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Lab Assignment 2

1.Write a program to get a score from the user. Print the letter grade such as A, B C .. based on the score.

```java
import java.util.Scanner;

public class xandypower

{

public static void main(String[] args)

    {

int grade;

Scanner Input= new Scanner(System.in);

System.out.println("Enter you grade number");

grade = Input.nextInt();

if(grade>=60)

    {

    System.out.println("you passed the class");

    if(grade>=90)

      {

      System.out.println("you grade is A");

      }

      else if(grade >=80&& grade<90)

      {

         System.out.println("your grade is B");

      }

      else if (grade >=70 && grade<80)

      {

         System.out.println("your grade is C");

      }
```

```java
        else if (grade >60&& grade<70)

          {

             System.out.println("your grade is D");

          }

       }

    else

    {

       System.out.println("You failed the class");

    }

      }

}
```

Output

Enter you grade number

80

you passed the class

your grade is B

2.Write a program to find sum of n numbers starting from 1. 1+2+3+...n

```java
import java.util.Scanner;

public class xandypower

{

static Scanner Input= new Scanner(System.in);

public static void main(String[] args)

  {

  //initializing integer variable n and num

  int n, num = 0;

  System.out.println("Enter a number to find its sum from 1+2..n");
```

```java
        n= Input.nextInt();

        //loop that keeps on from 1 until n that is inputed by user

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

        {

            //adds num+i until the loop ends

            num = num+i;

        }

        System.out.println("The sum is : " + num);

    }

}
```

Output

Enter a number to find its sum from 1+2..n

5

The sum is : 15

3.Write a program to get x and y from user and print x power y using loops. Do not use functions.

```java
import java.util.Scanner;

public class xandypower

{

    public static void main(String[] args)

    {


        Scanner input= new Scanner(System.in);

        //initializing integer variable x, y and mult

        int x,y,mult=1;

        System.out.println("Enter the coefficient then the power to get the result");

        System.out.print("Enter the coefficient:");

        x = input.nextInt();
```

```java
    System.out.print("Enter the power:");

    y = input.nextInt();

    //for loop that revolts from 1 till y power that is inputed by user

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

    {

        //multiples mult*x until the loop ends

        mult = mult*x;

    }

    //result after the end of loop

    System.out.println(x+"^"+y+" is "+mult);

  }


}
```

Output:

Enter the coefficient then the power to get the result

Enter the coefficient:5

Enter the power:6

5^6 is 15625

4.Write the program using for loop to find factorial of a given number using for loop.

```java
import java.util.Scanner;

public class xandypower

{

static Scanner Input= new Scanner(System.in);

public static void main(String[] args)

  {

  //initializing variable n and fact;

  int n, fact =1;

  System.out.println("Enter a number to find its factorial");
```

```java
    //asks user to input the value for n

    n= Input.nextInt();

    //for loop that continues from 1 till n that comes from the user

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

    {

        //multiples fact*i until the loops ends

        fact= fact*i;

    }

    //prints fact that displays the factorial

    System.out.println(fact);

    }

}
```

Output:

Enter a number to find its factorial

Factorial:5

120

5.Write a program to print sum of the series below.

1!/n! + 2!/(n-1)! + 3!/(n-2)!.....n!/1!

```java
import java.util.Scanner;

public class xandypower

{

    public static void main(String[] args)

    {

        //initializing double variable n, sum and d;

        double n,sum=0,d;

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

```java
System.out.println("Enter a number that will solve the series 1!/n! + 2!/(n-1)! + 3!/(n-2)!.....n!/1!");

n= input.nextInt();

 //assigning value of n to d

d=n;

//for loop that continues from 1 to n that user inputs

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

{

    //initializing double variable fnum and fden, the value is assigned back to 1 after the loop makes another round

    double fnum=1, fden=1;

    //for loops that continues from 1 and is incremented till i

    for(double j=1; j<=i; j++)

    {

       //multiplies fnum and j that results the factorial

       fnum = fnum*j;

    }

    //for loop from 1, incremented to d

    for(double k=1; k<=d; k++)

    {

       //product of fden and k and results the factorial

       fden= fden*k;

    }

    //adds sum and the division of fnum and fden and continues till the loop ends

    sum = sum+(fnum/fden);

    //decrements d for the loop of fden

     d--;

}

//prints the result after the end of the loop

System.out.println("The sum is: " + sum);
```

```
    }


}
```

Output:

Enter a number that will solve the series 1!/n! + 2!/(n-1)! + 3!/(n-2)!.....n!/1!

3

The sum is: 7.166666666666667

6.Write a program to get a number "n" from user and print the pattern below.

1

12

123

1234..n

1234..(n-1)

....

123

12

1

```java
import java.util.Scanner;

public class printtraiangle

{

Scanner Input= new Scanner(System.in);

public static void main(String[] args)

    {


    int x;

    System.out.print("Enter a number:");
```

```java
Scanner Input= new Scanner(System.in);

int i = 0;

x = Input.nextInt();

// for loop that continues from 0 to x which is inputed by user

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

  {

  // for loop, that revolts from 1 till i

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

    {

    // prints j till the loop ends

      System.out.print(j);

    }

  //numbers start from the next line

    System.out.println();

  }

    // loop from x that is decremented till i hits 0

    for(;i>=0; i--)

      {

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

        {

          System.out.print(j);

        }

        System.out.println();

      }

  }

}
```

Output:

Enter a number:6

1

12

123

1234

12345

123456

12345

1234

123

12

1

7.Write a program to get number of seconds from user.

Convert it to time in 12 Hr and 24Hr format and print it.

 12:00:00 12 hr format

23:00:00 24 hr format

```java
import java.util.Scanner;
public class twelveandtwentyfourformat
{
   static Scanner Input = new Scanner(System.in);
public static void main(String[] args)
{
   System.out.print("Enter the seconds :");
   int sec, rec=0, hour=0, trans=0;
   sec = Input.nextInt();
     int minute;
     hour= sec/3600;
     minute = sec%3600;
```

```java
trans=minute/60;

rec=minute%60;

if(hour<=12)

{

System.out.println("12 hour format");

System.out.println(hour+":"+trans+":"+rec);

System.out.println("24 hour format");

System.out.println(hour+":"+trans+":"+rec);

}

else if(hour>12)

{

 int j=0;

  for(int i = 13; i<=hour; i++)

  {

   j= j+1;

   if(j>12)

    {

      j= j-12;

    }

  }

System.out.println("12 hour format");

System.out.println(j+":"+trans+":"+rec);

System.out.println("24 hour format");

int count=0;

for(int k = 1; k<=hour; k++)

{

 count = count+1;

 if(count>24)

 {

    count = count-24;
```

```java
        }
    }

    System.out.println(count+":"+trans+":"+rec);

    }
}
    }
```

Output:

Enter the seconds :90600

12 hour format

1:10:0

24 hour format

13:10:0