

Physical Activity and Heart Rubric and Learning Target Specs	Rubric	Student
<p>Data files read in appropriately</p> <p><b>Learning Target:</b> <i>I can use a range of built-in MATLAB functions to read data from external text or data files</i></p> <p><b>Specifications:</b></p> <ul style="list-style-type: none"> <li>• Can utilize <b>fscanf</b>, <b>fread</b>, <b>textscan</b>, <b>readmatrix</b>, <b>readtable</b>, and/or <b>readcell</b> as appropriate for data import without using the function <b>uiimport</b> or import tool to load data.</li> </ul>	15	
<p>Utilizes user-defined function successfully</p> <p><b>Learning Target:</b> <i>I can write and run a MATLAB mlf-file that contains a function which can take arguments and return output.</i></p> <p><b>Specifications:</b></p> <ul style="list-style-type: none"> <li>• Creates a local user-defined function with correct syntax for function prototype line</li> <li>• Utilizes 'function' and 'end' keywords at front and end of the file</li> <li>• Includes a usage statement describing inputs and outputs of function and general usage instructions</li> </ul>	15	
<p>HR target min and max independently determined based on exercise group and age</p> <p><b>Learning Target:</b> <i>I can write MATLAB conditional statements using if-else and switch statements</i></p> <p><b>Specifications:</b></p> <ul style="list-style-type: none"> <li>• Creates correct structure of if-else (or if-elseif-else) control structure such that program flows in correct order OR creates correct switch structure given a keyword</li> <li>• Data can only flow down one path given structure</li> <li>• Incorporates “else” or “otherwise” appropriately when needed</li> </ul>	10	
<p>Average HR compared to target HR range and category of level determined (Low, Within, or High)</p> <p><b>Learning Target:</b> <i>I can write MATLAB conditional statements using if-else and switch statements</i></p> <p><b>Specifications:</b></p> <ul style="list-style-type: none"> <li>• Creates correct structure of if-else (or if-elseif-else) control structure such that program flows in correct order OR creates correct switch structure given a keyword</li> <li>• Data can only flow down one path given structure</li> <li>• Incorporates “else” or “otherwise” appropriately when needed</li> </ul>	15	

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<p>Code independently counts number of times each category (Low/Within/High) for each ID</p> <p><b>Learning Target:</b> <i>I create flexible code that does not hard code values unless necessary</i></p> <p><b>Specifications:</b></p> <ul style="list-style-type: none"> <li>• Uses selection statements and/or variables related to data size to determine how many loops to run or count when condition is met.</li> <li>• All counts independently created by code, not entered by coder</li> </ul> <p><b>Learning Target:</b> <i>I can write MATLAB iteration statements using for loops.</i></p> <p><b>Specifications:</b></p> <ul style="list-style-type: none"> <li>• Creates correct syntax for a 'for loop' with index array</li> <li>• Unless specified, index array is not changed within the loop</li> <li>• Infinite loop not created</li> </ul>	10	
<p>Summary list created includes ID, target intensity level, target HR range, Number of times in each category</p> <p><b>Learning Target:</b> <i>I can write MATLAB scripts, add meaningful and concise comments to them.</i></p> <p><b>Specifications:</b></p> <ul style="list-style-type: none"> <li>• MATLAB live script used (.mlx) and not .m script file</li> <li>• Code is well commented with either coded comments and/or text used to meaningfully describe script and functionality of code as appropriate</li> <li>• All non-essential code is suppressed so that only summary list is printed out</li> </ul>	15	
<p>Code includes display for when data is missing</p> <p><b>Learning Target:</b> <i>I include checks for errors or warnings in my own functions.</i></p> <p><b>Specifications:</b></p> <ul style="list-style-type: none"> <li>• Checks for condition that should not occur and utilizes the 'error' function to stop the execution of the program and/or function.</li> <li>• Checks for condition that may cause problems and utilizes the 'warning' function to display a message but allow the execution of the program and/or function to continue.</li> </ul>	15	
<p>Final outputs (table &amp; missing data correct)</p> <p><b>Learning Target:</b> <i>I can demonstrate ability to identify, formulate, and solve engineering problems.</i></p> <p><b>Specifications:</b></p> <ul style="list-style-type: none"> <li>• Utilizes problem solving framework to identify problem statement, known inputs and outputs, algorithm/pseudocode, and coding solution.</li> <li>• Problem is solved completely with only minor errors.</li> </ul>	10	

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<p>Discussion of code algorithm and design choices.</p> <p><b>Learning Target:</b> <i>I can incrementally develop a MATLAB function or program.</i></p> <p><b>Specifications:</b></p> <ul style="list-style-type: none"> <li>• Creates algorithm prior to coding MATLAB script/function</li> <li>• Incrementally codes sections of algorithm rather than coding whole script/function and debugging it</li> </ul>	10	
<p>Style points: code efficiency / organization / commenting</p> <p><b>Learning Target:</b> <i>I can write MATLAB scripts, add meaningful and concise comments to them.</i></p> <p><b>Specifications:</b></p> <ul style="list-style-type: none"> <li>• MATLAB live script used (.mlx) and not .m script file</li> <li>• <u>Code is well commented</u> with either coded comments and/or text used to meaningfully describe script and functionality of code as appropriate</li> <li>• All non-essential code is suppressed so that only summary list is printed out</li> <li>• Sections and headers are used appropriately to organize code</li> </ul>	10	
<b>Problem total</b>	<b>125</b>	