Project Proposal

Project Name  
Give your project a name.  
Team with Contact information  
List those who will be building the project and their contact information  
Stakeholders with Contact information  
List the Stakeholders of the project and their contact information  
Project Purpose  
Describe the problem your project will be solving.  
Background/Prior Knowledge  
What do you already know about the topic, technology, or subject you will be working in? Do  
you consider yourself a Newbie, Beginner, Novice?  
Provide information essential to understanding your project. If applicable, this should  
include:  
Prior work by others - Are you recreating something that has been done before? Are you  
building on top of others' work?  
Prior work by you - Have you already done things in this area and you are adding to it?  
Provide information on what foundational course background, if any, got you interested in  
this subject and how you are going to use that information in your project.  
Description  
Provide the details of your project. In particular, make sure to include:  
In more detail than your abstract, explain what your will project do. What is the  
solution/features? Does the solution to your problem already exist? If so how is your  
solution better or different? What is the real-world impact of your solution?

Describe the intended audience, customer, or user of the project. What is your primary  
audience? Who is going to use your solution/program? Will your solution only be in a certain  
geographic area, Community, Or age range? etc. Where is it going to be used?  
When do you know the project is done? What is good enough or a valid product that I can  
demo?  
Significance  
Referring back to the expectations for significant projects above, explain how/why your  
project will be significant.  
Is this something that you can put on your resume and feel would impress prospective  
employers? Describe what you would put on your resume.  
New Computer Science Concepts  
Another critical part of your senior project is that you demonstrate that you have become a  
self-reliant learner. Please describe the new things you will need to learn to complete this  
project. These items should be computer science / software engineering concepts.  
Your sole reason should not be to learn a language or learn a language better. Though you  
may want to learn a new aspect of a language not covered in previous classes found in the  
major, this should not be the only new concepts you want to learn.  
You may consider a new tool, technology, 3rd party software, or programming concept.  
Note: Do not underestimate how long it will take to learn new technologies and concepts.  
Take some time to do preliminary research so that you have a feeling for how much time  
may be required to come-up-to-speed on the new technology or concept.  
Interestingness  
Describe why this project is interesting and exciting to you. Senior projects get hard, hit  
road-blocks, and cause people to want to quit. If you are excited about your project, this will  
help you stay motivated and complete your project.  
Tasks and Schedule

|  |  |  |  |
| --- | --- | --- | --- |
| **Week** | **Task** | **Hours** | **Goal** |
| 1 - 2 | Research mutation testing and AST basics | 18 |  |
| 3 – 4 | Build basic mutant generator (3 operator types only) | 18 |  |
| 5 - 6 | Implement test execution and kill/survive tracking | 20 |  |
| 7 | Mutation score calculation | 10 |  |
| 8 - 9 | Basic CLI and simple reporting | 18 |  |
| 10 - 11 | Minimal CI/CD integration | 15 |  |
| 12 | Documentation | 10 |  |
| 13 | Testing the tool | 10 |  |
| 14 | Final polish and presentation prep | 10 |  |

Total hours: 129  
Resources  
List resources needed to complete your project. This may include hardware, software  
licenses, reference material, etc. Specify the estimated cost for each resource. Include  
hardware, software, compliers, books, websites, mentors, events, and videos associated  
with languages, tools, and software you need for the project.  
Dependencies  
What are your dependencies for the success of your project? What are the languages you  
need to install? What IDE will you use? What platform (Windows, Mac, Web, Servers) are  
you going to use? Where are you going to develop and test the solution? How are you going  
to install & deploy the solution? Are you dependent on other people providing anything for  
you to complete your project? Are there any permissions you need to obtain?  
This is to help you recognize if there are things you'll need to buy, and if so, if that is feasible  
for you. In some cases, the department may have limited funds to purchase equipment that  
can be reused for future projects. But recognize that if the department purchases  
equipment it will stay with the department.  
Risks  
Identify the risks of completing the project. This should include a list of things you don’t  
know how to do and will need to learn.