Assignment-4

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**Question 1**

**Write a program to print numbers from 1 to 10.**

**Ans:**

**import** java.util.Scanner;

**public** **class** Numbers\_1to10 {

**public** **static** **void** main(String[] args)

{

**int** number=0,start=1;

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

System.***out***.print("Enter the range of values: ");

number=input.nextInt();

**while**(start<=number) //1<=10 2<=10 3<=10.....11<=10 condition false loop terminates

{

System.***out***.println(start);

start++;//1 then 2 then 3 then 4 then 5.....11

}

}

}

**OUTPUT:**

Enter the range of values: 10

1

2

3

4

5

6

7

8

9

10

**Question 2**

**Write a program to calculate the sum of first 10 natural number.**

**Ans:**

**import** java.util.Scanner;

**public** **class** Sum\_Natural\_Numbers {

**public** **static** **void** main(String[] args)

{

**int** start=0,sum=0,number=0;

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

System.***out***.print("Enter the natural number from 1 to 10: ");

number=input.nextInt();

**while** (start<=number)

{

sum+=start;//0+1//1+2//3+3//6+4//10+5//15+6//21+7//28+8//36+9//45+10-------55

start++;//1 2 3 4 5 6 7 8 9 10 11---11<=10 condition false

}

System.***out***.println("The sum of first 10 natural numbers: "+sum);

}

}

**OUTPUT:**

Enter the natural number from 1 to 10: 10

The sum of first 10 natural numbers: 55

**Question 3**

**Write a program that prompts the user to input a positive integer. It should then print the multiplication table of that number.**

**Ans:**

**import** java.util.Scanner;

**public** **class** Multiplication\_PositiveNumber {

**public** **static** **void** main(String[] args)

{

**int** positiveNum=0,col=0,row=0,start=0;

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

System.***out***.println("enter the positive integer: ");

positiveNum=input.nextInt();

**for**(row=2;row<=positiveNum;row++) {//2<=5

**for**(col=1;col<=10;col++)

{

System.***out***.println(row+" \* "+col+" = "+col\*row);//1\*2//2\*2 //3\*2/4\*2/5\*2/6\*2/7\*2/8\*2/9\*2/10\*2

}

System.***out***.println("\n------Next Tables-----\n");

}

}

}

enter the positive integer:

4

2 \* 1 = 2

2 \* 2 = 4

2 \* 3 = 6

2 \* 4 = 8

2 \* 5 = 10

2 \* 6 = 12

2 \* 7 = 14

2 \* 8 = 16

2 \* 9 = 18

2 \* 10 = 20

------Next Tables-----

3 \* 1 = 3

3 \* 2 = 6

3 \* 3 = 9

3 \* 4 = 12

3 \* 5 = 15

3 \* 6 = 18

3 \* 7 = 21

3 \* 8 = 24

3 \* 9 = 27

3 \* 10 = 30

------Next Tables-----

3 \* 2 = 6

3 \* 3 = 9

3 \* 4 = 12

3 \* 5 = 15

3 \* 6 = 18

3 \* 7 = 21

3 \* 8 = 24

3 \* 9 = 27

3 \* 10 = 30

------Next Tables-----

4 \* 1 = 4

4 \* 2 = 8

4 \* 3 = 12

4 \* 4 = 16

4 \* 5 = 20

4 \* 6 = 24

4 \* 7 = 28

4 \* 8 = 32

4 \* 9 = 36

4 \* 10 = 40

------Next Tables-----

above for loop executes the tables from 2 to user entered numbers

example if user entered as 4 mean it print 2 table 3 table then 4 th table bcoz outer for loop starts from 2 so...!**Another Method:**

**import** java.util.Scanner;//above for loop prints the table of user entered number only

**public** **class** Multiplication\_PositiveNumber {

**public** **static** **void** main(String[] args) {

**int** positiveNum=0,col=0,row=0,start=0;

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

System.***out***.println("enter the positive integer: ");

positiveNum=input.nextInt();

**for**(start=1;start<=10;start++) {

System.***out***.println(positiveNum+ " \* "+start +" = "+(positiveNum\*start));

} }}

OUTPUT:

enter the positive integer:

12

12 \* 1 = 12

12 \* 2 = 24

12 \* 3 = 36

12 \* 4 = 48

12 \* 5 = 60

12 \* 6 = 72

12 \* 7 = 84

12 \* 8 = 96

12 \* 9 = 108

12 \* 10 = 120

**Question 4**

**Write a program to find the factorial value of any number entered through the keyboard.**

**Ans:**

**import** java.util.Scanner;

**public** **class** Factorial\_Number {

**public** **static** **void** main(String[] args)

{

**int** factorial=1 ,number=0,start=1;

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

System.***out***.print("Enter the range value of the factorial number: ");

number=input.nextInt();

**while**(start<=number) //1<=5 true//2<=5 true 3<=5 4<=5 5<=5 6<=5false terminates the loop

{

factorial\*=start;//1\*1//1\*2//2\*3//6\*4//24\*5//120

start++;//2 3 4 5

}

System.***out***.println("Factorial of "+number+" is = "+factorial);

}

}

**OUTPUT:**

Enter the range value of the factorial number: 5

Factorial of 5 is = 120

Enter the range value of the factorial number: 6

Factorial of 6 is = 720

**Question 5**

**Two numbers are entered through the keyboard. Write a program to find the value of one number raised to the power of another. (Do not use Java built-in method)**

**Ans:**

**import** java.util.Scanner;

**public** **class** Power\_Finding {

**public** **static** **void** main(String[] args)

{

**int** exponent=0,base=0;

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

System.***out***.println("enter the base value: ");

base=input.nextInt();

System.***out***.println("enter the power value: ");

exponent=input.nextInt();

**long** result=1;

**while**(exponent!=0)//power value until it zero loop executes 0!=0 false

{

result\*=base;//1\*3 //3\*3 //9\*3/ 27\*3/81

exponent--; //4-- //3// 2// 1/ /0

}

System.***out***.println("power of "+base+"is "+result);

}

}

**OUTPUT**

enter the base value: 5

enter the power value: 3

power of 5is 125

enter the base value: 9

enter the power value: 3

power of 9is 729

**Question 6**

**Write a program that prompts the user to input an integer and then outputs the number with the digits reversed. For example, if the input is 12345, the output should be 54321.**

**Ans:**

**import** java.util.Scanner;

**public** **class** Reverse\_Number {

**public** **static** **void** main(String[] args)

{

**int** reverseNumber=0,number=0;

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

System.***out***.println("Enter the number which you want to reverse");//9876

number=input.nextInt();//9876

**while**(number!=0)//9876!=0 true//987!=0 true

{

reverseNumber=reverseNumber\*10;//0\*10//6\*10==60

reverseNumber+=number%10;//0+9876%10==6//60+987%10==60+7 67

number=number/10;//9876/10==987//987/10

}

System.***out***.println("reverse number: "+reverseNumber);

}

}

**OUTPUT:**

Enter the number which you want to reverse

98765

reverse number: 56789

Enter the number which you want to reverse

654321

reverse number: 123456

Enter the number which you want to reverse

12345

reverse number: 54321

**Question 7**

**Write a program that reads a set of integers, and then prints the sum of the even and odd integers.**

**Ans:**

**import** java.util.Scanner;

**public** **class** SumEvenOddNumber {

**public** **static** **void** main(String[] args){

**int** number=0,evenNum=0,oddNum=0;

String choice=**null**;

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

System.***out***.print("Enter number of integers that u want: ");

**int** range=input.nextInt();

**for**(**int** start=1;start<=range;start++)

{

System.***out***.print("Enter any number: ");

number=input.nextInt();

**if**(number%2==0)

evenNum+=number;

**else**

oddNum+=number;}

System.***out***.println("sum of even numbers: "+evenNum);

System.***out***.println("sum of odd numbers: "+oddNum);

}}

**OUTPUT:** Enter number of integers that u want: 5

Enter any number: 1

Enter any number: 9

Enter any number: 2

Enter any number: 3

Enter any number: 4

sum of even numbers: 6

sum of odd numbers: 13

**Question 8**

**Write a program that prompts the user to input a positive integer. It should then output a message indicating whether the number is a prime number.**

**Question 9**

**Write a program to calculate HCF of Two given number.**

**Ans:**

**import** java.util.Scanner;

**public** **class** TwoNumberHcf {

**public** **static** **void** main(String[] args)

{

**int** number,newNum,hcf=0;

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

System.***out***.println("Enter the number: ");

number=input.nextInt();

System.***out***.println("Enter one more number: ");

newNum=input.nextInt();

**for**(**int** start=1;start<=number||start<=newNum;start++)

{

**if** (number%start==0 && newNum%start==0)

hcf=start;

}

System.***out***.println("HCF is "+hcf);

}

}

**OUTPUT:**

Enter the number:

144

Enter one more number:

228

HCF is 12

Enter the number:

63

Enter one more number:

81

HCF is 9

**Question 10**

**Write a do-while loop that asks the user to enter two numbers. The numbers should be added and the sum displayed. The loop should ask the user whether he or she wishes to perform the operation again. If so, the loop should repeat; otherwise it should terminate.**

**Ans:**

**import** java.util.Scanner;

**public** **class** SumRepeatTwoNum {

**public** **static** **void** main(String[] args)

{

**int** num1=0,num2=0,result=0;

String choice;

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

**do**

{

System.***out***.print("Enter the number1: ");

num1=input.nextInt();

System.***out***.print("Enter the number2: ");

num2=input.nextInt();

result=result+num1+num2;

System.***out***.print("Press yes for continue and no for stop..!");

choice=input.next();

}**while**(choice.equalsIgnoreCase("yes"));

System.***out***.println("sum of the numbers: "+result);

}}

**OUTPUT**: Enter the number1: 12

Enter the number2: 23

Press yes for continue and no for stop..!yes

Enter the number1: 90

Enter the number2: 90

Press yes for continue and no for stop..!yes

Enter the number1: 100

Enter the number2: 100

Press yes for continue and no for stop..!no

sum of the numbers: 415

**Question 11**

**Write a program to enter the numbers till the user wants and at the end it should display the count of positive, negative and zeros entered.**

**Ans:**

**import** java.util.Scanner;

**public** **class** CountPositiveNegative

{

**public** **static** **void** main(String[] args)

{

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

**int** posCount=0,negCount=0,zeroCount=0;

**char** choice;

**for**(**int** start=1;start>0;start++)

{

System.***out***.print("Enter the number: ");

**int** number=input.nextInt();

**if**(number>0)

posCount++;

**else** **if**(number<0)

negCount++;

**else**

zeroCount++;

System.***out***.print("enter 1 to continue or 0 to stop..!");

choice=input.next().charAt(0);

**if**(choice=='n')

**break**;

**else** **if**(choice=='y')

**continue**;

}

System.***out***.println("positive count : "+posCount);

System.***out***.println("negative count : "+negCount);

System.***out***.println("zero count : "+zeroCount);

}

}

**OUTPUT:** Enter the number: 78

enter y to continue or n to stop..!y

Enter the number: -9

enter y to continue or n to stop..!y

Enter the number: -99

enter y to continue or n to stop..!y

Enter the number: 0

enter y to continue or n to stop..!n

positive count : 1

negative count : 2

zero count : 1

**Question 12**

**Write a program to enter the numbers till the user wants and at the end the program should display the largest and smallest numbers entered.**

**Ans:**

**import** java.util.Scanner;

**public** **class** Largest\_SmallestNum {

**public** **static** **void** main(String[] args)

{

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

**int** number;

**int** max=Integer.***MIN\_VALUE***;

**int** min=Integer.***MAX\_VALUE***;

System.***out***.println("maximum "+max);

System.***out***.println("minimum "+min);

**char** choice;

**do**

{

System.***out***.print("Enter the number: ");

number=input.nextInt();

**if**(number>max)//9>-2147483648 true

max=number;

**else** **if**(number<min)//-8<2147483647 true

min=number;

System.***out***.print("Press y for continue and n for stop..!");

choice=input.next().charAt(0);

}**while**(choice=='y'||choice=='Y');

System.***out***.println("Largest number: "+max);

System.***out***.println("Smallest number: "+min);

}

}

**OUTPUT:** maximum -2147483648

minimum 2147483647

Enter the number: 89

Press y for continue and n for stop..! y

Enter the number: 900

Press y for continue and n for stop..! y

Enter the number: -81

Press y for continue and n for stop..! y

Enter the number: 0

Press y for continue and n for stop..! n

Largest number: 900

Smallest number: -81