ITC LAB #07 CS (A)
LAB TASK

1. Write a program that uses while loops to perform the following steps:
    1. Output all odd numbers between firstNum and secondNum.
    2. Output the sum of all even numbers between firstNum and secondNum.
    3. Output the numbers and their squares between 1 and 10.
    4. Output the sum of the square of the odd numbers between firstNum and secondNum

2. Number Guessing Game

   Program randomly generates an integer greater than or equal to 0 and less than 100. The program then prompts the user to guess the number. If the user guesses the number correctly, the program outputs an appropriate message and exit. Otherwise, the program checks whether the guessed number is less than the random number. If the guessed number is less than the random number generated by the program, the program outputs the message ‘‘Your guess is lower than the number. Do you want to try again?’’; otherwise, the program outputs the message ‘‘Your guess is higher than the number. Do you want to try again?’’. The program then prompts the user to enter another number if user presses “y” or “yes”. The user is prompted to guess the random number until the user enters the correct number or user press “no”.

```
#include <cstdlib>
#include <ctime>
int main()
{
int i;
/* generate secret number between 1 and 10: */
srand(time(NULL));
i= rand() % 10 ;
cout << i <<endl;
}
```

3. Suppose you want to read some positive integers and average them, but you do not have a preset number of data items in mind. Suppose the number -999 marks the end of the data.
   Write a c++ program for the above program
   Sample Run:
   Enter integers ending with -999
   34 23 9 45 78 0 77 8 3 5 -999
   The sum of the 10 numbers is 282
   The average is 28

4. Write a C program to find all Perfect numbers between 1 to n. C program to find all perfect numbers between given range. How to generate all perfect numbers between given interval using loop

   Perfect number is a positive integer which is equal to the sum of it's proper positive divisors.

   For example: 6 is the first perfect number
   Proper divisors of 6 are 1, 2, 3
   Sum of its proper divisors = 1 + 2 + 3 = 6.
   Hence 6 is a perfect number.

5. bill for a cellular telephone Comapny

Write a program that calculates and prints the bill for a cellular telephone company. The company offers two types of service: regular and premium. Its rates vary, depending on the type of service. The rates are computed as follows:

Regular service: $10.00 plus first 50 minutes are free. Charges for over 50 minutes are $0.20 per minute.

Premium service: $25.00 plus:
a. For calls made from 6:00 a.m. to 6:00 p.m., the first 75 minutes are free; charges for more than 75 minutes are $0.10 per minute.
b. For calls made from 6:00 p.m. to 6:00 a.m., the first 100 minutes are free; charges for more than 100 minutes are $0.05 per minute.

Your program should prompt the user to enter an account number, a service code (type char), and the number of minutes the service was used. A service code of r or R means regular service; a service code of p or P means premium service. Treat any other character as an error. Your program should output the account number, type of service, number of minutes the telephone service was used, and the amount due from the user.
For the premium service, the customer may be using the service during the day and the night. Therefore, to calculate the bill, you must ask the user to input the number of minutes the service was used during the day and the number of minutes the service was used during the night.