# PE3 – Variables and Expressions

**Due Wednesday 31-Aug-2022 by 11:59pm**

1. In the following code, how would we refer to the name great from code in the namespace fabulous?

namespace fabulous

{

// code in fabulous namespace

}

namespace super

{

namespace smashing

{

// great name defined

}

}

super.smashing.great

1. Which of the following are not legal variable names. Why?

myVariableIsGood 99Flake Does not start with a letter

iLike#Tags Contains a special character

\_floor Does not start with a letter

rit\_tigers

time2GetJiggyWidIt

$bankBalance Does not start with a letter

Factorial! Contains a special character

MAX\_SIZE

black&white Contains a special character

1. Is the string "supercalifragilisticexpialidocious" too big to fit in a string variable? Why?

No, it is not too big, because a string can hold 32 bits.

1. By considering operator precedence, list the steps involved in the computation of the following expression:

resultVar += var1 \* var2 + var3 % var4 / var5;

Multiply var1 by var2

var3 Mod var4

(var3 Mod var4) divided by var5

(var1 times var2) plus ((var3 mod var4) divided by 5))

Add total to resultVarCo

1. Write a console application that obtains four int values from the user and displays the product. Hint: you may recall that the Convert.ToDouble() command was used to covert the input from the console to a double; the equivalent command to convert from a string to an int is Convert.ToInt32().

Enter the URL for your GitHub project here: <https://github.com/ndw1117/myIGME-201/tree/main/Will_PE3_Variables_And_Expressions>

1. *Define the following terms.*

compiler: A part of the .NET framework. Compiles/converts code into native code (code that the operating system understands).

identifier: Uniquely identify an element.

primitive data type: A basic data type from which other data types are constructed.

class: A user-defined blueprint that is used to create objects. Combines fields and methods into a single unit.

constant: A variable who’s value never changes.

parsing: The action of converting a string to an enumeration value.

1. *Evaluate the following expressions using the C# order of precedence.*
2. 19 % 5 Result: 4
3. 13 / 4 Result: 3
4. 100 % 20 – 10 Result: -10
5. 5 + 7 \* 2 – 2 Result: 17
6. (6 / 4.0 + 3.5) / 2 Result: 2.5
7. What are the values for num1, num2, and num3 after the following code is executed? (Hint: Pay attention to data types.)

int num1 = 2;

int num2 = 4;

int num3 = 5;

num1 = num1 \* num3;

num2 = num1 / num2;

num3 = num3 % num2;

The final value of num1 = 10

The final value of num2 = 2

The final value of num3 = 1

1. The following line of code doesn’t compile:

int amountOfMoney = "3.50";

a. What is wrong with the code?

amountOfMoney is declared as an int value but it is being set equal to a String value. Also, the number represented in the String would not be an integer.

b. What is one way you could fix it, and why would you fix it that way?

I could fix it by getting rid of the quotation marks and declaring amountOfMoney as a double. That way the given number can be compiled as a proper data type.

1. Which of the following are *not* *smartly* *named* C# variable identifiers? Why?

a. qb Not smart because it doesn’t give enough information to identify.

b. totalValue

c. theNextValueInTheList Not smart because it is too long.

d. player1Score

1. Categorize each of the following errors as either: compile-time error, run-time error, or logical error.

a. Multiplying 2 numbers when you meant to add them Logical Error

b. Dividing by zero Run-Time Error

c. Forgetting a semicolon at the end of a programming statement Compile-Time Error

d. Spelling a word wrong in the output Logical Error

e. Producing inaccurate results Logical Error

f. Typing a { when you should have typed ( Compile-Time Error

1. What is the output produced by the following code statements. Indicate escape sequences (ie. special characters), if there are any.

Console.Write("Hi there");

Console.Write("David");

Hi thereDavid

1. What is the output produced by the following code statement? Indicate escape sequences (ie. special characters), if there are any.

Console.Out.WriteLine("50 plus 25 is " + 50 + 25);

50 plus 25 is 5025

1. Write the 3 lines of code needed to produce the following output in a console window. (Hint: The underline on the second line is a blinking cursor waiting for your input.)

Please type your name below.

**\_**

Your name is !

Press any key to continue . . .

Please type your name below.

Cookie

Your name is Cookie!

Press any key to continue . . .

Console.WriteLine(“Please type your name below.”);

String name = Console.ReadLine();

Console.Write($”Your name is {name}!”);

1. Write the C# line of code that creates a string with the identifier *myName* that holds your first name.

String myName = “Nick”;

1. Now, add your last name to the string using string concatenation.

myName += “ Will”;

1. Consider these strings:

string englishNo = "No";

string spanishNo = "no";

Does C# find the strings englishNo and spanishNo to be equivalent? If not, why?

No, because englishNo starts with a capital N and spanishNo starts with a lower case n, which are treated as different values.

1. My program asks the user for input by using Console.ReadLine(). Complete the lines of code to parse the input to a double, then add 55.0 to the number and print the result to the console.

Console.WriteLine("Please enter a number with a decimal precision of 2.");

string input = Console.ReadLine();

Console.WriteLine($”{Convert.ToDouble(input)} + 55.0 = {Convert.ToDouble(input) + 55.0}”);

1. A program reads input from a user into a string *userInput*. Which of the following lines of code properly parses *userInput* into an integer *userNumber*?

string userInput = Console.ReadLine();

a. int userNumber = int.ParseInt(userInput);

b. int userNumber = int.Parse(userInput);

c. int userInput = Parse(userNumber);

d. int userInput = int.Parse(userNumber);

1. *True or false?*

**T F** Comments negatively affect a program’s processing and compilation and facilitate human comprehension.

**T F** Appropriate white space makes a program harder to read.

**T F** A class is a blueprint of an object. Multiple objects can be created from one class definition.

**T F** C# is also known as Db. True in music

## Submission

Upload this document to the corresponding MyCourses dropbox.

Add, Commit and Push the project for #5 to your GitHub repository.