**Loop-based Questions**

1)Print numbers from 1 to 1000.

**package** Loop;

**public** **class** Prog1 {

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

**int** i=1;

**while**(i<=1000) {

System.***out***.println("i: "+ i);

i++;

}

}

}

O/P :-

2) Print numbers from 1 to user-specified number n.

**package** Loop;

**import** java.util.Scanner;

**public** **class** Prog2 {

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

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

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

**int** n=sc.nextInt();

**int** i=1;

**while**(i<=n)

{

System.***out***.println("i: "+i);

i++;

}

}

}

O/P :-

Enter your number : 5

i: 1

i: 2

i: 3

i: 4

i: 5

3) Print numbers from 100 to 5000, incrementing by 50.

**package** Loop;

**import** java.util.Scanner;

**public** **class** Prog3 {

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

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

System.***out***.print("Enter your Start: ");

**int** i=sc.nextInt();

System.***out***.print("Enter your end : ");

**int** n=sc.nextInt();

**while**(i<=n) {

System.***out***.println("i :"+i);

i+=50;

}

}

}

O/P :-

Enter your Start: 100

Enter your end : 5000

i :100

i :150

i :200

i :250

i :300

i :350

i :400

i :450

i :500

i :550

i :600

i :650

i :700

i :750

i :800

i :850

i :900

i :950

i :1000

i :1050

i :1100

i :1150

i :1200

i :1250

i :1300

i :1350

i :1400

i :1450

i :1500

i :1550

i :1600

i :1650

i :1700

i :1750

i :1800

i :1850

i :1900

i :1950

i :2000

i :2050

i :2100

i :2150

i :2200

i :2250

i :2300

i :2350

i :2400

i :2450

i :2500

i :2550

i :2600

i :2650

i :2700

i :2750

i :2800

i :2850

i :2900

i :2950

i :3000

i :3050

i :3100

i :3150

i :3200

i :3250

i :3300

i :3350

i :3400

i :3450

i :3500

i :3550

i :3600

i :3650

i :3700

i :3750

i :3800

i :3850

i :3900

i :3950

i :4000

i :4050

i :4100

i :4150

i :4200

i :4250

i :4300

i :4350

i :4400

i :4450

i :4500

i :4550

i :4600

i :4650

i :4700

i :4750

i :4800

i :4850

i :4900

i :4950

i :5000

4) Print numbers from 100 to 1 in descending order.

**package** Loop;

**import** java.util.Scanner;

**public** **class** Prog4 {

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

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

System.***out***.print("Enter your start: ");

**int** i=sc.nextInt();

System.***out***.print("Enter your end: ");

**int** n=sc.nextInt();

**while**(i>=n) {

System.***out***.println("i :"+i);

i--;

}

}

}

O/P :-

Enter your start: 100

Enter your end: 1

i :100

i :99

i :98

i :97

i :96

i :95

i :94

i :93

i :92

i :91

i :90

i :89

i :88

i :87

i :86

i :85

i :84

i :83

i :82

i :81

i :80

i :79

i :78

i :77

i :76

i :75

i :74

i :73

i :72

i :71

i :70

i :69

i :68

i :67

i :66

i :65

i :64

i :63

i :62

i :61

i :60

i :59

i :58

i :57

i :56

i :55

i :54

i :53

i :52

i :51

i :50

i :49

i :48

i :47

i :46

i :45

i :44

i :43

i :42

i :41

i :40

i :39

i :38

i :37

i :36

i :35

i :34

i :33

i :32

i :31

i :30

i :29

i :28

i :27

i :26

i :25

i :24

i :23

i :22

i :21

i :20

i :19

i :18

i :17

i :16

i :15

i :14

i :13

i :12

i :11

i :10

i :9

i :8

i :7

i :6

i :5

i :4

i :3

i :2

i :1

5) Print numbers from 1000 to 100, decrementing by 80.

**package** Loop;

**import** java.util.Scanner;

**public** **class** Prog5 {

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

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

System.***out***.print("Enter your start: ");

**int** i=sc.nextInt();

System.***out***.print("Enter your end: ");

**int** n=sc.nextInt();

**while**(i>=n) {

System.***out***.println("i :" +i);

i-=80;

}

}

}

O/P :-

Enter your start: 1000

Enter your end: 100

i :1000

i :920

i :840

i :760

i :680

i :600

i :520

i :440

i :360

i :280

i :200

i :120

6) Print first n even numbers.

**package** Loop;

**import** java.util.Scanner;

**public** **class** Prog6 {

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

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

System.***out***.print("Enter your start: ");

**int** i=sc.nextInt();

System.***out***.print("Enter your end: ");

**int** n=sc.nextInt();

**while**(i<=n) {

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

System.***out***.println("i :"+i);

i++;

}

}

}

O/P :-

Enter your start: 1

Enter your end: 20

i :2

i :4

i :6

i :8

i :10

i :12

i :14

i :16

i :18

i :20

7) Print first n odd numbers.

**package** Loop;

**import** java.util.Scanner;

**public** **class** Prog7 {

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

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

System.***out***.print("Enter your start: ");

**int** i=sc.nextInt();

System.***out***.print("Enter your end: ");

**int** n=sc.nextInt();

i=1;

**while**(i<=n) {

**if**(i % 2 != 0) {

System.***out***.println("i "+i);

}

i++;

}

}

}

O/P :-

Enter your start: 1

Enter your end: 20

i 1

i 3

i 5

i 7

i 9

i 11

i 13

i 15

i 17

i 19

8) Print "Welcome" message n times.

**package** Loop;

**import** java.util.Scanner;

**public** **class** Prog8 {

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

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

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

**int** n=sc.nextInt();

**int** count=0;

**while**(count<n) {

System.***out***.println("Welcome");

count++;

}

}

}

O/P :-

Enter the number: 5

Welcome

Welcome

Welcome

Welcome

Welcome

9) Accept a number n from the user and display the sum of numbers up to n.

**package** Loop;

**import** java.util.Scanner;

**public** **class** Prog9 {

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

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

System.***out***.print("Enter your start: ");

**int** i=sc.nextInt();

System.***out***.print("Enter your end: ");

**int** n=sc.nextInt();

**int** sum=0;

**while**(i<=n) {

sum+=i;

i++;

}

System.***out***.println("Sum: "+ sum);

}

}

O/P :-

Enter your start: 2

Enter your end: 20

Sum: 209

10) Accept a number n from the user and display the sum of even numbers up to n.

**package** Loop;

**import** java.util.Scanner;

**public** **class** Prog10 {

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

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

System.***out***.print("Enter your start: ");

**int** i=sc.nextInt();

System.***out***.print("Enter your end: ");

**int** n=sc.nextInt();

**int** sum=0;

**while**(i<=n) {

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

{

sum+=i;

}

i++;

}

System.***out***.println("Sum "+ sum);

}

}

O/P :-

Enter your start: 2

Enter your end: 12

Sum 42

11) Accept a number n from the user and display the sum of odd numbers up to n.

**package** Loop;

**import** java.util.Scanner;

**public** **class** Prog11 {

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

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

System.***out***.print("Enter your start: ");

**int** i=sc.nextInt();

System.***out***.print("Enter your end: ");

**int** n=sc.nextInt();

**int** sum=0;

i=1;

**while**(i<=n) {

**if**(i % 2!= 0)

{

sum+=i;

}

i++;

}

System.***out***.println("Sum "+ sum);

}

}

O/P :-

Enter your start: 1

Enter your end: 15

Sum 64

12) Accept two numbers n and mmm from the user and print the sum of numbers between n and m.

**package** Loop;

**import** java.util.Scanner;

**public** **class** Prog12 {

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

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

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

**int** n=sc.nextInt();

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

**int** m=sc.nextInt();

**int** sum=0;

**int** i=n;

**while**(i<=m) {

sum+=i;

i++;

System.***out***.println("Sum of number between" + n +" and "+ m + " = " +sum );

}

}

}

O/P :-

Enter the N: 4

Enter the M: 12

Sum of number between4 and 12 = 4

Sum of number between4 and 12 = 9

Sum of number between4 and 12 = 15

Sum of number between4 and 12 = 22

Sum of number between4 and 12 = 30

Sum of number between4 and 12 = 39

Sum of number between4 and 12 = 49

Sum of number between4 and 12 = 60

Sum of number between4 and 12 = 72

13) Print the multiplication table of a number using the \* operator.

**package** Loop;

**import** java.util.Scanner;

**public** **class** Prog13 {

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

{

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

**int** i=1;

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

**int** n=sc.nextInt();

**while**(i<=10) {

System.***out***.println(i\*n);

i++;

}

}

}

O/P :-

Enter your number: 4

4

8

12

16

20

24

28

32

36

40

14) Print the multiplication table of a number without using the \* operator.

**package** Loop;

**import** java.util.Scanner;

**public** **class** Prog14 {

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

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

**int** i=1;

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

**int** n=sc.nextInt();

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

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

**int** j=0,result=0;

**while**(i<=range) {

**while**(j<i)

{

result +=n;

j++;

}

System.***out***.println(n+ " X "+ i + " = "+ result);

i++;

}

}

}

O/P :-

Enter your number: 5

Enter the range: 5

5 X 1 = 5

5 X 2 = 10

5 X 3 = 15

5 X 4 = 20

5 X 5 = 25

15) Calculate the factorial of a given number n.

**package** Loop;

**import** java.util.Scanner;

**public** **class** Prog15 {

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

{

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

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

**int** n=sc.nextInt();

**int** i=n;

**int** fact=1;

**while**(i>1) {

fact\*=i;

i--;

}

System.***out***.println("Factorial of "+n+ " is "+fact);

}

}

O/P :-

Enter your number: 5

Factorial of 5 is 120

16) Compute the power of a number m^n

**package** Loop;

**import** java.util.Scanner;

**public** **class** Prog16 {

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

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

System.***out***.print("Enter base : ");

**int** m=sc.nextInt();

System.***out***.print("Enter exponent : ");

**int** n=sc.nextInt();

**int** i=0;

**long** result=1;

**while**(i<n) {

result \*=m;

i++;

}

System.***out***.println(m + " raised to the Power " + n + " is: " +result);

}

}

O/P :-

Enter base : 2

Enter exponent : 6

2 raised to the Power 6 is: 64

17) Accept a character and a range n, then display the next n characters.

**package** Loop;

**import** java.util.Scanner;

**public** **class** Prog17 {

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

{

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

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

**int** n=sc.nextInt();

System.***out***.print("Enter your Character: ");

**char** ch=sc.next().charAt(0);

**int** start=(**int**) ch;

**int** end =start + n;

**while**(start <= end)

{

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

start ++;

}

}

}

O/P :-

Enter your number: 6

Enter your Character: T

T

U

V

W

X

Y

Z

18) Accept a number and display its factors.

**package** Loop;

**import** java.util.Scanner;

**public** **class** Prog18 {

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

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

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

**int** n=sc.nextInt();

**int** i=1;

**while**(i<=n) {

**if**(n%i ==0) {

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

}

i++;

}

}

}

O/P :-

Enter the number: 6

1

2

3

6

19) Accept a number and check if it is prime.

**package** Loop;

**import** java.util.Scanner;

**public** **class** Prog19 {

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

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

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

**int** n=sc.nextInt();

**boolean** isPrime=**true**;

**int** i=2;

**while**(i < n) {

**if**(n% i == 0)

{

isPrime=**false**;

**break**;

}

i++;

}

**if**(isPrime) {

System.***out***.println(n + " is Prime number");

} **else** {

System.***out***.println(n + " is Not Prime number");

}

}

}

O/P :-

Enter the number: 234

234 is Not Prime number

20) Accept a number and check if it is a perfect number.

**package** Loop;

**import** java.util.Scanner;

**public** **class** Prog20 {

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

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

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

**int** n=sc.nextInt();

**int** num=n;

**int** sum=0;

**int** i=1;

**while**(i < n) {

**if**(n% i == 0)

{

sum +=i;

}

i++;

}

**if**(num==sum) {

System.***out***.println(n + " is Perfect");

} **else** {

System.***out***.println(n + " is Perfect Not");

}

}

}

O/P :-

Enter your number: 28

28 is Perfect