Div: H **Name -Vaibhav Pal** **SAP ID - 60009220124**

Experiment No - 1

AIM: To implement JAVA control statements and loops.

a. Given an integer ,n, perform the following conditional actions

CODE:

```
import java.util.*;
public class wierd{
public static void main(String args[]){
Scanner sc = new Scanner(System.in);
System.out.println("Enter the number");
int a = sc.nextInt();
if(a%2==0)
{
if(a>=2 &&a<=5||a>20)
{System.out.println("Not weird");}
else
{System.out.println("Weird");}
}
else
{System.out.println("Weird");}
}
}
```

OUTPUT:

```
D:\D117>javac wierd.java

D:\D117>java wierd
Enter the number
5
Weird
```

CONCLUSION:

Thus we have learned to write JAVA program using for lops and while loops.

b. To find largest of 3 no.s using nested if else and nested ternary operator.

BY if else:

CODE:

```
import java.util.*;
```

```
public class great{

        public static void main(String args[]){

                Scanner sc = new Scanner(System.in);

                System.out.println("Enter the first number");

                int n1 = sc.nextInt();

                System.out.println("Enter the second number");

                int n2 = sc.nextInt();

                System.out.println("Enter the third number");

                int n3 = sc.nextInt();

if(n1>=n2 && n1>=n3)

System.out.println(n1+ " is greatest");

if(n2>=n1 && n2>=n3)

System.out.println(n2+ " is greatest");

else

System.out.println(n3+ " is greatest");

}

}
```

OUTPUT:

```
D:\D117>javac greatestno.java

D:\D117>java greatestno
Enter the first number
4
Enter the second number
5
Enter the third number
6
6 is greatest
```

CONCLUSION: Thus we have learned to program JAVA using if else.

BY nested ternary operator:

CODE:

import java.util.*;

```
public class greatestno2{
        public static void main(String args[]){
                Scanner sc = new Scanner(System.in);
                System.out.println("Enter the first number");
                int n1 = sc.nextInt();
                System.out.println("Enter the second number");
                int n2 = sc.nextInt();
                System.out.println("Enter the third number");
                int n3 = sc.nextInt();
    if(n1>=n2 && n1>=n3)
    System.out.println(n1+ " is greatest");
    if(n2>=n1 && n2>=n3)
    System.out.println(n2+ " is greatest");
    else
    System.out.println(n3+ " is greatest");
    }
    }
```

OUTPUT:

```
D:\D117>javac greatestno2.java

D:\D117>java greatestno2
Enter the first number
1
Enter the second number
2
Enter the third number
3
3 is greatest
```

CONCLUSION: Thus we have learned to program JAVA using nested ternary operator.

C. AIM: to write a program that reads the positive no.s and counts the no. of digits the no. has.

CODE:

```
import  java.util.*;

public class number{

        public static void main(String args[])

          {

int count=0;

                Scanner sc= new Scanner(System.in);
```

```
                int n=sc.nextInt();
                while(n!=0)
                {
                   n=n/10;
                   count++;
                }
          System.out.println("number is:"+count);


}
}
```

OUTPUT:

```
D:\D117>javac number.java

D:\D117>java number
123
number is:3
```

CONCLUSION: Thus we learned that we can program using for loops and while loops.

d. AIM: to write a menu driven program using switch case to perform mathematical operations.

CODE:

```
import java.util.*;
public class calci{
        public static void main(String args[]){
                Scanner sc = new Scanner(System.in);
                System.out.println("Enter the first number");
                int n1 = sc.nextInt();
                System.out.println("Enter the second number");
                int n2 = sc.nextInt();
System.out.println("Press 1 for addition");
```

```
System.out.println("Press 2 for subtraction");
System.out.println("Press 3 for multiplication");
System.out.println("Press 4 for division");
System.out.println("Enter choice");
int choice = sc.nextInt();
switch(choice)
{
case 1:System.out.println(n1+n2);
break;
case 2:System.out.println(n1-n2);
break;
case 3:System.out.println(n1*n2);
break;
case 4:System.out.println(n1/n2);
break;
default:
System.out.println("not valid");
}}}
```

OUTPUT:

```
D:\D117>javac calci.java

D:\D117>java calci
Enter the first number
6
Enter the second number
4
Press 1 for addition
Press 2 for subtraction
Press 3 for multiplication
Press 4 for division
Enter choice
3
24
```

CONCLUSION: THUS WE CAN PROGAM USING switch case.

e. AIM: to find grade of student from input marks using if else ladder and switch case.

BY if else ladder:-

CODE:

```
import java.util.*;
public class grade{
public static void main(String args[]){
Scanner sc = new Scanner(System.in);
System.out.println("Enter Percentage");
double percentage = sc.nextDouble();
if(percentage>=90)
{
System.out.println("Excellent: Grade A");
}
else if(percentage<90 &&percentage>=80)
{
System.out.println("Grade B");
}
else if(percentage<80 && percentage>=70)
{
System.out.println("Grade C");
}
else if(percentage<70 && percentage>=60)
{
System.out.println("Grade D");
}
else if(percentage<60 && percentage>=50)
```

```
{
System.out.println("Grade E");
}
else
{
System.out.println("Failed");
}
}
}
```

OUTPUT:

```
D:\D117>javac grade.java

D:\D117>java grade
Enter Percentage
99
Excellent: Grade A
```

CONCLUSION: thus we learned to program using if else ladder.

BY switch case:-

CODE:

```
import java.util.*;
public class grade2{
public static void main(String args[]){
Scanner sc = new Scanner(System.in);
System.out.println("Enter Percentage");
int marks=sc.nextInt();
switch(marks/10)
{
case 10:System.out.println("grade A");
break;
case 9:System.out.println("grade A");
break;
case 8:System.out.println("grade B");
break;
case 7:System.out.println("grade C");
break;
case 6:System.out.println("grade D");
break;
case 5:System.out.println("grade E");
break;
case 4:System.out.println("grade F");
break;
case 3:System.out.println("grade F");
```

```
break;
case 2:System.out.println("grade F");
break;
case 1:System.out.println("grade F");
break;
}}}
```

OUTPUT:

```
D:\D117>javac grade2.java

D:\D117>java grade2
Enter Percentage
89
grade B
```

CONCLUSION: Thus we learned to program using switch class.

f. AIM: To print the sum of following series 1+1/2^2+1/3^2+.....+1/n^2.

CODE:

```
import java.util.*;
import java.math.*;
public class sum1{
public static void main(String args[]){
Scanner sc = new Scanner(System.in);
int n,i;
double sum=0.0;
System.out.println("Enter n");
n=sc.nextInt();
for (i=1;i<=n;i++)
{
sum=sum+1/Math.pow(i,i);
}
System.out.println("sum="+sum);
}
}
```

OUTPUT:

```
D:\D117>javac sum1.java

D:\D117>java sum1
Enter n
3
sum=1.287037037037037
```

CONCLUSION: Thus we learned to program using for loop.

g. AIM: To display different patterns.

1.

CODE:

```
import java.util.*;
import java.math.*;
public class pattern{
public static void main(String args[]){
int i,j,n;
Scanner sc = new Scanner(System.in);
System.out.println("Enter number of lines");
n=sc.nextInt();
for(i=1;i<=n;i++)
{
if(i%2==0)
for(j=i;j>=1;j--)
{
System.out.print(j);
}
else
for(j=1;j<=i;j++)
{
System.out.print(j);
}
System.out.println(" ");
}
}
}
```

OUTPUT:

```
D:\D117>javac pattern.java

D:\D117>java pattern
Enter number of lines
6
1
21
123
4321
12345
654321
```

CONCLUSION:Thus we learned to program using for loops.

2.

CODE:

```
import java.util.*;

import java.math.*;

public class patternalpha{

public static void main(String args[]){

int i,j,k,n,temp=65,alpha,temp1=1;

Scanner sc = new Scanner(System.in);

System.out.println("Enter number of lines");

n=sc.nextInt();

for(i=1;i<=n;i++)

{

for(k=1;k<=n-1;k++)

{

System.out.println("");

}

alpha=temp;

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

{

System.out.print((char) alpha);

alpha--;

}

temp=temp+(++temp1);

System.out.println();

}

}

}
```

OUTPUT:

```
D:\D117>javac patternalpha.java

D:\D117>java patternalpha
Enter number of lines
6




A



CB



FED



JIHG



ONMLK



UTSRQP
```

CONCLUSION: Thus we learned to program using for loops.