Title: Extracting Reqs from Code

Members:

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Client: Dr. Slhoub

Date(s) of Meeting(s) with the Client for Developing this Plan:

- 8/30/2021: Initial meeting to discuss project topics and goals
- 9/3/2021: Meeting to discuss ideas to fulfill the project goals
- 9/7/2021: Signing off on Project Plan and ideas
- Formal meeting with advisor established on a biweekly basis

Goal and motivation:

Extracting software requirement specifications from code (reverse engineering). Users don't have a way of automatically getting the original requirements for the software from the existing code. To make the user happy, we must jump straight from code to requirements skipping the design phase.

Approach (key features of the system):

Easily comprehend code functionality

- Speed up time understanding requirements by not having to manually analyze code to get original requirements. The analysis will be displayed to the users in an easy to understand format.

Requirement Analysis for all High-Level Programming Language

- This code will be used to take code from different languages and determine the requirements that were needed in the original design.

Use any or no documentation for the analysis

- If documentation and/or comments are present in the files, they will be used for the analysis as well. The system will be able to parse and manipulate basic language patterns to write out new requirements found. If no documentation is found, the system will develop its own requirements using method titles and variable names, etc…

Novel features/functionalities:

This code will be designed in a way that can reverse engineer specific requirements that are overlaid within the code, understanding the syntax and returning an easily readable comprehension for the code. This is helpful in industries as to identify previously completed work and how it operates. Potentially saving clients money and time in the software development cycle.

Technical Challenges:

In order to extract requirements from code, we will need to be able to parse the code, and compare sections of it to a database of words to determine the requirements.

Utilizing comments from codes and identifying the syntax used by the writer of the code to match the proper use, to the final necessity as it reaches the required task. As an extension of this, the program must be able to determine which comment applies to which section of the code

Including the ability to identify multiple high-level languages that are used to write the codes, having a database that is capable of processing the information for given languages and being able to correctly return the requirements in different languages.

Milestone 1 (Oct 4): itemized tasks:

- Select collaboration tools to help maximize communication within the group and the organization of the project itself
- Select technical tools to use during the project
- Research manual requirement extraction from code

- Research linguistic patterns for written communication
- Create Requirement Document
- Create Design Document
- Create Test Plan

Milestone 2 (Nov 1): itemized tasks:

- Implement, test, and demo *feature*
- Implement, test, and demo *feature*
- ...

Milestone 3 (Nov 29): itemized tasks:

- Implement, test, and demo *feature*
- Implement, test, and demo *feature*
- …

Task matrix for Milestone 1 (teams with more than one person)

Task	Thomas	Ivan	Zachary	Nicholas
Compare and select Technical Tools	GUI	APIs	Database	Speech Research
"hello world" demos	GUI	APIs	Database	Research Organization
Resolve Technical Challenges	GUI	API	Database	Speech Patterns and semantics Research
Compare and select Collaboration Tools	Organization	Task Calendar	Communication	Documents
Requirement Document	Write 40%	Write 20%	Write 20%	Write 20%

Design Document	Write 20%	Write 20%	Write 40%	Write 20%
Test Plan	Write 20%	Write 40%	Write 20%	Write 20%

Approval from Faculty Advisor

- "I have discussed with the team and approve this project plan. I will evaluate the progress and assign a grade for each of the three milestones."
- Signature: ________________________________ Date: ________