**Q1)that takes a number as input and prints its multiplicatons table upto 10**

import java.util.Scanner;  
public class Pract1  
{  
 public static void main(String[] args)  
 {  
 Scanner st = new Scanner(System.*in*);  
 System.*out*.println("Enter number");  
 int num = st.nextInt();  
 for (int i = 1; i <= 10; i++)  
 {  
 System.*out*.println(num+"\*"+i+"="+num\*i);  
 }  
 }  
}

**Q2)to display the following pattern**

import java.util.Scanner;  
public class Pract2  
{  
 public static void main(String[] args)  
 {  
 int i,j;  
 for(i=5;i>=1;i--)  
 {  
 for(j=1;j<=i;j++)  
 {  
 System.*out*.print("\*");  
 }  
 System.*out*.println();  
 }  
 }  
}

**Q3)to print the area and perimeter of circle**

import java.util.Scanner;  
public class Pract3  
{  
 public static void main(String[] args)  
 {  
 double r=1.2f;  
 double perimeter=2\*3.14\*r;  
 double area=3.14\*r\*r;  
 System.*out*.println("Perimeter is: "+perimeter);  
 System.*out*.println("Area is: "+area);  
 }  
}

**Q4)to add two binary numbers**

import java.util.Scanner;  
public class Pract4  
{  
 public static void main(String[] args)  
 {  
 long b1,b2;  
 int i=0,rem=0;  
 int[] sum = new int[20];  
 Scanner in = new Scanner(System.*in*);  
 System.*out*.println("1st Binary number");  
 b1 = in.nextLong();  
 System.*out*.println("2nd Binary number");  
 b2 = in.nextLong();  
 while (b1 != 0 || b2 != 0)  
 {  
 sum[i++]=(int)((b1%10+b2%10+rem)%2);  
 rem=(int)((b1%10+b2%10+rem)%2);  
 b1=b1/10;  
 b2=b2/10;  
 }  
 if(rem!=0)  
 {  
 sum[i++]=rem;  
 }  
 --i;  
 System.*out*.println("Sum of b1+b2:=");  
 while(i>=0)  
 {  
 System.*out*.println(sum[i--]);  
 }  
 }  
}

**Q5)to convert a decimal number to binary number and vice versa**

import java.util.Scanner;  
class Pract5  
{  
 public static void main(String a[]) {  
 int num1;  
 String num2;  
 Scanner st = new Scanner(System.*in*);  
 System.*out*.print("Enter Binary number: ");  
 num2 = st.nextLine();  
 System.*out*.print("Enter Decimal number: ");  
 num1 = st.nextInt();  
 System.*out*.println("Binary to Decimal :" + Integer.*parseInt*(num2, 2));  
 System.*out*.println("Decimal to Binary." + Integer.*toBinaryString*(num1));  
 }  
}

**Q6)to reverse a string**

import java.util.\*;  
public class Pract6  
{  
 public static void main(String[] args) {  
 String s, t = "";  
 Scanner in = new Scanner(System.*in*);  
 System.*out*.println("Enter a string: ");  
 s = in.nextLine();  
 int length = s.length();  
 for (int i =length-1; i>=0; i--)  
 t=t+ s.charAt(i);  
 System.*out*.println("Reverse: "+t);  
 }  
}

**Q7)to count the letter, space ,numbers and other characters of an input string**

import java.util.Scanner;  
public class Pract7 {  
 public static void main(String[] args) {  
 String st;  
 Scanner in = new Scanner(System.*in*);  
 System.*out*.println("Enter a string: ");  
 st = in.nextLine();  
 *count*(st);  
 }  
  
 public static void count(String x)  
 {  
 char[] ch = x.toCharArray();  
 int l = 0, s = 0, n = 0, a = 0;  
 for (int i = 0; i < x.length(); i++)  
 {  
 if (Character.*isLetter*(ch[i]))  
 {  
 l++;  
 } else if (Character.*isDigit*(ch[i]))  
 {  
 n++;  
 } else if (Character.*isSpaceChar*(ch[i]))  
 {  
 s++;  
 } else  
 {  
 a++;  
 }  
 }  
 System.*out*.println("Letter:" + l);  
 System.*out*.println("Space: " + s);  
 System.*out*.println("Number:" + n);  
 System.*out*.println("Other: " + a);  
 }  
}

**Q8)that calculate the sum of digits from 0-9**

public class Pract8  
{  
 public static long calc()  
 {  
 long x=0L;  
 char c[] = {'0','1','2','3','4','5','6','7','8','9'};  
 long sum=0L;  
 for(int i=c.length-1;i>=0;i--)  
 {  
 x = c[i] - '0';  
 sum = sum + x;  
 }  
return sum;  
 }  
 public static void main(String[] args)  
 {  
 long r=*calc*();  
 System.*out*.println("Integer is " + r);  
 }  
}

**Q9) smallest and largest element from array**

public class Pract9  
{  
 public static void main(String[] args)  
 {  
 int num[] = new int[]{13,22, 27,11,4};  
 int s= num[0];  
 int g= num[0];  
 int i;  
 for(i=0; i<num.length; i++)  
 {  
 System.*out*.println(num[i]);  
 }  
 for(i=1; i<num.length; i++)  
 {  
 if(num[i] >g)  
 g=num[i];  
 else if (num[i] < s)  
 s= num[i];  
 }  
 System.*out*.println("Largest Number in array :" + g);  
 System.*out*.println("Smallest Number in array:" + s);  
 }  
}

**Q10) class sort data that contains the method asec() and desc()**

class SortData  
{  
 int n, temp, i, j;  
 public void desc(int num[])  
 {  
 for (i = 0; i < num.length; i++)  
 {  
 for (j = i + 1; j < num.length; j++)  
 {  
 if (num[i] < num[j])  
 {  
 temp = num[i];  
 num[i] = num[j];  
 num[j] = temp;  
 }  
 }  
 }  
 System.*out*.println("Descending Order:");  
 for (i = 0; i < num.length; i++)  
 {  
 System.*out*.print(num[i] + " ");  
 }  
 }  
 public void asec(int num1[])  
 {  
 for (i = 0; i < num1.length; i++)  
 {  
 for (j = i + 1; j < num1.length; j++)  
 {  
 if (num1[i] > num1[j])  
 {  
 temp = num1[i];  
 num1[i] = num1[j];  
 num1[j] = temp;  
 }  
 }  
 }  
 System.*out*.println("\nAscending Order:");  
 for(i=0;i<num1.length;i++)  
 {  
 System.*out*.print(num1[i] + " ");  
 }  
 }  
}  
public class Pract10  
{  
 public static void main(String[] args)  
 {  
 SortData s1=new SortData();  
 int ar[]=new int[]{13,22,27,11,4};  
 s1.desc(ar);  
 s1.asec(ar);  
 }  
}

**Q11)** **Designed a class that demonstrates the use of constructor and destructor.**

public class Pract11  
{  
 public Pract11()  
 {  
 System.*out*.println("Hello");  
 }  
 public void finalize()  
 {  
 System.*out*.println("Destroyed");  
 }  
  
 public static void main(String args[])   
 {  
 Pract11 s1 = new Pract11();  
 s1 = null;  
 System.*gc*();  
 }  
}

**Q12) Write a java program to demonstrate the implementation of abstract class.**

abstract class Calc  
{  
public abstract int sqr(int n1);  
public abstract int cube(int n1);  
public void show()  
{  
 System.*out*.println("Hello");  
}  
}  
class Pract12 extends Calc  
{  
public int sqr(int n1)  
{  
 return n1 \* n1;  
}  
public int cube(int n1)  
{  
 return n1 \* n1 \* n1;  
}  
public static void main(String args[])  
{  
 Pract12 st = new Pract12();  
 System.*out*.println(st.sqr(3));  
 System.*out*.println(st.cube(4));  
 st.show();  
}  
}

**Q13)** **A java program to implement single level inheritance.**

class Demo  
{  
 float pi = 3.14f;  
  
 void show()  
 {  
 System.*out*.println("Area of circle");  
 }  
}  
class Pract13 extends Demo  
{  
 float r = 2.0f;  
  
 void area() {  
 System.*out*.println(pi \* r \* r);  
 }  
  
 public static void main(String args[]) {  
 Pract13 p = new Pract13();  
 p.show();  
 p.area();  
 }  
}

**Q14) A java program to implement method overriding.**

class A  
{  
void show( )  
{  
 System.*out*.println("Base Class");  
}  
}  
 class B extends A  
 {  
 void show( )  
 {  
 System.*out*.println("Derieved Class");  
 }  
}  
class Pract14  
{  
 public static void main(String args[])  
 {  
 B s=new B();  
 s.show();  
 }  
}

**Q15) A java program to implement multiple inheritance.**

interface S  
{  
public void show();  
}  
interface T extends S  
{  
 public void display();  
}  
class Pract15 implements T  
{  
 public void show() {  
 System.*out*.println("From Interface S");  
 }  
  
 public void display() {  
 System.*out*.println("From Interface T");  
 }  
  
 public static void main(String args[]) {  
 Pract15 rl = new Pract15();  
 rl.show();  
 rl.display();  
 }  
}

Q16) **Create a package, add the necessary classes and import the package in java class.**

Starting steps:

Project\_Folder/

│-- mathematics/

│ │-- Mathmethods.java

│-- sqr.java

Run sqr.java file

i)Mathmethods.java

package mathematics;

public class Mathmethods

{

public static float sqr(float n)

{

return (n \* n);

}

public static int sqr(int n)

{

return (n \* n);

}

public static double sqr(double n)

{

return (n \* n);

}

public static long sqr(long n)

{

return (n \* n);

}

}

ii) sqr.java

import mathematics.Mathmethods;

class sqr

{

public static void main(String args[])

{

int a = 2;

int b = Mathmethods.sqr(a);

System.out.println("Square is: " + b);

}

}

Q17) Write a java program to add two matrix and print the resultant matrix.

class pract17

{

public static void main(String args[])

{

int a[][]={{1,2},{3,4}};

int b[][]={{5,6},{7,8}};

int c[][]=new int[2][2];

int i,j;

System.out.println("Matrix A");

for(i=0;i<2;i++)

{

for(j=0;j<2;j++)

{

System.out.print(a[i][j]+" ");

}

System.out.println();

}

System.out.println("Matrix B");

for(i=0;i<2;i++)

{

for(j=0;j<2;j++)

{

System.out.print(b[i][j]+" ");

}

System.out.println();

}

System.out.println("Matrix A+B");

for(i=0;i<2;i++)

{

for(j=0;j<2;j++)

{

c[i][j]=a[i][j]+b[i][j];

System.out.print(c[i][j]+" ");

}

System.out.println();

}

}

}

**Q18)** **AWT- Textfield and Textarea**

import java.awt.\*;

import java.awt.event.\*;

public class AWTTextExample {

public static void main(String[] args) {

// Create a new Frame (Window)

Frame frame = new Frame("AWT Text and TextArea Example");

// Create a label for TextField

Label label1 = new Label("Enter your name:");

// Create a TextField (single-line text input)

TextField textField = new TextField("Default Name");

// Create a label for TextArea

Label label2 = new Label("Enter comments:");

// Create a TextArea (multi-line text input)

TextArea textArea = new TextArea("Default comment...", 5, 20); // 5 rows, 20 columns

// Add components to the frame

frame.add(label1);

frame.add(textField);

frame.add(label2);

frame.add(textArea);

// Set the layout of the frame

frame.setLayout(new FlowLayout());

// Set the size of the frame

frame.setSize(300, 300);

// Add window listener to handle closing of window

frame.addWindowListener(new WindowAdapter() {

public void windowClosing(WindowEvent we) {

System.exit(0);

}

});

// Make the frame visible

frame.setVisible(true);

}

}

Q19) Create a scrollbar (AWT)

import java.awt.\*;

public class SimpleScrollbarExample {

public static void main(String[] args) {

// Create a new Frame (Window)

Frame frame = new Frame("Simple Scrollbar Example");

// Create a Scrollbar (vertical)

Scrollbar scrollbar = new Scrollbar(); // default vertical scrollbar

// Set the position and size of the scrollbar

scrollbar.setBounds(50, 50, 20, 200); // position (x, y), width, height

// Add the scrollbar to the frame

frame.add(scrollbar);

// Set the layout of the frame to null (no layout manager)

frame.setLayout(null);

// Set the size of the frame

frame.setSize(300, 300);

// Make the frame visible

frame.setVisible(true);

// Add window listener to handle closing of window

frame.addWindowListener(new java.awt.event.WindowAdapter() {

public void windowClosing(java.awt.event.WindowEvent we) {

System.exit(0);

}

});

}

}

Q20) Checkbox and Checkbox group

import java.awt.\*;

public class CheckboxExample {

public static void main(String[] args) {

Frame f = new Frame("Checkbox Example");

// Creating checkbox

Checkbox checkbox = new Checkbox("Accept Terms");

// Add checkbox to the frame

f.add(checkbox);

// Set layout and size

f.setLayout(new FlowLayout());

f.setSize(300, 100);

f.setVisible(true);

}

}

**Q21) List Class**

import java.awt.\*;

import java.awt.event.\*;

public class ListExample {

public static void main(String[] args) {

Frame f = new Frame("List Example");

// Create a List with multiple selection mode

List list = new List(5, true); // 5 visible rows, multiple selection enabled

// Add items to the list

list.add("Java");

list.add("Python");

list.add("C++");

list.add("JavaScript");

list.add("Ruby");

// Add an ItemListener to respond to selection

list.addItemListener(new ItemListener() {

public void itemStateChanged(ItemEvent e) {

System.out.println("Selected Item: " + list.getSelectedItem());

}

});

// Add the List to the frame

f.add(list);

// Set the layout and size

f.setLayout(new FlowLayout());

f.setSize(300, 200);

f.setVisible(true);

// Close the frame on close

f.addWindowListener(new WindowAdapter() {

public void windowClosing(WindowEvent we) {

System.exit(0);

}

});

}

}

**Q22) Label Control**

import java.awt.\*;

public class LabelExample {

public static void main(String[] args) {

Frame f = new Frame("Label Example");

// Create a Label with text and alignment

Label label = new Label("Hello, Java!", Label.CENTER);

label.setForeground(Color.BLUE);

// Add the label to the frame

f.add(label);

// Set layout and size

f.setLayout(new FlowLayout());

f.setSize(300, 100);

f.setVisible(true);

// Close the frame on window close

f.addWindowListener(new java.awt.event.WindowAdapter() {

public void windowClosing(java.awt.event.WindowEvent we) {

System.exit(0);

}

});

}

}