ASSIGNMENT # 2

1. **Count Alphabets, Numbers and Special Characters**
   Write a Rust program that accepts a string and calculate the number of digits and letters
   Program Console Sample 1:
   Enter text: Rust 3.2
   Numbers = 2
   Alphabets = 6
   Special Characters = 1
   Spaces = 1

2. **Write a Rust program to construct the following pattern**

3. **Adding Values in a Loop**
   Write a program that gets several integers from the user.
   Sum up all the integers they give you. Stop looping when they enter a 0.
   Display the total at the end.
   Program Console Sample 1:
   I will add up the numbers you give me.
   Number: 6
   The total so far is 6
   Number: 9
   The total so far is 15
   Number: -3
   The total so far is 12
   Number: 2
   The total so far is 14
   Number: 0
   The total is 14.

4. **Days Calculator**
   Write a Rust program to calculate number of days between two dates
   Program Console Output:
   Enter a date in (dd/mm/yy) format: 12/12/2018
   Enter a date in (dd/mm/yy) format: 16/12/2018
   There are 4 days in between 12/12/2018 and 16/12/18
   Reference:
   https://crates.io/crates/chrono

5. **Hi-Lo with Limited Tries**
   Write a program that picks a random number from 1-100. The user keeps guessing as long as their guess is wrong, and they've guessed less than 7 times. If their guess is higher than the number, say "Too high." If their guess is lower than the number, say "Too low." When they get it right, the game stops. Or, if they hit seven guesses, the game stops even if they never got it right.
   Program Console Sample 1:
   I'm thinking of a number between 1-100. You have 7 guesses.
   First guess: 50
   Sorry, you are too low.
   Guess # 2: 75
   Sorry, you are too low.
   Guess # 3: 87
   Sorry, that guess is too high.
   Guess # 4: 82
   Sorry, you are too low.
   Guess # 5: 84
   You guessed it! What are the odds?!?

Project Calculator

Write a calculator program. A minimal calculator will support the following functions:

1. numbers with decimals (not just integers)
2. addition (1 + 2 is 3)
3. subtraction (12 - 4 is 8)
4. multiplication (33 * 2 is 66)
5. division (3 / 8 is 0.375)
6. exponents (2 ^ 3 is 8)
7. error messages when you do something wrong

Your calculator should keep on running until explicitly told to quit. I suggest typing a zero as the first operand to cause it to quit, i.e.

Program Console Sample:
>2 + 3
5
>4 * 9
36
>0 + 2
Bye, now.

Hint:
Well, if you read in everything as a String, then you can convert to other things.

What to avoid:
Any program, which presents me with a screen like the following, will not receive a very good score.
Program Console Sample:
Enter the function you wish to perform.
1) addition
2) subtraction
3) multiplication
4) division
5) quit
Your choice:
Also, the same fate applies to any program that ever presents me with the following message:
Would you like to calculate again? (y/n)
Finally, you may use the built-in function in order to compute powers, but those that write their own will receive a
much higher score.