N.HARI PRASAD LAB1 ASSESMENT

Q1. Write a java program to check whether given number is Armstrong number or not?

```
package lab.controlstms;

import java.util.*;

public class Armstrong_num {

public static void main(String[] args) {

Scanner obj = new Scanner(System.in);

int num, sum=0, r, num1,num2, count=0, multiply;

System.out.println("enter your number ");

num = obj.nextInt();

num2=num1 =num;

while(num1>0)

{

num1=num1/10;

count++;

}

while(num>0)

{

r=num%10;

multiply=1;

for(int j=1;j<=count;j++)

multiply = multiply * r;
```

```
sum=sum+multiply;

num=num/10;

}

if(sum==num2)

System.out.println("Given number is Armstrong");

else

System.out.println("Given number is Not Armstrong");

}

}
```

Output:

```
Enter your number
9
Given number is Armstrong
        (or)
Enter your number
89
Given number is Not Armstrong
```

Q2. Write a Program to display all the Armstrong number between 10 to 1000

```
package lab.controlstms;

import java.util.*;

public class ARMSTRONG_NUMBERS {

public static void main(String[] args) {

Scanner obj = new Scanner(System.in);

int i, num, r, sum;

for(i=10;i<=1000;i++)

{

sum=0;

num=i;

while(num>0)

{

r=num%10;

sum=sum+(r*r*r);

num/=10;

}

if(sum==i)

System.out.println(i);

}

}

}
```

Output:

153
370
371
407

(OR)

```
package  lab.controlstms;
import java.util.*;

public static void main(String[] args) {

Scanner key=new Scanner(System.in);

System.out.println(" enter a num");

int n=key.nextInt();

int r,count=0,n2,n1,sum=0;

n2=n1=n;

while(n1>0)

{

n1=n1/10;

count++;

}System.out.println(count);

while(n>0)

{

int lastdigit;

int power=1;
```

```
lastdigit=n%10;

for(int i=1;i<=count;i++)

power=power*lastdigit;

sum=sum+power;

n=n/10;

}System.out.println(sum);

if(sum==n2)

{

System.out.println("Armstrong number");

}else {

System.out.println(" not armstrong");

}

}

}
```

Output:

153
370
371
407

Q3. Write a program to find sum of the following series

a. Sum = x-1/x+2/x-3/x....n/x.

```
package lab.controlstms;

import java.util.*;

public class Series_sum {

public static void main(String[] args) {

Scanner obj = new Scanner(System.in);

int num;

float x,sum=0;

System.out.println("Program to find of x-1/x+2/x-3/x....n/x");

System.out.println("Enter x value");

x=obj.nextFloat();

System.out.println("Enter num value");

num=obj.nextInt();

for(int i=1;i<=num;i++)

{

if(i%2==0)

sum=sum-(float)i/x;

else

sum=sum+(float)i/x;;

}

System.out.println("series sum is"+sum);

}
```

```
}
```

Output:

```
Program to find of x-1/x+2/x-3/x....n/x
Enter x value
2
Enter num value
5
series sum is1.5
```

b. 1!+2!+3!+.....n!

```
package lab.controlstms;
import java.util.*;
public class Factorial_sum {
public static void main(String[] args) {
Scanner obj = new Scanner(System.in);
int n;
long f=1;
long sum=0;
System.out.print("Enter n value");
n= obj.nextInt();
for(int i=1;i<=n;i++)
{
```

```
f=1;
for(int j=1;j<=i;j++)
{
f=f*j;
}
sum=sum+f;
System.out.print(f+" ! + ");
}
System.out.println("\n factorial sum is "+sum);
}
}
```

Output:

```
Enter n value
6
1 ! + 2 ! + 6 ! + 24 ! + 120 ! + 720 ! +
factorial sum is 873
```

Q4. Write a java program to check given number is perfect number or not.

```
package lab.controlstms;

import java.util.*;

public class Perfect_Num {

public static void main(String[] args) {

Scanner sc = new Scanner(System.in);

int num,sum=0;

System.out.println("enter the number");

num=sc.nextInt();

for(int i=1;i<num;i++)

{

if(num%i==0)

{

sum =sum+i;

}

}

if(sum==num)

{

System.out.println(" perfect number");

}

else

{
```

```
System.out.println(" not a perfect number");
}
}
}
```

Output:

enter the number

6

perfect number

(OR)

enter the number

25

not a perfect number

Q5. Display all perfect numbers between 1 to 100000.

```
package lab.controlstms;

import java.util.*;

public class Perfect_numbers {

public static void main(String[] args) {

Scanner sc=new Scanner(System.in);

System.out.println("enter n1 and n2 ");

int n1=sc.nextInt();

int n2=sc.nextInt();

for(int i=n1;i<=n2;i++)

{

int n=i;

int sum=0,fact=1;

while(fact<n)

{

if((n%fact)==0)

{

sum=sum+fact;

}

fact++;

}

if(sum==i)
```

```
{
System.out.println(i);
}
}
}
}
```

Output:

```
enter n1 and n2
1
1000000
6
28
496
8128
```

Q6. Write a program to extract only character from a string.

Eg: Af02284khff -> Afkhff

```
package lab.controlstms;

import java.util.*;

public class Extracted_string {

public static void main(String[] args) {

String txt, str="";

char ch;

Scanner obj = new Scanner(System.in);

System.out.println("Enter your text ");

txt = obj.next();

for(int i=0;i<txt.length();i++)

{

ch = txt.charAt(i);

if(ch>='a' & ch<='z' | ch>='A' & ch<='Z')

str=str + ch;

}

System.out.println("Extracted string is :"+ str);

}

}
```

Enter your text

Af02284khff

Extracted string is :Afkhff

Q7. Write a program to find reverse of digits

```
package lab.controlstms;

import java.util.*;

public class Rev_digits {

public static void main(String[] args) {

Scanner key= new Scanner(System.in);

int num, r, reverse=0;

System.out.println("Enter a number");

num = key.nextInt();

while(num>0)

{

r=num%10;

reverse= (reverse*10) +r;

System.out.print(r);

num/=10;

}

System.out.println("reverse of the digits : "+ reverse);

}

}
```

Output:

Enter a number

143

341reverse of the digits : 341

Q8. Write a program to find power value of given base and exponent number.

```
package lab.controlstms;

import java.util.*;

public class Power {

public static void main(String[] args) {

Scanner sc=new Scanner(System.in);

int b,exp;

long power=1;

System.out.println("Enter the base");

b=sc.nextInt();

System.out.println("Enter the exponent");

exp=sc.nextInt();

while(exp!=0)

{

power=power*b;

exp--;

}

System.out.println(b+" to the power "+exp+"is "+power);

System.out.println("The value of the power : "+power);

}
```

}

Output:

Enter the base

5

Enter the exponent

3

5 to the power 0is 125

The value of the power : 125

Q9. Write a program to convert every first letter of string to capital letter

a. **eg: the Hindu -> The Hindu**

```
package lab.controlstms;

public class Capital {

public static void main(String[] args) {

String txt = "the Hindu";

int h = 0;

boolean capitalize = true;

StringBuilder sb = new StringBuilder(txt);

while (h < sb.length()) {

if (sb.charAt(h) == ' ') {

capitalize = true;

}

else if (capitalize && !Character.isWhitespace(sb.charAt(h)))

{

sb.setCharAt(h, Character.toUpperCase(sb.charAt(h)));

capitalize = false;}

h++;

}

System.out.println(sb.toString());

}}
```

Output:

The Hindu

Q10. Write a program to count no. of digits present in a string.

```
package lab.controlstms;

public class Count_Digits {

public static void main(String[] args) {

int c=0, n=1431;

while (n != 0)

{

n /= 10;

++c;

}

System.out.println("Number of digits: " + c);

}

}
```

Output:

Number of digits: 4