1.empSal+" "+emp1
        System.out.println("emp2 data : "+emp2.empName+" "+emp2.empSal+" "+emp2
```

```
emp1 data : Kishan 10000 Java TCS
emp2 data : John 30000 Oracle TCS
emp3 data : Athena 60000 Spring TCS

emp1 data : Kishan 75000 Java
emp2 data : John 30000 Oracle
emp3 data : Athena 60000 Spring
```

here for instance varible we have 3 copies of empcomany is created of same name as TCS
so in this case storage is wasted to avoid this make that variable as static

```java
public class ClassA
{
    String empName;
    int empSal;
    String empDept;

    static String empCompany="TCS";

    ClassA(String name,int sal,String dept)
    {
        empName=name;
        empSal=sal;
        empDept=dept;
    }
    public static void main(String[] args)
    {
        ClassA emp1=new ClassA("Kishan",10000,"Java");
        ClassA emp2=new ClassA("John",30000,"Oracle");
        ClassA emp3=new ClassA("Athena",60000,"Spring");

        System.out.println("emp1 data : "+emp1.empName+" "+emp1.empSal+" "+emp1.empDept+" "+emp1.empCompany);
        System.out.println("emp2 data : "+emp2.empName+" "+emp2.empSal+" "+emp2.empDept+" "+emp2.empCompany);
        System.out.println("emp3 data : "+emp3.empName+" "+emp3.empSal+" "+emp3.empDept+" "+emp3.empCompany);
```

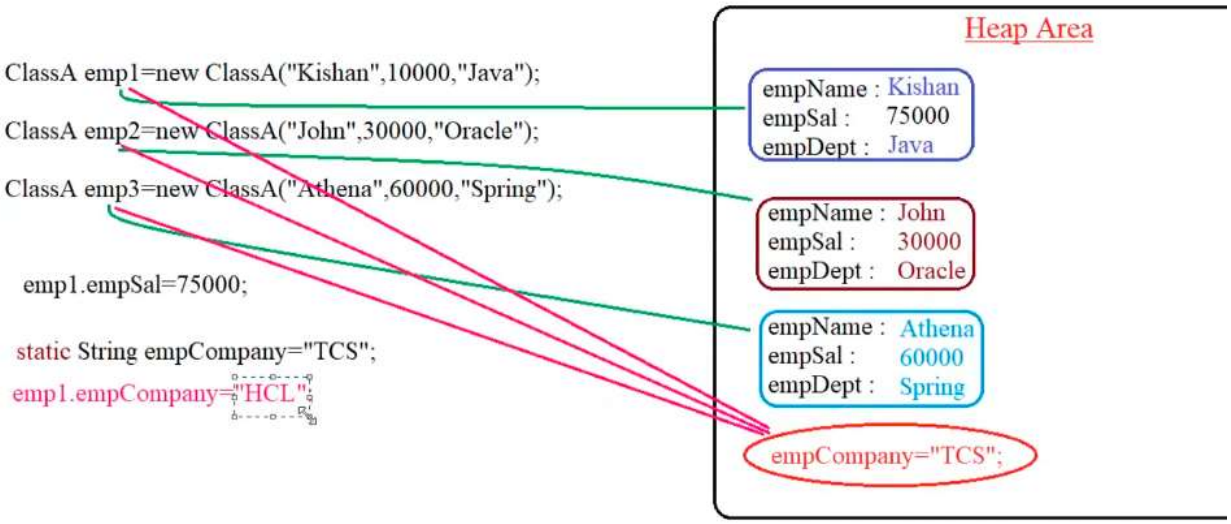
it is advisable to call static variable by class name

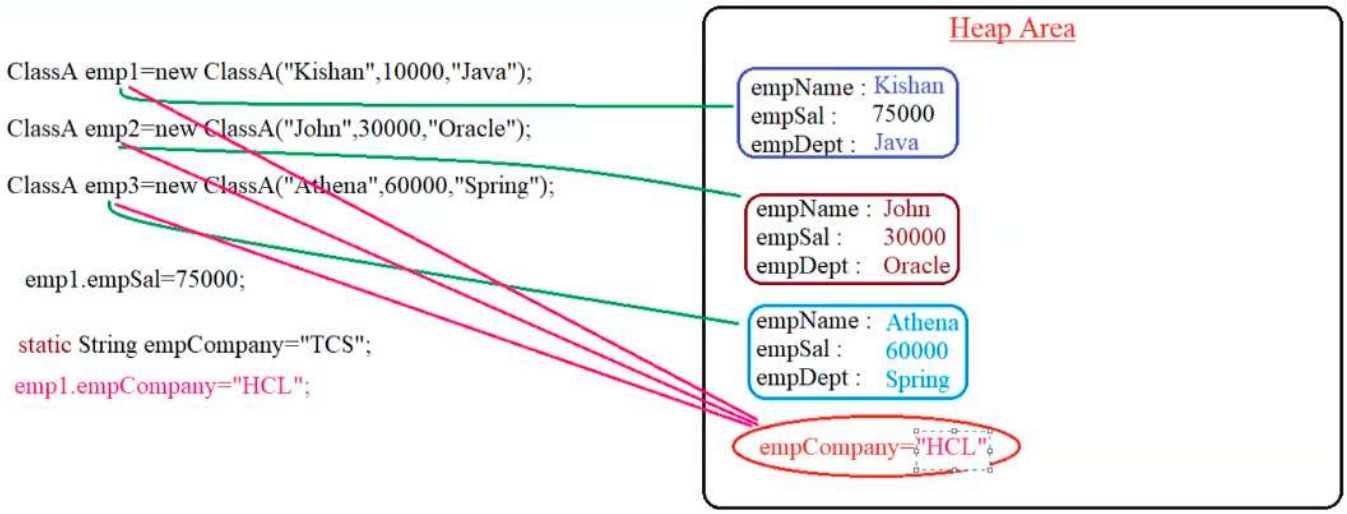
```java
        empDept=dept;
    }
    public static void main(String[] args)
    {
        ClassA emp1=new ClassA("Kishan",10000,"Java");
        ClassA emp2=new ClassA("John",30000,"Oracle");
        ClassA emp3=new ClassA("Athena",60000,"Spring");

        System.out.println("emp1 data : "+emp1.empName+" "+emp1.empSal+" "+emp1.empDept+" "+ClassA.empCompany);
        System.out.println("emp2 data : "+emp2.empName+" "+emp2.empSal+" "+emp2.empDept+" "+ClassA.empCompany);
        System.out.println("emp3 data : "+emp3.empName+" "+emp3.empSal+" "+emp3.empDept+" "+ClassA.empCompany);

        emp1.empSal=75000;

        System.out.println("\nemp1 data : "+emp1.empName+" "+emp1.empSal+" "+emp1.empDept);
        System.out.println("emp2 data : "+emp2.empName+" "+emp2.empSal+" "+emp2.empDept);
        System.out.println("emp3 data : "+emp3.empName+" "+emp3.empSal+" "+emp3.empDept);
    }
}
```


ClassA emp1=new ClassA("Kishan",10000,"Java");
ClassA emp2=new ClassA("John",30000,"Oracle");
ClassA emp3=new ClassA("Athena",60000,"Spring");
emp1.empSal=75000;
static String empCompany="TCS";
emp1.empCompany="HCL";
Heap Area
empName : Kishan
empSal : 75000
empDept : Java
empName : John
empSal : 30000
empDept : Oracle
empName : Athena
empSal : 60000
empDept : Spring
empCompany="TCS";


ClassA emp1=new ClassA("Kishan",10000,"Java");
ClassA emp2=new ClassA("John",30000,"Oracle");
ClassA emp3=new ClassA("Athena",60000,"Spring");
emp1.empSal=75000;
static String empCompany="TCS";
emp1.empCompany="HCL";
Heap Area
empName : Kishan
empSal : 75000
empDept : Java
empName : John
empSal : 30000
empDept : Oracle
empName : Athena
empSal : 60000
empDept : Spring
empCompany="HCL";

```
    ClassA(String name,int sal,String dept)
    {
        empName=name;
        empSal=sal;
        empDept=dept;
    }
    public static void main(String[] args)
    {
        ClassA emp1=new ClassA("Kishan",10000,"Java");
        ClassA emp2=new ClassA("John",30000,"Oracle");
        ClassA emp3=new ClassA("Athena",60000,"Spring");

        System.out.println("emp1 data : "+emp1.empName+" "+emp1.empSal+" "+emp1
        System.out.println("emp2 data : "+emp2.empName+" "+emp2.empSal+" "+emp2
        System.out.println("emp3 data : "+emp3.empName+" "+emp3.empSal+" "+emp3

        emp1.empSal=75000;
        emp1.empCompany="HCL";

        System.out.println("\nemp1 data : "+emp1.empName+" "+emp1.empSal+" "+em
        System.out.println("emp2 data : "+emp2.empName+" "+emp2.empSal+" "+emp2
        System.out.println("emp3 data : "+emp3.empName+" "+emp3.empSal+" "+emp3
    }
}
```

```
emp1 data : Kishan 10000 Java TCS
emp2 data : John 30000 Oracle TCS
emp3 data : Athena 60000 Spring TCS

emp1 data : Kishan 75000 Java HCL
emp2 data : John 30000 Oracle HCL
emp3 data : Athena 60000 Spring HCL
```

Full program

```
public class ClassA
{
    String empName;
    int empSal;
    String empDept;

    static String empCompany="TCS";  // Common properties of a class

    ClassA(String name,int sal,String dept)
    {
        empName=name;
        empSal=sal;
        empDept=dept;
    }
    public static void main(String[] args)
    {
        ClassA emp1=new ClassA("Kishan",10000,"Java");
        ClassA emp2=new ClassA("John",30000,"Oracle");
        ClassA emp3=new ClassA("Athena",60000,"Spring");

        System.out.println("emp1 data : "+emp1.empName+" "+emp1.empSal+" "+emp1.empDept+" "+ClassA.empCompany);
        System.out.println("emp2 data : "+emp2.empName+" "+emp2.empSal+" "+emp2.empDept+" "+ClassA.empCompany);
        System.out.println("emp3 data : "+emp3.empName+" "+emp3.empSal+" "+emp3.empDept+" "+ClassA.empCompany);

        emp1.empSal=75000;
        emp1.empCompany="HCL";

        System.out.println("\nemp1 data : "+emp1.empName+" "+emp1.empSal+" "+emp1.empDept+" "+ClassA.empCompany);
        System.out.println("emp2 data : "+emp2.empName+" "+emp2.empSal+" "+emp2.empDept+" "+ClassA.empCompany);
        System.out.println("emp3 data : "+emp3.empName+" "+emp3.empSal+" "+emp3.empDept+" "+ClassA.empCompany);
    }
}
```

```
10
11      ClassA(String name,int sal,String dept)
12      {
13          empName=name;
14          empSal=sal;
15          empDept=dept;
16      }
17      public static void main(String[] args)
18      {
19          ClassA emp1=new ClassA("Kishan",10000,"Java");
20          ClassA emp2=new ClassA("John",30000,"Oracle");
21          ClassA emp3=new ClassA("Athena",60000,"Spring");
22
23          System.out.println("emp1 data : "+emp1.empName+" "+emp1.empSal+" "+emp1.empDe
24          System.out.println("emp2 data : "+emp2.empName+" "+emp2.empSal+" "+emp2.empDe
25          System.out.println("emp3 data : "+emp3.empName+" "+emp3.empSal+" "+emp3.empDe
26
27          emp1.empSal=75000;
28          emp1.empCompany="HCL";
29
30          System.out.println("\nemp1 data : "+emp1.empName+" "+emp1.empSal+" "+emp1.emp
31          System.out.println("emp2 data : "+emp2.empName+" "+emp2.empSal+" "+emp2.empDe
32          System.out.println("emp3 data : "+emp3.empName+" "+emp3.empSal+" "+emp3.empDe
33      }
34  }
```

```
emp1 data : Kishan 10000 Java TCS
emp2 data : John 30000 Oracle TCS
emp3 data : Athena 60000 Spring TCS

emp1 data : Kishan 75000 Java HCL
emp2 data : John 30000 Oracle HCL
emp3 data : Athena 60000 Spring HCL
```