1. Write a Java program to get the character at the given index within the String

```
package stringpack;
import java.util.Scanner;
public class Ques1 {
public static void main(String[] args) {
// TODO Auto-generated method stub
Scanner sc=new Scanner(System.in);
String str ;
System.out.println("Enter the String:");
str=sc.nextLine();
System.out.println("Original String = " + str);
// Get the character at positions 0 and 10.
System.out.println("enter the index value");
int index1=sc.nextInt();
// int index1 = str.charAt(3);
int index2=sc.nextInt();
//int index2 = str.charAt(10);
// Print out the results.
System.out.println("The character at position 0 is " +
(char)index1);
System.out.println("The character at position 10 is " +
(char)index2);
}
}
```

2 Write a Java program to get the character (Unicode code point) at the given index within the String

```
package stringpack;

import java.util.Scanner;

public class Ques2 {

public static void main(String[] args) {

// TODO Auto-generated method stub

Scanner sc=new Scanner(System.in);

String str ;

System.out.println("Enter the string:");

str=sc.nextLine();

System.out.println("Original String : " + str);

// codepoint at index 1

int val1 = str.codePointAt(1);

// codepoint at index 9

int val2 = str.codePointAt(9);

// prints character at index1 in string

System.out.println("Character(unicode point) = " + val1);

// prints character at index9 in string

System.out.println("Character(unicode point) = " + val2);

}

}
```

3 Write a Java program to compare two strings lexicographically. Two strings are lexicographically equal if they are the same length and contain the same characters in the same positions

```
package stringpack;

import java.util.Scanner;
```

```
public class Ques3 {

public static void main(String[] args)

{

String str1,str2;

Scanner sc=new Scanner(System.in);

System.out.println("Input the two strings:");

str1=sc.nextLine();

str2=sc.nextLine();

System.out.println("String 1: " + str1);

System.out.println("String 2: " + str2);

// Compare the two strings.

int result = str1.compareTo(str2);

// Display the results of the comparison.

if (result < 0)

{

System.out.println("\"" + str1 + "\"" +

" is less than " +

"\"" + str2 + "\"");

}

else if (result == 0)

{

System.out.println("\"" + str1 + "\"" +

" is equal to " +

"\"" + str2 + "\"");

}
```

```
else // if (result > 0)
{
System.out.println("\"" + str1 + "\"" +
" is greater than " +
"\"" + str2 + "\"");
}
}
}
```

4 Write a Java program to counts occurrences of a certain character in a given string

```
package stringpack;
import java.util.Scanner;
public class Ques4 {
public static void main(String args[])
{
String input;
Scanner sc=new Scanner(System.in);
System.out.println("Enter the string:");
input = sc.nextLine();
char search ;
System.out.println("Enter the character to search:");
search = sc.next().charAt(0);// Character to search is 'a'.
int count=0;
for(int i=0; i<input.length(); i++)
{
if(input.charAt(i) == search)
```

```
    count++;
    }
    System.out.println("The Character '"+search+"' appears "+count+" times.");
    }
    }
```

5 Write a Java program to concatenate a given string with itself of a given number of times.

```
 package stringpack;
import java.util.Scanner;
public class Ques5 {
public static void main(String[] args) {
// TODO Auto-generated method stub
String str,s1 =" ";
Scanner sc=new Scanner(System.in);
System.out.println("Enter the string to conactenate");
str=sc.nextLine();
int n;
System.out.println("Enter the number of times to concatenate the given string");
n=sc.nextInt();
for(int i=0;i<n;i++)
{
s1+=str;
}
System.out.println(s1);
}
}
```

6 Write a Java program to sort in ascending and descending order by length of the given array of strings.
Sample Output:
Original unsorted colors: [Green, White, Black, Pink, Orange, Blue, Champagne, Indigo, Ivory]
Sorted color (descending order): [Champagne, Orange, Indigo, Green, White, Black, Ivory, Pink, Blue]
Sorted color (ascending order): [Pink, Blue, Green, White, Black, Ivory, Orange

```
package stringpack;

import java.util.Arrays;

public class Ques6 {

public static void main(String[] args) {

String[] words = {"apple", "banana", "cherry", "date", "elderberry"};

Arrays.sort(words, (a, b) -> a.length() - b.length());

System.out.println(Arrays.toString(words));

Arrays.sort(words, (a, b) -> b.length() - a.length());

System.out.println(Arrays.toString(words));

}

}
```

7 check the given string is panlidrome or not

```
package stringpack;

import java.util.Scanner;

public class Ques7 {

public static void main(String[] args) {

// TODO Auto-generated method stu

String x, y = "";

Scanner a = new Scanner(System.in);

System.out.print("Enter string you want to check:");

x = a.nextLine();
```

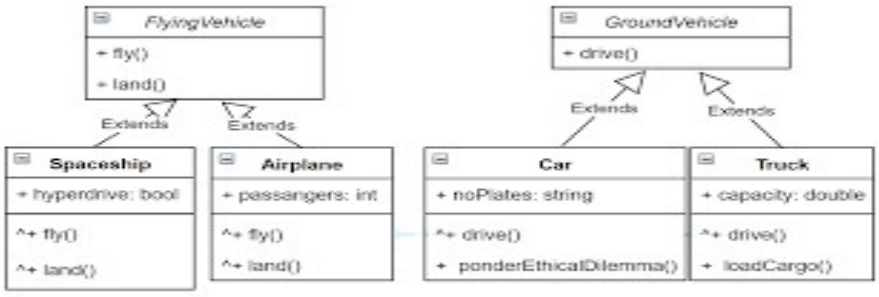
```
int l = x.length();

for(int k = l - 1; k >= 0; k--)

{

y = y + x.charAt(k);

}

if(x.equalsIgnoreCase(y))

{

System.out.println("The string is palindrome.");

}

else

{

System. out.println("The string is not a palindrome.");

}

}

}
```

8 Java Program to prove that strings are immutable in java

```
package stringpack;

public class Ques8 {

public static void main(String[] args) {

// TODO Auto-generated method stub

String s1 = "JAVA";

String s2 = "JAVA";

System.out.println(s1 == s2);

//Output : true

System.out.println("s1 and s2 are equal");
```

```
s1 = s1 + "course";

System.out.println(s1 == s2); //Output : false

System.out.println("s1 and s2 are not equal");

}

}
```

9 Java program to implement below classes using inheritance




```
package inheritancepack;

public class Airplane extends FlyingVehicle {

int passengers;

public Airplane() {

}

public Airplane(int passengers) {

super();

this.passengers = passengers;

System.out.println("passenger are in airplane "+passengers);

}

@Override

public void fly() {

System.out.println("Fly method of Airplane class");
```

```
}
public void land() {
System.out.println("land method of Airplane class");
}
}
```

```
package inheritancepack;
public class Car extends GroundVehicle{
String noPlates;
public Car() {
}
public Car(String noPlates) {
super();
this.noPlates = noPlates;
System.out.println("noplate "+ noPlates);
}
@Override
public void drive() {
// TODO Auto-generated method stub
super.drive();
System.out.println("drive method of car class");
}
public void pounderEthicalDlemma() {
System.out.println("pounderEthicalDlemma method of car class");
}
```

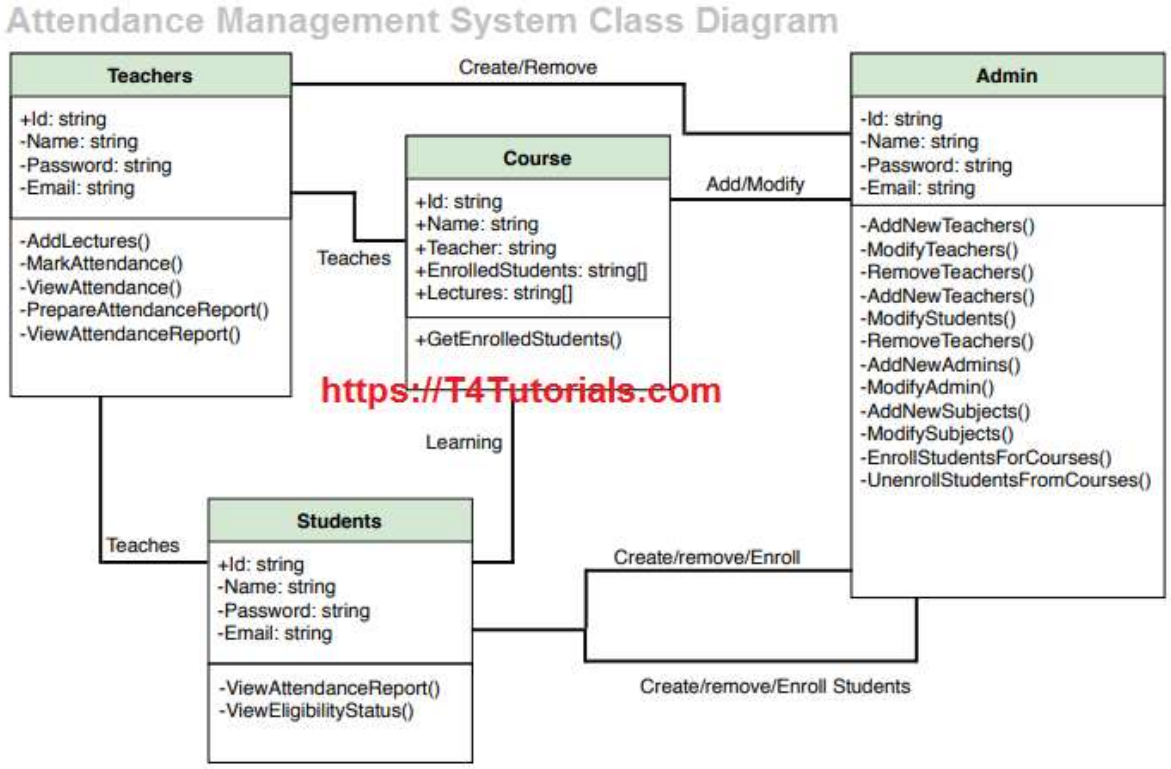
```
}
package inheritancepack;
public class FlyingVehicle {
public void fly() {
System.out.println("Fly method of flying vehicle class");
}
public void land() {
System.out.println("land method of flying vehicle class");
}
}
package inheritancepack;
public class GroundVehicle {
public void drive() {
System.out.println("drive method of groundvehicle class");
}
}
package inheritancepack;
public class SpaceShip extends FlyingVehicle {
boolean hypendrive;
public SpaceShip() {
}
public SpaceShip(boolean hypendrive) {
super();
this.hypendrive = hypendrive;
}
```

```
@Override
public void fly() {
super.fly();
System.out.println("Fly method of spaceship class");
}
public void land() {
super.land();
System.out.println("land method of spaceship vehicle class");
}
}
package inheritancepack;
public class TestFlyingVehicle {
public static void main(String[] args) {
// TODO Auto-generated method stub
/*FlyingVehicle fv=new FlyingVehicle();
fv.fly();
fv.land();*/
SpaceShip ss=new SpaceShip();
ss.fly();
ss.land();
Airplane a=new Airplane();
int passengers=100;
Airplane a1=new Airplane(passengers);
a1.fly();
a1.land();
```

```
Car c=new Car("ka passing");

c.drive();

c.pounderEthicalDlemma();

Truck t=new Truck(1234.5);

t.drive();

t.loadCargo();

}

}
package inheritancepack;

public class Truck extends GroundVehicle {

double capacity;

public Truck() {

}

public Truck(double capacity) {

super();

this.capacity = capacity;

System.out.println("capacity is "+capacity);

}

@Override

public void drive() {

// TODO Auto-generated method stub

System.out.println("drive method of truck class");

}

public void loadCargo() {

System.out.println("loadcargo method of truck class");
```

```
}

}
```

10 Write a java program to implement the below diagram




```
package Attendance;

public class Admin extends Person {

Teachers[] teacherList=new Teachers[15];

static int count=0;

public Admin(String id, String name, String password, String email) {

super(id, name, password, email);

// TODO Auto-generated constructor stub

}

public void addNewTeacher(Teachers teacher)

{

teacherList[count++]=teacher;
```

```
}
public void viewTeacherList()
{
for(int i =0;i<count;i++)
{
System.out.println("teacher list : "+teacherList[i]);
}
}
public void modifyTeacherInfo(String id,String password)
{
for(int i=0;i<count;i++)
{
if(teacherList[i].getId().equals(id))
{
teacherList[i].setPassword(password);
break;
}
}
}
public void removeTeacherById(String id)
{ int pos=-1;
for(int i=0;i<count;i++)
{
if(teacherList[i].getId().equals(id))
{
```

```
pos= i;
break;
}
}
for(int i=pos;i<count;i++)
{
teacherList[i] = teacherList[i+1];
}
if(pos>=0)
{
count--;
}
}
public void viewTeacherById(String id)
{
for(int i =0;i<count;i++)
{
if(teacherList[i].getId().equals(id))
{
System.out.println("Teacher Details : "+teacherList[i]);
}
}
}
Student[] studentList=new Student[15];
static int count1=0;
```

```
/*public Admin(String id, String name, String password, String email) {
super(id, name, password, email);
// TODO Auto-generated constructor stub
}*/
public void addNewStudent(Student student)
{
studentList[count1++]=student;
}
public void viewStudentList()
{
for(int i =0;i<count1;i++)
{
System.out.println("student list : "+studentList[i]);
}
}
public void modifyStudentInfo(String id,String password)
{
for(int i=0;i<count1;i++)
{
if(studentList[i].getId().equals(id))
{
studentList[i].setPassword(password);
break;
}
}
```

```
}
public void removeStudentById(String id)
{ int pos=-1;
for(int i=0;i<count1;i++)
{
if(studentList[i].getId().equals(id))
{
pos= i;
break;
}
}
for(int i=pos;i<count1;i++)
{
studentList[i] = studentList[i+1];
}
if(pos>=0)
{
count--;
}
}
public void viewStudentById(String id)
{
for(int i =0;i<count1;i++)
{
if(studentList[i].getId().equals(id))
```

```
{
System.out.println("student Details : "+studentList[i]);
}
}
}
}
package Attendance;
public class Person {
private String id;
private String name;
private String password;
private String email;
public Person(String id, String name, String password, String email) {
super();
this.id = id;
this.name = name;
this.password = password;
this.email = email;
}
public String getId() {
return id;
}
public void setId(String id) {
this.id = id;
}
```

```
public String getName() {

return name;

}

public void setName(String name) {

this.name = name;

}

public String getPassword() {

return password;

}

public void setPassword(String password) {

this.password = password;

}

public String getEmail() {

return email;

}

public void setEmail(String email) {

this.email = email;

}

@Override

public String toString() {

return "Person [id=" + id + ", name=" + name + ", password=" + password + ", email="
+ email + "]";

}

}

package Attendance;

public class Student extends Person {
```

```
public Student(String id, String name, String password, String email) {
super(id, name, password, email);
// TODO Auto-generated constructor stub
}
}
package Attendance;
public class Teachers extends Person {
public Teachers(String id, String name, String password, String email) {
super(id, name, password, email);
// TODO Auto-generated constructor stub
}
}
package Attendance;

import java.io.BufferedReader;
import java.io.IOException;
import java.io.InputStreamReader;

public class TestAttendance {

        public static void main(String[] args) throws IOException{
                // TODO Auto-generated method stub
                char ch1;
                do
                {
    System.out.println("1 for Admin  ");
    System.out.println("2 for Student  ");
```

```
System.out.println("3 for teacher ");
System.out.println("Enter option 1/2/3  ");
BufferedReader bufferedReader = new BufferedReader(new InputStreamReader(System.in));
int op = Integer.parseInt(bufferedReader.readLine());
switch(op)
{
case 1:
        Admin admin = new Admin("1233", "Durgesh", "asdfgh", "durgesh@gmail.com") ;
        char ch;
        do {



        System.out.println("1 for Add teacher  ");
   System.out.println("2 for ViewTeacherList  ");
   System.out.println("3 for Modify Teacher Details ");
   System.out.println("4 for Delete Teacher Details ");

   System.out.println("5 for Show  Teacher Details  By Id ");
   System.out.println("Enter option 1/2/3/4/5 ");
   int op1 = Integer.parseInt(bufferedReader.readLine());
      switch(op1)
      {
      case 1:
        System.out.println("Enter teacher's id name password and email ");
        Teachers teachers = new Teachers(bufferedReader.readLine(),
bufferedReader.readLine(),bufferedReader.readLine(), bufferedReader.readLine());

       admin.addNewTeacher(teachers);
      break;
```

```
        case 2:
          admin.viewTeacherList();

        break;
       case 3:
          System.out.println("Enter Exsisting teacher Id And Password");
          admin.modifyTeacherInfo(bufferedReader.readLine(),bufferedReader.readLine());
        break;
         case 4:
          System.out.println("Enter Exsisting teacher Id To Delete Teacher Information");
          admin.removeTeacherById(bufferedReader.readLine());
        break;
        case 5:
          System.out.println("Enter Exsisting teacher Id ");
          admin.viewTeacherById(bufferedReader.readLine());
          break;
        default: System.out.println("Invalid Option");




        }
        System.out.println("Do you want to continue");
        ch = bufferedReader.readLine().charAt(0);
        }while(ch=='y'|| ch =='Y');


          break;
case 2:
```

```
            Admin admin1 = new Admin("1233", "Durgesh", "asdfgh", "durgesh@gmail.com") ;
            char ch11 = 0;
            do {



            System.out.println("1 for Add student  ");
          System.out.println("2 for ViewStudentList  ");
          System.out.println("3 for Modify Student Details ");
          System.out.println("4 for Delete Student Details ");

          System.out.println("5 for Show  Student Details  By Id ");
          System.out.println("Enter option 1/2/3/4/5 ");
          int op1 = Integer.parseInt(bufferedReader.readLine());
             switch(op1)
             {
             case 1:
               System.out.println("Enter student's id name password and email ");
               Student students = new Student(bufferedReader.readLine(),
bufferedReader.readLine(),bufferedReader.readLine(), bufferedReader.readLine());

              admin1.addNewStudent(students);
             break;
             case 2:
               admin1.viewStudentList();

             break;
            case 3:
               System.out.println("Enter Exsisting student Id And Password");
               admin1.modifyStudentInfo(bufferedReader.readLine(),bufferedReader.readLine());
```

```
        break;
         case 4:
          System.out.println("Enter Exsisting student Id To Delete Student Information");
          admin1.removeStudentById(bufferedReader.readLine());
        break;
        case 5:
          System.out.println("Enter Exsisting student Id ");
          admin1.viewStudentById(bufferedReader.readLine());
          break;
        default: System.out.println("Invalid Option");




        }
        System.out.println("Do you want to continue");
        ch = bufferedReader.readLine().charAt(0);
        }while(ch11=='y'|| ch11=='Y');



          break;

case 3:
          break;
default :
          System.out.println("Enter Valid Option ");
}
System.out.println("Do you want to continue");
ch1 = bufferedReader.readLine().charAt(0);
                  }while(ch1=='y'|| ch1 =='Y'); } }
```