# CIT 110 - Skills Tracking Sheet

| Student Name | Date |
|---|---|
| Casey Vanderploeg | 5/24/2020 |

| | M1 | M2 | M3-S1 | M3-S2 | M3-S3 | M3-S4 | M3-S5 | M4 |
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| **Mission 1** | | | | | | | | |
| **Project - The Conversation** | | | | | | | | |
| Create a Visual Studio .NET C# Console solution and saving it to a local folder. | | | | | | | | |
| Demonstrate saving, zipping, and uploading a Visual Studio solution. | | | | | | | | |
| Add an information comment block. | | | | | | | | |
| Add useful and consistent commenting in a code file. | | | | | | | | |
| Read a string from the console and assigning it to a local variable. | | | | | | | | |
| Embed a string variable in a string and displaying to the console. | | | | | | | | |
| Read a string from the console, parsing or converting it, and assigning it to a local integer or double variable. | | | | | | | | |
| Control the console using the Console class methods; BackgroundColor, ForegroundColor, CursorVisible, WindowHeight, WindowWidth, Clear(), and | | | | | | | | |
| Implement an output decision based on a string variable. | | | | | | | | |
| Embed an integer or double variable in a string and displaying to the console. | | | | | | | | |
| Implement an output decision based on an integer or double variable. | | | | | | | | |
| Implement an output decision based on a Boolean variable. | | | | | | | | |
| Implement an if/else if/?/else code block. | | | | | | | | |
| Implement a nested decision code block. | | | | | | | | |
| Perform a math operation on a minimum of two variables and save the result in another variable. | | | | | | | | |
| **Mission 2** | | | | | | | | |
| **Project - The Expert System** | | | | | | | | |
| Add an information comment block. | | | | | | | | |
| Implement a screen-based UI in the console. | | | | | | | | |
| Implement a consistent theme and structure for the UI using whitespace, intention, and font color. | | | | | | | | |
| Embed an integer or double variable in a string and displaying to the console. | | | | | | | | |

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| Implement an output decision based on an integer or double variable. | | | | | | | | |
| Implement an output decision based on a string variable. | | | | | | | | |
| Implement an if/else if/?/else code block. | | | | | | | | |
| Implement a nested decision code block. | | | | | | | | |
| Implement a while or do/while code block. | | | | | | | | |
| Perform a math operation on a minimum of two variables and save the result in another variable. | | | | | | | | |
| Format strings representing numeric values as currency, and limiting decimals. | | | | | | | | |
| Display a table of values, formatted with columns, column headers, and column totals. | | | | | | | | |
| Use complex expression (&& or \|\|) in a conditional statement (if or else if). | | | | | | | | |
| Implement a switch/case code block. | | | | | | | | |
| Validate user input with a feedback message: string value. | | | | | | | | |
| Validate user input with a feedback message: numeric value. | | | | | | | | |
| **Mission 3** | | | | | | | | |
| **Project - Finch Control S1 (Talent Show)** | | | | | | | | |
| Push and pull code to and from GitHub. | | | | | | | | |
| Create methods that do not require arguments. | | | | | | | | |
| Create methods that require one or more arguments. | | | | | | | | |
| Create methods that return a value. | | | | | | | | |
| Create methods that follow the Single Responsibility Principle. | | | | | | | | |
| Develop a menu system using a switch/case code block. | | | | | | | | |
| Connect and disconnect from the Finch robot. | | | | | | | | |
| Declare and instantiate an object. | | | | | | | | |
| Control the LED and tones on the Finch robot. | | | | | | | | |
| Control the movement of the Finch robot. | | | | | | | | |
| Play a song on the Finch robot. | | | | | | | | |
| Combine light, sound, and movement on the Finch robot. | | | | | | | | |
| Use a for loop to move the Finch robot or control the LEDs and sounds in a regular pattern. | | | | | | | | |
| Validate user input with a feedback message: string value. | | | | | | | | |
| Validate user input with a feedback message: numeric value. | | | | | | | | |
| Create a video walkthrough of an application and share it on a streaming website. | | | | | | | | |
| **Mission 3** | | | | | | | | |
| **Project - Finch Control S2 (Data Recorder)** | | | | | | | | |

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| Declare and instantiate an array. | | | | x | | | |
| Add values to an array. | | | | x | | | |
| Read values from an array. | | | | x | | | |
| Use an array initializer. | | | | x | | | |
| <mark>Demonstrate the following array methods; Sort, Sum, Average</mark> | | | | | | | |
| Access and perform operations on an array member. | | | | x | | | |
| Use a for loop to read temperature data from the Finch robot and store it in an array. | | | | x | | | |
| Use a for loop to read light data from the Finch robot and store it in an array. | | | | x | | | |
| Use a for or foreach loop to display the values of an array. | | | | x | | | |
| Convert Celsius to Fahrenheit. | | | | x | | | |
| Convert Celsius to Fahrenheit using a method that returns a value. | | | | x | | | |
| Validate user input with a feedback message: string value | | | | x | | | |
| Validate user input with a feedback message: numeric value | | | | x | | | |
| **Mission 3** | | | | | | | |
| **Project - Finch Control S3 (Alarm System)** | | | | | | | |
| Monitor temperature and sound an alarm when a minimum threshold is passed. | | | | | | | |
| Monitor light and sound an alarm when a maximum threshold is passed. | | | | | | | |
| Monitor both temperature and light, and sound an alarm when either threshold is passed. | | | | | | | |
| Validate user input with a feedback message: string value | | | | | | | |
| Validate user input with a feedback message: numeric value | | | | | | | |
| **Mission 3** | | | | | | | |
| **Project - Finch Control S4 (User Programming)** | | | | | | | |
| Declare and initialize a list of simple data types. | | | | | | | |
| Store user input into a list of enumerations. | | | | | | | |
| Display a list of enumerations using a foreach loop. | | | | | | | |
| Process a list of enumerations using a switch/case block. | | | | | | | |
| Program the Finch robot with standard commands: light, sound, movement | | | | | | | |
| Program the Finch robot with extended commands: combined light, sound, movement | | | | | | | |
| Program the Finch robot with extended commands: sensor values | | | | | | | |
| Store and process both command (enum) and command duration (int) as a list of tuple. | | | | | | | |
| Validate user input with a feedback message: string value | | | | | | | |

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| Validate user input with a feedback message: numeric value | | | | | | | | | |
| Validate user input with a feedback message: enumeration | | | | | | | | | |
| **Mission 3** | | | | | | | | | |
| **Project - Finch Control S5 (Persistence)** | | | | | | | | | |
| Read and write a single line of text from a text file. | | | | | | | | | |
| Write a single line of text to a text file. | | | | | | | | | |
| Read more than one line of text from a text file. | | | | | | | | | |
| Write more than one line of text to a text file. | | | | | | | | | |
| Read an array or list from a text file. | | | | | | | | | |
| Write an array or list to a text file. | | | | | | | | | |
| Read a line of text with multiple values separated by a comma from a text file. | | | | | | | | | |
| Write a line of text with multiple values separated by a comma to a text file. | | | | | | | | | |
| Validate user input with a feedback message: string value | | | | | | | | | |
| Validate user input with a feedback message: numeric value | | | | | | | | | |
| **Mission 4** | | | | | | | | | |
| **Project - The Capstone** | | | | | | | | | |
| Develop an application that performs a useful service. | | | | | | | | | |
| Develop an application that has a strong, consistent themes. | | | | | | | | | |
| Develop an application that considers and implements a strong UI/UX. | | | | | | | | | |
| Write documentation for an application. | | | | | | | | | |
| Create a video that demonstrates all features of an application. | | | | | | | | | |