

## Lab Task Week 10

### Note:

- Plagiarized tasks will be awarded zero marks.
  - There will be deduction for late submission.
  - Use meaningful variable names instead of a, b, c, x, y, z.
  - Use proper indentation.
  - Your programs should satisfy all the requirements mentioned in the description or discussed in lab.
1. Write a program using nested if else that asks a user whether he/she wants burger. If the user enters Y or y. Then the program should further ask whether the user wants an add-on of fries and cold drink for 200 Rs only. Calculate and display the total price accordingly. Price of Burger is 500.

**Note:** Validate your input. If the user enters anything other than Y, y, n or N. The program should display the message “Invalid Input”.

```
C:\Users\hy\Desktop\C Programs\burger_bill.exe

Do you want a burger? Y/N
Y

Burger added
do you want a fries and drink as addon? Just for 200 Rs Y/N
N

Your choice!Thank you
Your total Bill is: 300
```

```
C:\Users\hy\Desktop\C Programs\burger_bill.exe

Do you want a burger? Y/N
Y

Burger added
do you want a fries and drink as addon? Just for 200 Rs Y/N
Y

Thank you
Your total Bill is: 500
-----
```

```
C:\Users\hy\Desktop\C Programs\burger_bill.exe

Do you want a burger? Y/N
N

No problem. See you next time
```

2. Write a C program to check whether an alphabet is a vowel or consonant. Your program should ask the user to input an alphabet.

**Note:** use switch case

3. Write a Program in C that contains two functions to Calculate Combination( ${}^nC_r$ ) for given values of n and r.

- The program should take the value of n and r from the user in main.
- The function `n_c_r()` should take n and r as input parameters.
- Your program should have a function for simply calculating the factorial using recursion.
- Your program should have another function which will return the  ${}^nC_r$  for the given values of n and r. The function will calculate Combination  ${}^nC_r$  and return it to main. Whenever this function needs to calculate the factorial, it will call the factorial function and from there it will get the factorial of that no.
- The program should print value of  ${}^nC_r$  in main.

For your understanding the prototypes of two functions are given below.

**`int fact(int n); // uses recursion`**

**`int n_c_r(int n, int r); // simple function`**

The  ${}^nC_r$  (combination) formula is:

$${}^nC_r = \frac{n!}{r! (n - r)!}$$

4. The TCS Shipping Company charges the following rates:

Weight of Package (in Kilograms)	Rate per 500 Miles Shipped
2 kg or less	\$1.10
Over 2 kg but not more than 6 kg	\$2.20
Over 6 kg but not more than 10 kg	\$3.70
Over 10 kg but not more than 20 kg	\$4.80

Write a program that asks for the weight of the package and the distance it is to be shipped, and then displays the charges. Input Validation: Do not accept values of 0 or less for the weight of the package. Do not accept weights of more than 20 kg (this is the maximum weight the company will ship). Do not accept distances of less than 10 miles or more than 3,000 miles. These are the company's minimum and maximum shipping distances.

```
C:\Users\hy\Desktop\C Programs\shipping_rates.exe
Enter the weight of the package in Kg: 10
Enter the distance to ship in miles: 200

Thank you
Total charges: 1.480$
```

```
C:\Users\hy\Desktop\C Programs\shipping_rates.exe
Enter the weight of the package in Kg: 10
Enter the distance to ship in miles: 9

Sorry TCS does not deliver to such distances
-----
```

```
C:\Users\hy\Desktop\C Programs\shipping_rates.exe
Enter the weight of the package in Kg: 21

Sorry weight cannot be negative, zero or greater than 20 kg
-----
```