

## **Looping Exercises:**

### **Question 1**

Write a program to print numbers from 1 to 10.

### **Question 2**

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

### **Question 3**

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

### **Question 4**

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

### **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)

### **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.

### **Question 7**

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

### **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.

**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.

**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.

**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.

**Question 13**

Write a program to print out all Armstrong numbers between 1 and 500. If sum of cubes of each digit of the number is equal to the number itself, then the number is called an Armstrong number.

For example,  $153 = (1 * 1 * 1) + (5 * 5 * 5) + (3 * 3 * 3)$

**Question 14**

Write a program to print Fibonacci series of n terms where n is input by user :

0 1 1 2 3 5 8 13 24 .....

**Question 15**

Write a program to calculate the sum of following series where n is input by user.

$1 + 1/2 + 1/3 + 1/4 + 1/5 + \dots + 1/n$

**Question 16**

Compute the natural logarithm of 2, by adding up to n terms in the series  
 $1 - 1/2 + 1/3 - 1/4 + 1/5 - \dots 1/n$   
 where n is a positive integer and input by user.

### Question 17

Write a program that generates a random number and asks the user to guess what the number is. If the user's guess is higher than the random number, the program should display "Too high, try again." If the user's guess is lower than the random number, the program should display "Too low, try again." The program should use a loop that repeats until the user correctly guesses the random number.

### Question 18

Write a program to print following :

i) *****ii)*	iii) *	
***** **	**	
***** ***	***	
***** ****	****	
***** *****	*****	
	*****	
iv) *	v) 1	vi) 1
***	222	212
*****	33333	32123
*****	4444444	4321234
*****	555555555	543212345
*****		

### Question 19

Write a program to compute  $\sin x$  for given x. The user should supply x and a positive integer n. We compute the sine of x using the series and the computation should use all terms in the series up through the term involving  $x^n$

$$\sin x = x - x^3/3! + x^5/5! - x^7/7! + x^9/9! - \dots$$

### Question 20

Write a program to compute the cosine of x. The user should supply x and a positive integer n. We compute the cosine of x using the series and the

computation should use all terms in the series up through the term involving  $x^n$

$$\cos x = 1 - x^2/2! + x^4/4! - x^6/6! \dots$$