**Assignment – 6**

**(Entry & Exit control Loops)**

**Q1.Input a number and check whether it is palindrome or not.**

**CODE**

import java.util.\*;

class A6Q1

{

public static void main(String args[])

{

Scanner sc = new Scanner(System.in);

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

int num = sc.nextInt();

int d,n=num,r=0;

while(n!=0){

d=n%10;

r=r\*10+d;

n=n/10;

}

if(num==r)

{

System.out.println(num+" is a palindrome");

}

else

{

System.out.println(num+" is not a palindrome");

}

}

}

**OUTPUT**

**To Compile : javac A6Q1.java**

**To Run : java A6Q1**

**Output : Enter the number : 15**

**15 is not a palindrome**

**Q2. Input a number and check whether it is an Armstrong number or not.**

**CODE**

import java.util.\*;

class A6Q2

{

public static void main(String args[])

{

Scanner sc = new Scanner(System.in);

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

int num = sc.nextInt();

int d,n=num,c=0,no=0;

while(n!=0)

{

d=n%10;

c++;

n=n/10;

}

n=num;

while(n!=0)

{

d=n%10;

no=no+(int)Math.pow(d,c);

n=n/10;

}

if(num==no)

{

System.out.println(num+" is a armstrong number");

}

else

{

System.out.println(num+" is not a armstrong number");

}

}

}

**OUTPUT**

**To Compile : javac A6Q2.java**

**To Run : java A6Q2**

**Output : Enter the number : 15**

**15 is not a armstrong number**

**Q3. Input a number and find all the prime factors of that number.**

**CODE**

import java.util.\*;

class A6Q3

{

public static void main(String args[])

{

Scanner sc = new Scanner(System.in);

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

int n = sc.nextInt();

int i,c=0,j,d=0,cc=0;

for(i=2;i<n;i++)

{

if(n%i==0)

{

d=0;

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

{

if(i%j==0)

{

d++;

}

}if(d==2)

{

System.out.print(i+" ");

cc++;

}

}

}

if(cc==0)

{

System.out.print("No prime factor");

}

}}

**OUTPUT**

**To Compile : javac A6Q3.java**

**To Run : java A6Q3**

**Output : Enter the number : 15**

**3 5**

**Q4.Print a Fibonacci series up to nth term.**

**CODE**

import java.util.\*;

class A6Q4

{

public static void main(String args[])

{

Scanner sc = new Scanner(System.in);

System.out.print("Enter limit : ");

int n = sc.nextInt();

int i,a=0,b=1,c;

System.out.print("0 1 ");

for(i=3;i<=n;i++)

{

c=a+b;

System.out.print(c+" ");

a=b;b=c;

}

}

}

**OUTPUT**

**To Compile : javac A6Q4.java**

**To Run: java A6Q4**

**Output : Enter limit : 5**

**0 1 1 2 3**

**Q5.Find all 4 digit numbers which satisfies the condition that, square of (First two digit + last two digit) = original number. Eg. if number is 3025 then (30+25)2 =3025.**

**CODE**

class A6Q5

{

public static void main(String args[])

{

int fh,sh,i,tc;

for(i=1000;i<=9999;i++)

{

fh=i/100;

sh=i%100;

tc=(int)Math.pow(fh+sh,2);

if(tc==i)

{

System.out.print(i+" ");

}

}

}

}

**OUTPUT**

**To Compile : javac A6Q5.java**

**To Run : java A6Q5**

**Output : 2025 3025 9801**

**Q6. Input any number and reduce it to single digit by adding all its digits repeatedly.**

**CODE**

import java.util.\*;

class A6Q6

{

public static void main(String args[])

{

Scanner sc = new Scanner(System.in);

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

int num = sc.nextInt();

int d,n=num,s=0;

do{

s=0;

while(n!=0)

{

d=n%10;

s=s+d;

n=n/10;

}n=s;

}while(n>9);

System.out.println("After operation "+n);

}

}

**OUTPUT**

**To Compile : javac A6Q6.java**

**To Run : java A6Q6**

**Output : Enter the number : 15**

**After operation 6**

**Q7. Multiply all digits of a number till a single digit is found. Zeros should be ignored from the numbers. Ex- if the number is 406, then result should be 8.**

**CODE**

import java.util.\*;

class A6Q7

{

public static void main(String args[])

{

Scanner sc = new Scanner(System.in);

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

int num = sc.nextInt();

int d,n=num,m=1;

do{

m=1;

while(n!=0)

{

d=n%10;

if(d==0)

{

n=n/10;

continue;

}

m=m\*d;

n=n/10;

}

n=m;

}while(n>9);

System.out.println("After operation "+n);

}

}

**OUTPUT**

**To Compile : javac A6Q7.java**

**To Run : java A6Q7**

**Output : Enter the number : 15**

**After operation 5**

**Q8. Find all the prime numbers in the range from m to n whose sum of digits is also a prime number.**

**CODE**

import java.util.\*;

class A6Q8

{

public static void main(String args[])

{

Scanner sc = new Scanner(System.in);

System.out.print("Enter lower limit: ");

int m = sc.nextInt();

System.out.print("Enter upper limit: ");

int n = sc.nextInt();

int i,c=0,j,d,s=0,x,y=0;

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

{

c=0;

s=0;

for(j=2;j<i;j++)

{

if(i%j==0)

c++;

}

if(c==0)

{

x=i;

while(x!=0)

{

d=x%10;

s=s+d;

x=x/10;

}

y=0;

for(j=2;j<s;j++)

{

if(s%j==0)

y++;

}

if(y==0)

{

System.out.print(i+" ");

}

}

}

}

}

**OUTPUT**

**To Compile : javac A6Q8.java**

**To Run : java A6Q8**

**Output : Enter lower limit: 5**

**Enter upper limit: 10**

**5 7**