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Lab 07

Task 1 Company Management system

```
2 usages                                                          ⚠ 11  ✓ 3  ^
class Company {
    1 usage
    String name;
    3 usages
    Store[] arraystore=new Store[2];
    no usages
    int i=0;
    1 usage
    Company(String name) { this.name=name; }
    2 usages
    int j=0;
    2 usages
    void AddStore(Store store) {
            if (j<=10) { arraystore[j++]=store; }
            else { System.out.println("Can Not Have More than Ten Store "); }
    }
    1 usage
    int SearchNoOfProducts(String ProductName) {
        int count=0;
        for (Store store:arraystore) {
            for (Product product : store.ProductList) {
                if (product.name.equals(ProductName)) { count++; }
            }
        }
        return count;
    }
    Store[] store =new Store[2];
    1 usage
    void displayAll() {
        int i=1;
        for(Store store:arraystore) {

            for (Product product : store.ProductList) {

                System.out.print("Store " + i + " ");
                System.out.println(store.name);
                i++;
                break;
            }}}
}
16 usages
class Product {
    5 usages
    String name;
    1 usage
    int quantity;
    1 usage
    double price;
    3 usages
    Product(String name,int quantity,double price) {
        this.name=name;
        this.price=price;
        this.quantity=quantity; }
```

```
44      String Getname() { return name; }
48  }
    11 usages
49  class Store{
        3 usages
50      String name;
        1 usage
51      String Location;
        4 usages
52      int nbProduct;
        11 usages
53      Product ProductList[];
        2 usages
54      Store (String name,String Location) {
55          ProductList=new Product[3];
56          this.name=name;
57          this.Location=Location;
58      }
        no usages
59      String GetName() { return name; }
        2 usages
63      int i=0;
        6 usages
64      void addProduct(Product product) {
65          if (i>100) { System.out.println("Can Not Have More than Hundred Store ");
66          else { ProductList[i++]=product; }
67      }
68      boolean SearchProduct(String ProductName) {
69          boolean flag=false;
70              for (Product product : ProductList) {
71
72                  if (product.name.equals(ProductName)) { flag=true; }
73                  else { flag=false; }
74              }
75          return flag;
76      }
        1 usage
77      Product deleteProduct(String name) {
78          for (Product product:ProductList)
79          {
80              if(product.Getname().equalsIgnoreCase(name))
81              {
82                  for (int i=0;i<nbProduct;i++)
83                  {
84                      if (ProductList[i]==product)
85                      {
86                          break;
87                      }
88                      for (int j=0; j<nbProduct-1; j++)
89                      {
90                          ProductList[j]=ProductList[j+1];
91                      }
92                      ProductList[nbProduct-1]=null;
93                      nbProduct--;
```

```
                    return product;
                }
            }
        }
        return null;
    }
    2 usages
    void displayAll()
    {
            for (Product product : ProductList) {
                System.out.print("Store :");
                System.out.println(product.name);
            }
    }
}
no usages
public class task_1
{
    no usages
    public static void main(String[] args){

            Product p1 = new Product( name: "TV", quantity: 4, price: 34000);
            Product p2 = new Product( name: "Bicycle", quantity: 4, price: 5500);
            Product p3 = new Product( name: "Oven", quantity: 3, price: 70000);


            Store s1 = new Store( name: "Makro", Location: "Karachi");
            Store s2 = new Store( name: "Hypermart", Location: "Karachi");

        s1.addProduct(p1);
        s1.addProduct(p2);
        s1.addProduct(p3);

        s1.displayAll();
        System.out.println();

        Product tempProduct = s1.deleteProduct( name: "Bicycle");
        if (tempProduct!=null) {
            System.out.println("Product " + tempProduct.Getname() + " is deleted");
        }
        else {
            System.out.println("There is no product to delete");
        }
        System.out.println();
        s2.addProduct(p1);
        s2.addProduct(p2);
        s2.addProduct(p3);
        s2.displayAll();

        Company c1 = new Company( name: "Unilever");
        c1.AddStore(s1);
        c1.AddStore(s2);
        System.out.println();
        c1.displayAll();
        System.out.println();
        int n= c1.SearchNoOfProducts( ProductName: "TV");
        System.out.println("Number of stores have TV "+n); }}
```

Task 1 Output

```
Store :TV
Store :Bicycle
Store :Oven

There is no product to delete

Store :TV
Store :Bicycle
Store :Oven

Store 1 Makro
Store 2 Hypermart

Number of stores have TV 2

Process finished with exit code 0
```

Task 2 Person

```java
2 usages  2 inheritors
class Person {
    5 usages
    String First_name;
    3 usages
    String last_name;
    2 usages
    Person(String First_name,String Last_name){
        this.First_name=First_name;
        this.last_name=Last_name;
    }

    4 usages  2 overrides
    void DispalyDetails() {
        System.out.println("Person First Name : "+First_name);
        System.out.println("Person Last Name  : "+First_name);
    }
}
4 usages
class Students extends Person {
    2 usages
    int id;
    2 usages
    String course;
    2 usages
    String Teacher_name;
    Students(String First_name,String Last_name,int id, String course,String teacher_name)
        super(First_name,Last_name);
        this.id=id;
        this.course=course;
        this.Teacher_name=teacher_name;
    }

    4 usages
    void DispalyDetails() {
        System.out.println("Student First Name   : "+First_name);
        System.out.println("Student Last Name    : "+last_name);
        System.out.println("Student ID           : "+id);
        System.out.println("Student Course       : "+course);
        System.out.println("Student Teacher Name : "+Teacher_name);
        System.out.println();
    }}
4 usages
class Teacher extends Person {
    2 usages
    String Subject_name;
    2 usages
    double Salary;
    2 usages
    Teacher (String First_name,String Last_name,String Subject_name,double Salary) {
        super(First_name,Last_name);
        this.Subject_name=Subject_name;
        this.Salary=Salary;
```

```java
    void DispalyDetails()
    {
        System.out.println("Teacher First Name   : "+First_name);
        System.out.println("Teacher Last Name    : "+last_name);
        System.out.println("Teacher Subject Name : "+Subject_name);
        System.out.println("Teacher salary       : "+Salary);
        System.out.println();
    }}
no usages
public class Task_2 {
    no usages
    public static void main(String[] args) {
     Students s1=new Students( First_name: "Ali", Last_name: "Ahmed", id: 100, course: "CIT", teacher_name: "Suresh Kumar");
     Students s2=new Students( First_name: "Abrar", Last_name: "Ali", id: 101, course: "DIT", teacher_name: "Muhammad Farooque");

     Teacher t1=new Teacher( First_name: "Suresh", Last_name: "Kumar", Subject_name: "MS Office", Salary: 40000);
     Teacher t2=new Teacher( First_name: "Muhammad", Last_name: "Farooque", Subject_name: "HTML & CSS", Salary: 45000);

     s1.DispalyDetails();
     s2.DispalyDetails();
     t1.DispalyDetails();
     t2.DispalyDetails(); }}

```

Task 2 Output

```
Student First Name   : Ali
Student Last Name    : Ahmed
Student ID           : 100
Student Course       : CIT
Student Teacher Name : Suresh Kumar

Student First Name   : Abrar
Student Last Name    : Ali
Student ID           : 101
Student Course       : DIT
Student Teacher Name : Muhammad Farooque

Teacher First Name   : Suresh
Teacher Last Name    : Kumar
Teacher Subject Name : MS Office
Teacher salary       : 40000.0

Teacher First Name   : Muhammad
Teacher Last Name    : Farooque
Teacher Subject Name : HTML & CSS
Teacher salary       : 45000.0


Process finished with exit code 0
```

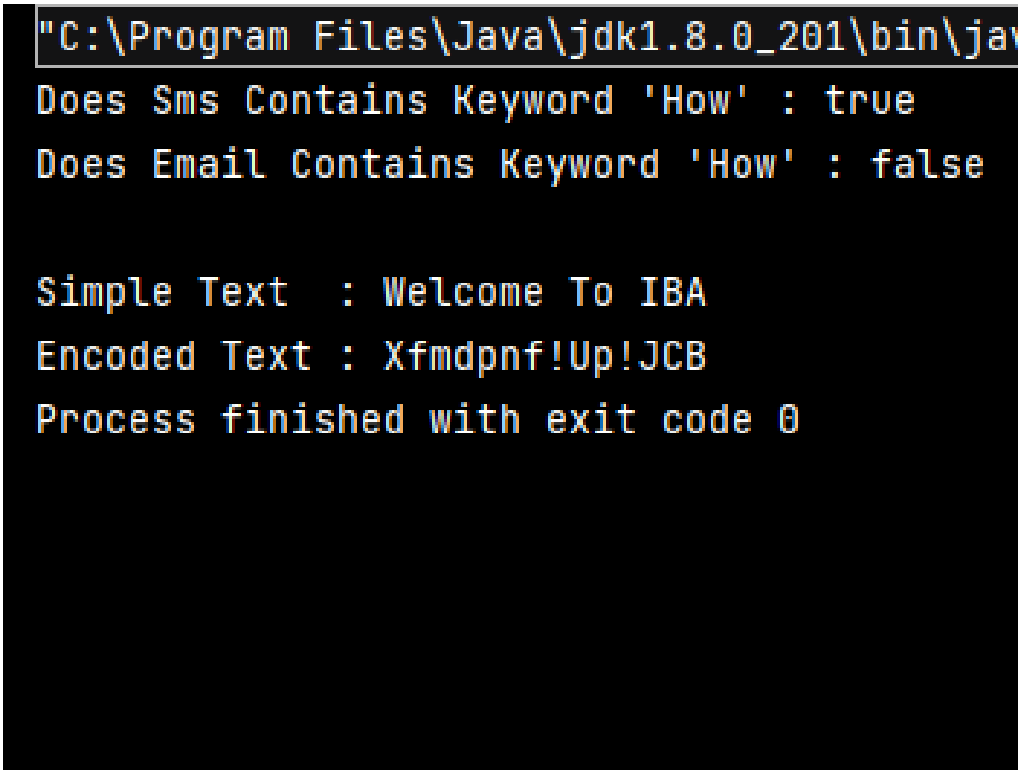
Task 3 SMS, Email, Text Encoder

```java
class Message {
    2 usages
    String Text;

    4 usages  2 overrides
    public void setText(String text) {
        Text = text;
    }
    7 usages  2 overrides
    public String getText() {
        return Text;
    }
    2 overrides
    public String toString() {
        return getText();
    }
}
2 usages
class SMS extends Message {
    2 usages
    int RecipentsContactNum;
    no usages
    public void setRecipentsContactNum(int recipentsContactNum) {
        RecipentsContactNum = recipentsContactNum;
    }
    1 usage
    public int getRecipentsContactNum() {
        return RecipentsContactNum;
    }
    4 usages
    @Override
    public void setText(String text) {
        super.setText(text);
    }
    7 usages
    @Override
    public String getText() {
        return super.getText();
    }
    public String toString()
    {
        return getRecipentsContactNum()+getText();
    }}
2 usages
class Email extends Message {
    2 usages
    String Sender;
    2 usages
    String Reciever;
    2 usages
    String Subject;
    no usages
    public void setSender(String sender) {
        Sender = sender;
    }
    no usages
    public void setReciever(String reciever) {
        Reciever = reciever;
```

```java
    }
    no usages
    public void setSubject(String subject) {
        Subject = subject;
    }
    4 usages
    @Override
    public void setText(String text) {
        super.setText(text);
    }
    1 usage
    public String getSender() {
        return Sender;
    }
    1 usage
    public String getReciever() {
        return Reciever;
    }
    1 usage
    public String getSubject() {
        return Subject;
    }
    7 usages
    @Override
    public String getText() {
        return super.getText();
    }
    @Override
    public String toString() {
     public String toString() {
         return getSender()+getSubject()+getReciever()+getText();
     }}
2 usages
public class Task_3 {
    2 usages
    boolean containsKeyword(String Text, String keyword) { return Text.contains(keyword); }
    1 usage
    void encodeMessage(String message) {
        int codedToAscii;
        char coded ;
        System.out.print("Encoded Text : ");

       for (int i=0; i<message.length(); i++)
        {
            codedToAscii =message.charAt(i);
            codedToAscii=codedToAscii+1;
            coded= (char) codedToAscii;
            System.out.print(coded);
        }}
    no usages
    public static void main(String[] args) {
        Email email=new Email();
        SMS sms=new SMS();
        Task_3 obj=new Task_3();
```

```
89          String keyword="How";
90
91          sms.setText("Hello , How Are You?");
92          email.setText("Hi ! Where Are You Going");
93
94          boolean smscheck= obj.containsKeyword(sms.getText(),keyword);
95          System.out.println("Does Sms Contains Keyword '"+keyword+"' : " +smscheck);
96          boolean emailCheck= obj.containsKeyword(email.getText(),keyword);
97          System.out.println("Does Email Contains Keyword '"+keyword+"' : " +emailCheck);
98
99          String simpletext="Welcome To IBA";
00          System.out.println();
01          System.out.println("Simple Text  : "+simpletext);
02          obj.encodeMessage(simpletext);
03      }}
```

Task 3 Output



Task 4 Alien Game

```java
class Alien
{
    4 usages
    public int health;
    4 usages
    public String name;
    3 usages
    Alien(String name,int health)
    {
        this.health=health;
        this.name=name;
    }
}
2 usages
class Snake_Alien extends Alien {
    1 usage
    private final int SnakeDamage=1;
    3 usages
    int numberOfEnimiesKilled;
    1 usage
    Snake_Alien(int numberOfEnimiesKilled, String name,int health)
    {
        super(name,health);
        this.numberOfEnimiesKilled=numberOfEnimiesKilled;
    }
    int getDamage()
    {
        return SnakeDamage;
    }
    1 usage
    int calculateDamage()
    {
        return getDamage()*numberOfEnimiesKilled;
    }
    public String toString()
    {
        return "Alien "+name+" "+health+" Health"+" And Caused "
                +calculateDamage()+" Damage"+" By Killing "+numberOfEnimiesKilled+" Enemies";
    }
}
2 usages
class Ogre_Alien extends Alien
{
    1 usage
    private final int OgreDamage=3;
    3 usages
    int numberOfEnimiesKilled;
    1 usage
    Ogre_Alien(int numberOfEnimiesKilled ,String name,int health)
    {
        super(name,health);
```

```
        this.numberOfEnimiesKilled=numberOfEnimiesKilled;
    }
    1 usage
    int getDamage() {
        return OgreDamage;
    }
    1 usage
    int calculateDamage()
    {
        return getDamage()*numberOfEnimiesKilled;
    }
    public String toString()
    {
        return "Alien "+name+" "+health+" Health"+" And Caused "+calculateDamage()+" Damage"+" By Killing "+numberOfEnimiesKilled+" Enemies";
    }
}
2 usages
class MarsmallowMan_Alien extends Alien
{
    1 usage
    private final int MarshmallowDamage=3;
    3 usages
    int numberOfEnimiesKilled;
    1 usage
    MarsmallowMan_Alien(int numberOfEnimiesKilled ,String name,int health)
    {
        super(name,health);
        this.numberOfEnimiesKilled=numberOfEnimiesKilled;
    }
    1 usage
    int getDamage() {
        return MarshmallowDamage;
    }
    1 usage
    int calculateDamage()
    {
        return getDamage()*numberOfEnimiesKilled;
    }
    public String toString()
    {
        return "Alien "+name+" "+health+" Health"+" And Caused "
                +calculateDamage()+" Damage"+" By Killing "+numberOfEnimiesKilled+" Enemies";
    }
}
no usages
public class Task_4 {
    no usages
    public static void main(String[] args) {

        Snake_Alien alien1=new Snake_Alien( numberOfEnimiesKilled: 150, name: "Rettle", health: 30);
        Ogre_Alien alien2=new Ogre_Alien( numberOfEnimiesKilled: 80, name: "Bitter", health: 70);
        MarsmallowMan_Alien alien3=new MarsmallowMan_Alien( numberOfEnimiesKilled: 220, name: "Tofee", health: 7);
        System.out.println(alien1.toString());
        System.out.println(alien2.toString());
        System.out.println(alien3.toString());
    }
}
```

Task 4 Output