



# CS CAPSTONE USER ACCEPTANCE TESTING REVIEW

MAY 9, 2018

## SOLAR CAR SIMULATION

PREPARED FOR

PHOENIX SOLAR RACING

CAILIN MOORE

PREPARED BY

GROUP 43

INFERNO

DENNIE DEVITO

LOGAN KLING

DAKOTA ZAENGLE

### Abstract

This document will display and briefly review the results of the user acceptance testing performed with Cailin Moore, Nolan Dahl, and Gray Johnson.

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## 1 USERS

### 1.1 Cailin Moore

Cailin Moore [1] is our official client. She is one of the heads of Phoenix Solar Racing alongside Nolan and Gray and one of the two users we want to approve this GUI for our project requirement. The changes she suggested after reviewing the program on Wednesday the 9th were mostly focused on including units in our form fields which has been a goal we put off until we were done making changes to the simulation functions. Additionally she pointed out that needing to re-size the window when the 'Get Course' mode is tedious. Cailin installed the most recent version at the time and ran these tests from her computer without any bugs, crashes, or compatibility troubles.

### 1.2 Nolan Dahl

Nolan Dahl [2] is the second user we want to approve the GUI and another head of the solar team. Nolan had already tested an earlier version of the program on his laptop in order to help create the installer package. At the time it ran without bugs, crashes, or compatibility troubles after we finished set up and he also circled 'Installed on my PC: Yes' because of his earlier test. The form he filled out however was focused on this most recent version. Like Cailin, Nolan also mentioned adding units. He also suggested a text document that would discuss the installation and use of the program, this has been addressed by our `README.txt` located in the 'Capstone Code' folder of our GitHub repository. Finally he appreciated the automatic re-sizing that had been done since the earlier version he ran over Spring Break.

### 1.3 Gray Johnson

Gray Johnson [3] is another head of the solar team and while he was originally one of the three people we had in our requirements for testing, we removed him because we were unsure if we would still be able to meet with him after the solar team started to disband. Thankfully he was at the meeting and agreed to test it with Cailin and Nolan. Gray also mentioned adding units. He pointed out the Elevation graph could be larger in the program and that the steps to use the program are not immediately clear.

## 2 RESULTING CHANGES

- 1) Units have been added to the input fields and as descriptions above the graphs labeling the x and y axis for each graph.
- 2) A simple walk-through has been added under the 'Help' drop-down to clarify what each run mode does and explain how the elevation system works.
- 3) The default and minimum size of the window has been modified so that the elevation graph is displayed properly even with the smallest window size.
- 4) our `README.txt` has been updated to better clarify using the visual studio project, installing wxWidgets, use of the `route.html` file for elevation, and how to create installer packages with visual studio.

## 3 PROJECT REQUIREMENTS

### 3.1 User Acceptance

One of our project requirements stated that Nolan and Cailin test and accept the GUI with at least a 4/7. After collecting the forms no user gave any section less than a 5/7 and most sections still received a full seven points. After these tests

I would consider this project requirement fulfilled, especially since we were able to quickly change the GUI to include units and address their other concerns although as of May 11th 2018 we have not handed these new changes off to them.

### **3.2 Program Portability**

Another of our project requirements requests that our program run on the systems Phoenix Solar Racing will be using at least 95% of the time without crashing. While we have not run the program a multitude of times, Nolan and Cailin were able to use it without any problems. Additionally I have tested the installer package on three computers without any development environments or .dlls all of which were able to run both the main program and the 'route.html' elevation web-page without a problem. While we have not exhaustively tested this program on other systems I am still confident this project requirement is met.

## **4 COMPLETED FORMS**

# User Acceptance Testing

Computer Science Capstone Group 43 – Solar car simulation

Name: Carlin

Installed on my PC (Y/N):

## 1 CRITERIA

Please rate 1-7 your response to each of the following sentences. Feel free comment on each section or request changes.

### 1.1 USABILITY 7

The application is easy to use (did you feel you needed an explanation or could you use it right away?):

Needs units for everything

### 1.2 SPEED 7

The application produces output in an acceptable amount of time:

Yes

### 1.3 DOCUMENTATION 5

The labels in the main application make it clear what every element does:

only thing missing is units

The documentation in the map extension provides clear correct steps:

Yes

### 1.4 APPEARANCE 6

The application is visually understandable. The sections are appropriately proportioned (all the sections were the right size, no element had too much or too little screen space):

would be nice to improve having to resize window when doing course mode.

### 1.5 READABILITY 5

The output of the application is readable, and I understand what each element is:

units

I understand what each input element is asking for:

units

### 1.6 ADDITIONAL COMMENTS:

Very easy to use!

# User Acceptance Testing

Computer Science Capstone Group 43 – Solar car simulation

Name: Nolan Dahl

Installed on my PC (Y/N):

## 1 CRITERIA

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Please rate 1-7 your response to each of the following sentences. Feel free comment on each section or request changes.

### 1.1 USABILITY

The application is easy to use (did you feel you needed an explanation or could you use it right away?):

7

Very easy to use.

• I would put units on everything (input, axis, etc.)

• a text document w/ instructions in code someone that knows how to use it (input parameters, how to install/launch files, etc.)

### 1.2 SPEED

The application produces output in an acceptable amount of time:

7

Yes

### 1.3 DOCUMENTATION

The labels in the main application make it clear what every element does:

7

Yes (just put units)

The documentation in the map extension provides clear correct steps:

7

Yes

### 1.4 APPEARANCE

The application is visually understandable. The sections are appropriately proportioned (all the sections were the right size, no element had too much or too little screen space):

7

Yes, nice touch making everything resizable

### 1.5 READABILITY

The output of the application is readable, and I understand what each element is:

7

Yes

I understand what each input element is asking for:

5

Yes (units)

### 1.6 ADDITIONAL COMMENTS:

No

# User Acceptance Testing

Computer Science Capstone Group 43 – Solar car simulation

Name: Gray

Installed on my PC (Y/N): N

## 1 CRITERIA

Please rate 1-7 your response to each of the following sentences. Feel free comment on each section or request changes.

### 1.1 USABILITY

The application is easy to use (did you feel you needed an explanation or could you use it right away?):

Very easy to use, but some functions ~~are~~ (running the program) are not immediately obvious.

5/7

### 1.2 SPEED

The application produces output in an acceptable amount of time:

7/7

### 1.3 DOCUMENTATION 6

The labels in the main application make it clear what every element does:

Units on the input fields could be helpful

The documentation in the map extension provides clear correct steps:

### 1.4 APPEARANCE 7

The application is visually understandable. The sections are appropriately proportioned (all the sections were the right size, no element had too much or too little screen space):

The elevation graph could be a little larger in the program

### 1.5 READABILITY 7

The output of the application is readable, and I understand what each element is:

I understand what each input element is asking for:

### 1.6 ADDITIONAL COMMENTS:

## REFERENCES

- [1] Cailin Moore, "User acceptance testing - cailin moore," Personal Communication.
- [2] Nolan Dahl, "User acceptance testing - nolan dahl," Personal Communication.
- [3] Gray Johnson, "User acceptance testing - gray johnson," Personal Communication.