

## Virtual Robotics Remix Mastery Rubric

Requirement	No evidence ←-----→ Mastery	
<b>Programming Conventions</b> are followed	<ul style="list-style-type: none"> <li>• Variable names aren't descriptive</li> <li>• Function names aren't descriptive</li> <li>• Code blocks inconsistently indented</li> <li>• Capital letters used</li> <li>• Code is not organized into sections</li> </ul>	<ul style="list-style-type: none"> <li>• Variable names are descriptive</li> <li>• Function names are descriptive</li> <li>• Code blocks consistently indented</li> <li>• Use of small letters (not capital)</li> <li>• Code is organized into sections</li> </ul>
<b>Documentation and Readability</b>	<ul style="list-style-type: none"> <li>• No comments are used.</li> <li>• Code is difficult to read because no blank lines were used, or too many blank lines were included.</li> </ul>	<ul style="list-style-type: none"> <li>• Frequent and descriptive comments are used regularly.</li> <li>• Blank lines are used to help with readability.</li> </ul>
<b>Use of Variables and constants</b>	<ul style="list-style-type: none"> <li>• "Magic Numbers" or literal values are used in the code.</li> <li>• Data isn't tracked or updated (no counters, states, conversions, etc.).</li> </ul>	<ul style="list-style-type: none"> <li>• Constants are used to eliminate "magic numbers."</li> <li>• Variables are used for storing, keeping track of and updating data.</li> <li>• Global and local variables are used.</li> </ul>
<b>Use of Functions</b>	<ul style="list-style-type: none"> <li>• No plan or algorithm to follow.</li> <li>• Everything in one main program.</li> <li>• Long sections of code.</li> <li>• Functions use all global or all local variables.</li> <li>• Functions don't take parameters.</li> </ul>	<ul style="list-style-type: none"> <li>• Code is divided into smaller sections that accomplish a task.</li> <li>• Parameters are used as needed.</li> <li>• Local and global variables are used as needed.</li> <li>• Functions return a value as needed.</li> </ul>
<b>Use of Inputs</b> Buttons and sensors	<ul style="list-style-type: none"> <li>• Neither button is used for input.</li> <li>• No sensors are read or used. (line sensor, proximity sensor, encoders, system temperature, battery voltage, accelerometer)</li> </ul>	<ul style="list-style-type: none"> <li>• At least one button is used for input and control.</li> <li>• At least one sensor is used to give input.</li> <li>• Conversion of raw data is performed as needed.</li> </ul>
<b>Algorithms and Programming</b>	<ul style="list-style-type: none"> <li>• No algorithms identified or used.</li> <li>• Program performs the same for every execution, without input.</li> <li>• Lists and tuples are not utilized when they would simplify the code.</li> <li>• Debugging practices are not used and code contains errors.</li> </ul>	<ul style="list-style-type: none"> <li>• Algorithms are used to manipulate data and get results.</li> <li>• Data is used to inform decisions.</li> <li>• Lists and tuples are used to simplify data collection and implementation.</li> <li>• Debugging practices are used to correct errors in code and logic.</li> </ul>
<b>Control Structures</b>	<ul style="list-style-type: none"> <li>• Program does not have any if or if/else or if/elif/else statements.</li> <li>• Program does not use any while loops.</li> <li>• Nested loops or if statements are not used, or are used incorrectly.</li> </ul>	<ul style="list-style-type: none"> <li>• While loops and if statements are used to control the flow of execution.</li> <li>• Conditional and logical operators are used appropriately.</li> <li>• Nested while and if statements are used when needed.</li> </ul>
<b>Use of Outputs</b> LEDs, speaker, motors	<ul style="list-style-type: none"> <li>• No output is produced.</li> </ul>	<ul style="list-style-type: none"> <li>• One or more outputs are used to convey data or perform a task.</li> </ul>
<b>Collaboration</b>	<ul style="list-style-type: none"> <li>• Students work independently or uncooperatively on a team.</li> </ul>	<ul style="list-style-type: none"> <li>• Students work collaboratively with shared tasks in their team to complete the project.</li> </ul>
<b>Synthesis / Purpose</b>	<ul style="list-style-type: none"> <li>• No clear purpose for the program.</li> <li>• Program does not incorporate learning across the mission pack.</li> </ul>	<ul style="list-style-type: none"> <li>• Purpose of the program is clearly stated.</li> <li>• Program combines learning, concepts and code from several missions.</li> </ul>
<b>Code Completion</b>	<ul style="list-style-type: none"> <li>• Code will not run or doesn't complete the task correctly.</li> </ul>	<ul style="list-style-type: none"> <li>• Code runs and accomplishes its task without any errors, including logic.</li> </ul>