Exercise – Using Variables

First are quick review questions that you should write down the answers for in a document. The second part is practical exercises. Both are important for your learning and to help you retain the concepts.

# Review Questions

1. What is a variable?

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| --- |
| A variable is a storage space that can be manipulated |

1. What type of variable is an **int**?

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| --- |
| Int is a variable that saves whole numbers |

1. What type of variable is a **float**?

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| --- |
| Floats saves decimal numbers i.e 10.0f |

1. What type of variable is a **bool** or **boolean**?

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| --- |
| Bool is a true or false variable |

1. What type of variable is a **string**?

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| --- |
| String is a series of char that is represented as a class and can be used as a reference type |

1. What does “Declaring a variable” mean?

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| --- |
| Creating a variable/class |

1. Give an example of declaring a variable:

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| --- |
| Creating an int called bossHealth (int bossHealth;) |

1. What does “Initialising a variable” mean?

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| --- |
| To fill a declared variable with a number |

1. Give an example of initialising a variable:

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| --- |
| To give a number to a declared variable (bossHealth = 100;) |

1. Can ints have decimal values?

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| --- |
| Yes but decimal will not be truncated (effectively no ) |

1. Can floats have decimal values?

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| --- |
| yes |

1. What would be a good variable type for an enemy count?

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| --- |
| Int, as enemies are a whole object |

1. What would be a good variable type for a player’s speed?

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| --- |
| Float as to measure the speed in decimals |

1. What would be a good variable type for storing dialogue?

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| --- |
| String as to utilise a series of char |

1. What would be a good variable type for tracking whether the player is alive or dead?

|  |
| --- |
| bool |

1. What is Camel Case?

|  |
| --- |
| iHaveNoIdeaWhatCamelCaseIs |

1. Write how you would name a variable in code called “player power up”:

|  |
| --- |
| int playerPowerup = 1; |

# Practical Exercise

Make a new C# console project in Visual Studio and call it **VariablesExercise.**

Inside the **Main** function, let’s use some variables.

1. Declare a float called “player health” with no initial value.

Float playerHealth;

1. Declare a bool called “in combat” and set its initial value to false.

Bool incombat = true;

1. Declare a float called “monster health” with an initial value of 100.

Float monsterHealth = 100.0f;

1. On the next line, initialise the “player health” variable to 100.

playerHealth = 1

1. On the next line, change the “monster health” variable to 50.

a

1. Create a string called “battle start text” and set text to display at the start of a battle.

a

1. Create a new string called “player health text” and set its initial text to describe how much health the player has.

a

1. Create another string called “monster health text” and initialize the text to describe how much health the monster has.
2. Print out all of your text to the console, announcing the start of a battle and displaying the health of the player and monster.