**Assignment 1**

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Q1 .Write a function that checks whether a given number is prime. Use a loop to test for factors, and return true or false based on the result.

package Assign1;

import java.util.\*;

public class PrimeNo {

int num=0;

boolean flag = true;

void isprime(int n) {

num=n;

if(num>1) {

if(num==2) {

flag=true;

}else {

for(int i=2; i<=num/2;i++) {

if(num%i==0) {

flag=false;

break;

}

}

}

}else {

flag=false;

}

if(flag==true) {

System.***out***.println("Number is prime number");

}else {

System.***out***.println("Number is not prime number");

}

}

public static void main(String[] args) {

PrimeNo p1=new PrimeNo();

boolean b = true;

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

do {

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

int num = sc.nextInt();

p1.isprime(num);

System.***out***.println("Do you want to continue? if yes then press true else press false");

b = sc.nextBoolean();

}while(b==true);

sc.close();

}

}

**Output-**

Enter number

1

Number is not prime number

Do you want to continue? if yes then press true else press false

true

Enter number

0

Number is not prime number

Do you want to continue? if yes then press true else press false

true

Enter number

2

Number is prime number

Do you want to continue? if yes then press true else press false

true

Enter number

3

Number is prime number

Do you want to continue? if yes then press true else press false

true

Enter number

4

Number is not prime number

Do you want to continue? if yes then press true else press false

false

Q 2 Write a function that takes a student's score as an argument and returns a letter grade based on the following scale:

* 90-100: A
* 80-89: B
* 70-79: C
* 60-69: D
* Below 60: F

Use if-else statements to determine the grade.

package Assign1;

//Write a function that takes a student's score as an argument and returns a letter grade based on the following scale:

//• 90-100: A

//• 80-89: B

//• 70-79: C

//• 60-69: D

//• Below 60: F

//Use if-else statements to determine the grade.

import java.util.Scanner;

class Grading {

int mark;

char g;

char find\_grade(int m) {

mark=m;

if(mark>90 && mark<100) {

g='A';

}else if(mark>80 && mark<=89) {

g='B';

}else if(mark>70 && mark<=79) {

g='C';

}else if(mark>60 && mark<=69) {

g='D';

}else if(mark<60) {

g='F';

}

return g;

}

}

public class Grade {

public static void main(String[] args) {

Scanner sc=new Scanner(System.in);

System.out.println("Enter marks out of 100");

int score =sc.nextInt();

Grading g1=new Grading();

char s\_grade= g1.find\_grade(score);

System.out.println("Your grade is : "+ s\_grade);

}

}

OUTPUT  
Enter marks out of 100

99

Your grade is : A

Enter marks out of 100

55

Your grade is : F

Q 3   Create a function that takes an integer and returns the sum of its digits. Use a loop to extract each digit and perform  the sum.

package Assign1;

import java.util.Scanner;

public class Sum {

int a;

int res;

int Sum\_cal() {

//num%10 =>gives last digit ;num /10=> removes last digit

while(a!=0) {

res=res+(a%10);

a=a/10;

}

return res;

}

public static void main(String[] args) {

Scanner sc= new Scanner(System.in);

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

Sum s1=new Sum();

s1.a=sc.nextInt();

int result= s1.Sum\_cal();

System.out.println("Sum of all digits is: "+result);

sc.close();

}

}

Output-

Enter number

222222

Sum of all digits is: 12

Q 4    Write a function that takes an integer n and prints the multiplication table for that number (from 1 to 10) using a loop.

package Assign1;

import java.util.Scanner;

//Write a function that takes an integer n and prints the multiplication table for that number (from 1 to 10) using a loop.

public class MultipliationTable {

int num;

void table() {

for(int i=1;i<=10;i++) {

int mul=num\*i;

System.out.println(num +" x "+i +" = "+mul);

}

}

public static void main(String[] args) {

Scanner sc= new Scanner(System.in);

System.out.println("Enter number for table :");

MultipliationTable m1=new MultipliationTable();

m1.num=sc.nextInt();

m1.table();

sc.close();

}

}

Output

Enter number for table :

9

9 x 1 = 9

9 x 2 = 18

9 x 3 = 27

9 x 4 = 36

9 x 5 = 45

9 x 6 = 54

9 x 7 = 63

9 x 8 = 72

9 x 9 = 81

9 x 10 = 90

Q 5  Write a function that takes an array of integers and returns both the maximum and minimum values using a loop. Print the results in the main program.

package Assign1;

import java.util.Scanner;

//Write a function that takes an array of integers and returns both the maximum and minimum values using a loop. Print the results in the main program.

public class MaxMin {

int len;

int[]arr;

int min() {

int min=arr[0];

for(int i=1;i<len;i++) {

if(arr[i]<min) {

min=arr[i];

}

}

return min;

}

int max() {

int max=arr[0];

for(int i=1;i<len;i++) {

if(arr[i]>max) {

max=arr[i];

}

}

return max;

}

public static void main(String[] args) {

MaxMin m1=new MaxMin();

// TODO Auto-generated method stub

Scanner sc= new Scanner(System.in);

System.out.println("Enter size of array");

m1.len=sc.nextInt();

m1.arr=new int[m1.len];

System.out.println("Enter elements of array");

for(int i=0;i<m1.len;i++) {

m1.arr[i]=sc.nextInt();

}

int mini=m1.min();

int maxi=m1.max();

System.out.println("minimum mumber of array is :"+mini +" and maximum number is :"+maxi);

}

}

Output-

Enter size of array

8

Enter elements of array

98 56 4 23 7 2 8 65

minimum mumber of array is :2 and maximum number is :98

Q 6  Write a function that takes an  10 integer  and returns the sum of all even and odd numbers

package Assign1;

import java.util.Scanner;

//Write a function that takes an 10 integer and returns the sum of all even and odd numbers

public class SumOddEven {

Scanner sc= new Scanner(System.in);

int len;

int[]arr;

void even() {

int even\_sum=0;

for(int i=0; i<len;i++) {

if(arr[i]%2==0) {

even\_sum +=arr[i];

}

}

System.out.println("even numbers sum : "+even\_sum);

}

void odd() {

int odd\_sum=0;

for(int i=0; i<len;i++) {

if(arr[i]%2!=0) {

odd\_sum +=arr[i];

}

}

System.out.println("odd numbers sum : "+odd\_sum);

}

void array\_initialize() {

for(int i=0; i<len;i++) {

arr[i]=sc.nextInt();

}

}

public static void main(String[] args) {

SumOddEven m1= new SumOddEven();

System.out.println("Enter size of array");

m1.len=m1.sc.nextInt();

m1.arr=new int[m1.len];

System.out.println("Enter elements of array");

m1.array\_initialize();

m1.even();

m1.odd();

}

}

Output-

Enter size of array

5

Enter elements of array

10 9 8 7 6

even numbers sum : 24

odd numbers sum : 16