<table>
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<th><strong>Goal</strong></th>
<th><strong>Hardware</strong></th>
<th><strong>Methodology</strong></th>
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| Successfully design and construct a 3D printer according to the specifications given by National Instruments.  
- The 3D printer must utilize the NI myRIO, along with its accompanying software, LabVIEW. | Arduino Mega 2560  
RAMPS V1.4 | Choose a printer design (Prusa i3)  
Obtain all necessary parts for the printer’s construction  
Construct the printer with Arduino Mega 2560 in conjunction with RAMPS V1.4  
Test printer and observe normal behavior  
Integrate printer with myRIO circuitry  
Test, observe, and modify myRIO circuitry until the printer behaves in the same manner as before |

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<th><strong>Objectives</strong></th>
<th><strong>Research Challenges</strong></th>
<th><strong>Results</strong></th>
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| Construction of the 3D Printer  
- Ordering/acquiring all necessary parts to assemble the Prusa i3 Model 3D Printer | Part compatibility issues/ Build problems  
Issues using Arduino Mega 2560 to run the printer  
Learning to use LabVIEW to code the NI myRIO  
Successfully coding the NI myRIO to mimic the Arduino Mega 2560 | Successful Prusa i3 Build  
Finished coding the Arduino Mega 2560 and RAMPS V1.4  
Successfully analyzed G-code to print objects from CAD Files. |

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<th><strong>References</strong></th>
<th><strong>Future Development</strong></th>
<th><strong>Acknowledgement</strong></th>
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</table>
| RepRap  
reprap.org | Integrate NI myRIO in place of Arduino Mega 2560  
Utilize LabVIEW as the main coding language in place of C code.  
Continued work with current build to complete all tasks. | Jeff Steele  
Sam Strickling  
Rick Anderson |