

## (CL1002) Programming Fundamentals Lab

### Lab 8 Task:

- Before doing the task, I recommend you all to go through the lab manual. It will make it easy for you all to understand this.
- Copied task will be awarded **zero** marks.
- Upload only a MS word and PDF file including all tasks source code and its output (screen shot).
- You have to copy the source code in your word file. Don't take the screen shot of source code.
- Use the following format for naming the word file Rollno\_name (21P-1234\_zain).
- Comments your Code Properly

1. Write a Program to Calculate Permutation( $nPr$ ) for given values of  $n$  and  $r$   
The  **$nPr$**  (permutation) formula is:

$$P(n, r) = \frac{n!}{(n - r)!}$$

#### Sample Output:

```
Enter the value for n 5
Enter the value for r 4
npr for n= 5 and r= 4 is 120
```

2. Write a program that accepts an integer and displays its factors. For example, if the user enters 12, the program should display 2, 3, 4 and 6.
3. Find the sum of the first 10 numbers that are divisible by 3 and 9.

#### Sample Output

```
495
```

4. In Fibonacci series, every new term is generated by adding the previous two terms as shown below. Write a program that displays Fibonacci series between 0 to user input range.

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

**Sample Output:**

```
How many term 15
0
1
1
2
3
5
8
13
21
34
55
89
144
233
377
```

5. Write a program that performs a survey tally on beverages. The program should prompt for the next person until a sentinel value of -1 is entered to terminate the program. Each person participating in the survey should choose their favorite beverage from the following list:

1. Coffee	2. Tea	3. Coke	4. Orange Juice
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**Sample Output:**

```

Choose your favorite beverage from the following list
1.Coffee  2.Tea  3.Coke  4.Orange Juice
Please input the favorite beverage of person #1 Choose 1,2,3,or 4 from the above menu or -1 to exit the program
4
Please input the favorite beverage of person #2 Choose 1,2,3,or 4 from the above menu or -1 to exit the program
4
Please input the favorite beverage of person #3 Choose 1,2,3,or 4 from the above menu or -1 to exit the program
1
Please input the favorite beverage of person #4 Choose 1,2,3,or 4 from the above menu or -1 to exit the program
1
Please input the favorite beverage of person #5 Choose 1,2,3,or 4 from the above menu or -1 to exit the program
4
Please input the favorite beverage of person #6 Choose 1,2,3,or 4 from the above menu or -1 to exit the program
2
Please input the favorite beverage of person #7 Choose 1,2,3,or 4 from the above menu or -1 to exit the program
-1
Beverage          Number of Votes
*****
Coffee             2
Tea                1
Coke               0
Juice              3

```

### Additional Task (Not Graded)

6. Write a program that takes two numbers from the user and displays all prime numbers between them. For example, if the user enters 5 and 15, your program should display 5, 7, 11, 13.