

ITC LAB #11 CS (A)

LAB TASK

1. Write a function that rolls a pair of dice until the sum of the numbers rolled is a specific number. We also want to know the number of times the dice are rolled to get the desired sum.

The smallest number on each die is 1, and the largest number is 6. So the smallest sum of the numbers rolled is 2, and the largest sum of the numbers rolled is 12.

To generate a random number use: `rand() % 6 + 1;`

2. Modify the Task1(roll dice program) so that it allows the user to enter the desired sum of the numbers to be rolled. Also allow the user to call the rollDice function as many times as the user desires.
3. Write the definition of a function that takes as input the three numbers. The function returns true if the first number to the power of the second number equals the third number; otherwise, it returns false. (Assume that the three numbers are of type double.)
4. Write a value-returning function, isVowel, that returns the value true if a given character is a vowel and otherwise returns false
5. Modify the task 4 Write a program that prompts the user to input a sequence of characters and outputs the number of vowels.
6. When you borrow money to buy a house, a car, or for some other purposes, then you typically repay it by making periodic payments. Suppose that the loan amount is L , r is the interest rate per year, m is the number of payments in a year, and the loan is for t years. Suppose that $i = \frac{r}{m}$ and r is in decimal. Then the periodic payment is:

$$R = \frac{Li}{1 - (1 + i)^{-mt}},$$

You can also calculate the unpaid loan balance after making certain payments.

For example, the unpaid balance after making k payments is:

$$L' = R \left[\frac{1 - (1 + i)^{-(mt-k)}}{i} \right],$$

where R is the periodic payment. (Note that if the payments are monthly, then $m \approx 12$.) Write a program that prompts the user to input the values of L, r, m, t, and k. The program then outputs the appropriate values. Your program must contain at least two functions, with appropriate parameters, to calculate the periodic payments and the unpaid balance after certain payments. Make the program menu driven and use a loop so that the user can repeat the program for different values.