Exercise Questions

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#### Variable Questions

1. Declare a variable of type 'int' called 'age' and initialize it with the value 25. Display the value of this variable on the console.
2. Declare a variable of type 'double' called 'price' and initialize it with the value 9.99. Display the value of this variable on the console.
3. Declare a variable of type 'string' called 'name' and initialize it with your name. Display the value of this variable on the console.
4. Declare a variable of type 'bool' called 'isRaining' and initialize it to true. Display the value of this variable on the console.
5. Declare a variable of type 'char' called 'grade' and initialize it with the value 'A'. Display the value of this variable on the console.
6. Declare two variables of type 'int' called 'num1' and 'num2', and initialize them with different values. Use the '+' operator to add these two numbers and display the result on the console.
7. Declare a variable of type 'double' called 'temperature' and initialize it with a value. Write an 'if' statement that displays a message on the console if the temperature is above a certain value (e.g. "It's too hot!").
8. Declare a variable of type 'string' called 'input' and initialize it with some text. Use the 'Length' property to display the number of characters in the string on the console.
9. Declare a variable of type 'bool' called 'hasPassed' and initialize it to true. Write an 'if' statement that displays a message on the console if the value of 'has passed' is false (e.g. "You need to study harder!").
10. Declare a variable of type 'string' called 'fullName' and initialize it with your full name. Use the 'Substring' method to display only your first name on the console.
11. Declare two integer variables and initialize them to different values. Then, using a combination of operators (e.g. +, -, \*, /), perform the following operations and print the results:
    1. Addition
    2. Subtraction
    3. Multiplication
    4. Division
    5. Modulus
    6. Increment
    7. Decrement
12. Declare a string variable and initialize it to a sentence that contains at least 5 words. Then, using string concatenation (i.e. + operator), create a new string that includes only the first 3 words of the original sentence. Print the new string.
13. Declare a boolean variable and initialize it to true. Then, using boolean operators (e.g. &&, ||, !), create the following logical expressions and print the results:
    1. true && true
    2. true || false
    3. !(true && false)
    4. (true || false) && true
14. Declare two variables of different data types and initialize them to values of your choice. Then, using type casting operators (e.g. (int), (double), (float)), perform the following operations and print the results:
    1. Convert one variable to the data type of the other variable and perform addition
    2. Convert one variable to the data type of the other variable and perform multiplication

#### —------------------------------------------------------------------------------------------------------------------ IF Statements

1. Write a program that prompts the user to enter a number and then displays whether the number is positive or negative.
2. Write a program that prompts the user to enter an integer and then checks whether it is even or odd.
3. Write a program that prompts the user to enter a character and then checks whether it is a vowel or a consonant.
4. Write a program that prompts the user to enter their age and then checks whether they are eligible to vote.
5. Write a program that prompts the user to enter two integers and then displays the larger of the two.
6. Write a program that prompts the user to enter three integers and then displays the largest of the three.
7. Write a program that prompts the user to enter a year and then checks whether it is a leap year.
8. Write a program that prompts the user to enter their exam score and then displays their grade based on the following table:

| Score Range | Grade |
| --- | --- |
| 90-100 | A |
| 80-89 | B |
| 70-79 | C |
| 60-69 | D |
| 0-59 | F |

1. Write a program that prompts the user to enter a temperature in Celsius and then converts it to Fahrenheit.
2. Write a program that prompts the user to enter a month and year and then displays the number of days in that month.

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##### Loops

##### Write a program that prints all even numbers from 1 to 100 using a for loop.

1. Write a program that prints the multiplication table of a given number using a while loop.
2. Write a program that prompts the user for a number and calculates it's factorial using a do-while loop.
3. Write a program that prompts the user for a number and checks if it is prime using a for loop.
4. Write a program that prompts the user for a string and prints out each character in reverse order using a for loop.
5. Write a program that calculates the sum of all odd numbers between 1 and 100 using a for loop.
6. Write a program that prompts the user for a number and checks if it is a palindrome using a while loop.
7. Write a program that uses a for loop and prints out the even numbers from 0 - 40 number.
8. Write a program that prompts the user for a number and prints out all of its divisors using a for loop.

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##### Functions

##### Write a function called "Addition" that takes two integer parameters and returns their sum.

1. Write a function called "Subtraction" that takes two integer parameters and returns their difference.
2. Write a function called "Multiplication" that takes two integer parameters and returns their product.
3. Write a function called "Division" that takes two integer parameters and returns their quotient as a double.
4. Write a function called "Greeting" that takes a string parameter representing a name and returns a string greeting that says "Hello, [name]!".
5. Write a function called "IsEven" that takes an integer parameter and returns true if the number is even and false if it is odd.
6. Write a function called "GetMax" that takes two integer parameters and returns the larger of the two.
7. Write a function called "GetMin" that takes two integer parameters and returns the smaller of the two.