

This excerpt is from the project entitled “Car Lock Out”

Element A: Presentation and Justification of the problem

*This entry would be likely to receive a **score of 1**, based on the EDPPSR. In this entry, the problem is identified and defined in only a superficial way, and it is unelaborated. The justification of the problem reflects the concerns of only one stakeholder group (car owners/drivers) and includes unsupported generalities (e.g., “take hours,” “quite costly”). Only a single source was consulted, and ambiguity of language leaves unclear whether that source was a primary or secondary one (that is, if the AAA member was provided with the statistic on lockouts by an AAA staff member or if the statistic was provided directly by a staff “member” rather than a member of AAA). There is no detail provided to demonstrate that this source is either timely or credible. Furthermore, the limited focus (one month’s data in just one urban location) adds to the sense of subjectivity of this entry. The minimal information included is insufficient to allow for the determination of any measurable design requirements. The entry as a whole could be improved with the addition of specific details to replace or extend/expand upon generalities. The justification would be strengthened by the inclusion of support from additional sources (perhaps representing additional stakeholders). For scores in the higher range, the timeliness and credibility of sources should be made clear by the student(s) undertaking the design project.*

**Engineering Design Process Portfolio Scoring Rubric
Component and Element Titles**

Component I: Presenting and Justifying a Problem and Solution Requirements

- **Element A: Presentation and justification of the problem**
- Element B. Documentation and analysis of prior solution attempts
- Element C. Presentation and justification of solution design requirements

Component II: Generating and Defending an Original Solution

- Element D: Design concept generation, analysis, and selection
- Element E: Application of STEM principles and practices
- Element F: Consideration of design viability

Component III: Constructing and Testing a Prototype

- *Element G: Construction of a testable prototype*
- Element H: Prototype testing and data collection plan
- Element I: Testing, data collection and analysis

Component IV: Evaluation, Reflection, and Recommendations

- Element J: Documentation of external evaluation
- *Element K: Reflection on the design project*
- Element L: Presentation of designer’s recommendations

Component V: Documenting and Presenting the Project

- Element M: Presentation of the project portfolio
- Element N: Writing like an Engineer

Please Note: Elements M and N require no submission from the portfolio author(s) and are intended to be scored based on the portfolio work as a whole from what has been submitted from Elements A through L

Element A: Presentation and justification of the problem

5 The problem is clearly and objectively identified and defined with considerable depth, and it is well elaborated with specific detail; the justification of the problem highlights the concerns of many primary stakeholders and is based on comprehensive, timely, and consistently credible sources; it offers consistently objective detail from which multiple measurable design requirements can be determined.

4 The problem is clearly and objectively identified and defined with some depth, and it is generally elaborated with specific detail; the justification of the problem highlights the concerns of some primary stakeholders and is based on various timely and generally credible sources; it offers generally objective detail from which multiple measurable design requirements can be determined.

3 The problem is somewhat clearly and objectively identified and defined with adequate depth, and it is sometimes elaborated with specific detail, although some information intended as elaboration may be imprecise or general; the justification of the problem highlights the concerns of at least a few primary stakeholders and is based on at least a few sources which are timely and credible; although not all information included may be objective, the justification of the problem offers enough objective detail to allow at least a few measurable design requirements to be determined.

2 The problem is identified only somewhat clearly and/or objectively and defined in a manner that is somewhat superficial and/or minimally elaborated with specific detail; the justification of the problem highlights the concerns of only one or two primary stakeholders and/or may be based on insufficient sources or ones that are outdated or of dubious credibility; although little information included is objective, the justification of the problem offers enough objective detail to allow at least a few design requirements to be determined; however, these may not be ones that are measurable.

1 The identification and/or definition of the problem is unclear, is unelaborated, and/or is clearly subjective; any intended justification of the problem does not highlight the concerns of any primary stakeholders and/or is based on sources that are overly general, outdated, and/or of dubious credibility; information included is insufficient to allow for the determination any measurable design requirements.

0 The identification and/or definition of the problem are missing OR cannot be inferred from information included. A justification of the problem is missing, cannot be inferred from information included as evidence, OR is essentially only the opinion of the researcher.



Car Lockout

PRESENTATION AND JUSTIFICATION OF THE PROBLEM A

Our group is trying to solve the problem of people getting locked out of their car. As of right now there are mainly two solutions in solving a lockout. The first solution is if you are a AAA member. If a lockout occurs you can call AAA and they will unlock your car. This solution can take hours and the annual subscription for AAA is quite costly. The second solution is if you are an OnStar member. If a lockout occurs OnStar will send a cellular data signal to the car's OnStar device to unlock the car. Although the OnStar solution may be alot faster than AAA, it is still costly to maintain an OnStar subscription. So our problem basically, is to solve the issue of a lockout in a quick manner at a low cost. This problem is justifiable, our group called an AAA member from the Albany division and found out that 50 car lockouts occur in one month just in the Albany decision.