

Project #	Judges Initials:
Project Title:	

Abstract To what degree does the abstract describe the project? (Maximum of 250 words)		<i>Points</i>
	0=No abstract. 1=Poorly written and does not describe the project. 2=Poorly written and does not describe all components of the project. 3=Well-written but does not describe all components of the project. 4=Well-written and completely describes the project.	
Problem/Need The purpose is clearly and succinctly stated? The computer usage represents a new point of view or improvement on an older version of a program.	0= No problem / need to solve. 1= Poor problem or no objective. 2=Unoriginal problem, however creative approach to the idea. 3=Shows insight and addresses a need. Well thought out objective. 4= <u>Original and unique project</u> that addresses or solves a real need and has a good approach. Clear logical objective succinctly stated.	
Experimental Design/Criteria Design criteria are requirements that the student specifies that will help the student develop his or her software and determine the extent to which the final production/ program meets the state design goal.	0=No evidence of design criteria listed. 1=Poor quality design, and does not follow a logical progression. 2=Minimal quality, additional testing may not be done or illogical solution or software/programming may be incomplete to meet the goal. 3=Average quality, identifies the requirement, and has a solution. 4=Exemplary quality, requirements are stated, design is clear, development and testing is accurate and retesting is done to ensure accurate solution.	
Preliminary Designs Does the student clearly understand the procedure and can accurately conduct the procedure using the plans that were developed and used?	0=No structured process shown. 1=Incomplete iteration of code. 2=Complete iteration of a code. 3=Multiple iterations written to achieve the same goal. 4=Entire software development life cycle is clearly evident including plans that match the requirements and results from testing and computing.	
Test Student will test the code and should note any bugs in the program, slow parts in the code, the most efficient parts of the code, etc. A “test plan” is a key part of the testing process.	0=No testing of the code is indicated. 1=Test is done but notes about bugs or successes are not made. 2=Testing is done and bugs are noted. Slow parts or strengths not evident. 3=Testing is done and bugs, strengths, and slow parts are noted. 4=Testing is done and the above is noted, in addition, a “test plan” is a well written, key part of the process.	
Redesign and Retest This is the longest step of the engineering design process. Debugging, rewriting and optimizing the code is done. Conduct several different tests of the code and use failure analysis, the state design criteria and design goal to guide revision.	0=No retesting is evident. 2=Retesting is evident however logical connections aren’t made. 4=Retesting is evident and debugging is evident. 6=Retesting and debugging is evident and deletions and additions are evident. 8=Retesting, redesigning, debugging, optimizing are done until the design criteria has been reached and the design goal has been clearly fulfilled.	
	Subtotal	

<p>Conclusion To what degree are the conclusions recognized and interpreted? Conclusions are logical and based on collected data. Students show unanswered questions may remain. Mathematical symbols or computer program readouts are standard or carefully explained.</p>	<p>0=There isn't a conclusion. 1=The conclusion is illogical and not based on collected data. There isn't any explanation of mathematical symbols or program. 2=The conclusion is weak and does not address all aspects of the project. There aren't any further questions or explanations. 3=The conclusion supports the collected data and relates whether there are still unanswered questions. Some mathematical symbols or programming techniques are explained. 4=The conclusion is a well-written interpretation of data, major findings are addressed and further tests are cited. Computer program readouts are clearly explained.</p>	
<p>Display Attributes Attractive, clear, legible and in appropriate order.</p>	<p>0=Unsatisfactory display – attributes missing. 1=Poor quality of display with little attention to detail. 2=Average quality but board organization hinders communication. 3=Good quality – but the addition of more components would improve communication or layout hinders communication. 4=Superior display – layout and organization facilitates communication.</p>	
<p>Overall Quality To what degree does this project relate to broader scientific principles and real world applications, is original or has an innovative approach to the topic or shows a high degree of complexity. Student shows deep understanding of concepts.</p>	<p>0=Very little degree of originality and/or complexity. 1=Some relevance to real world application but low degree of originality or complexity. 2=Some originality or complexity, may or may not have real world application, yet not identified by the student. 3=A degree of originality, complexity, and has real world application and is innovative. 4=Very innovative and original. Complexity and application is high. The study is complete and shows a deep understanding.</p>	
<p>Notebook The development of problem/question is evident at the beginning of the journal. All original calculations or computer programs are shown in detail. Listed are the results or multiple trials and comments on the procedure. There is an on-going record of the experiment and shows analysis, reflection and application.</p>	<p>0=Little evidence of recording information as it was completed. Or analysis on the board has no support in the notebook 2=Some evidence of recording information as it was completed. Some evidence of analysis is included, but not all calculations/analysis are shown in notebook. 4=Daily work was recorded as it happened. The data is recorded in raw format in an organized manner. All trials are recorded and relate to the board. 6= Daily work was recorded as it happened. The data is recorded in raw format in an organized manner. All trials are recorded and relate to the board. Both raw data and written observations are recorded. Evidence of multiple trials is clearly evident. 8=Detailed, well written, and organized, includes all of the above and in-depth analysis and reflection of the project.</p>	
	<p>TOTAL POINTS _____ / 44</p>	