UNIVERSITY OF PUERTO RICO AT MAYAGÜEZ
DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

Panda Code Review

A PROJECT PROPOSAL SUBMITTED AS A PARTIAL REQUIREMENT OF THE COMPUTER ENGINEERING PROJECT DESIGN COURSE ICOM-5047

by:

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For: Professors Nayda Santiago and José Fernando Vega
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Executive Summary

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1. Problem Statement

2. Project Antecedents

2.1 Previous Work Experience

The members of Team Aguacate have known each other for several years, many of which have been spent developing project for several courses and extracurricular activities, such as programming competitions [mencionar competencias, hackaton de samuel y daniel, proyecto d micro2]. These previous experiences have allowed the team to build their teamwork abilities.

Since there are several online judges for programming competitions, and since they have been through the experience of having to submit code for programming labs, the team came up with the idea of using something similar to an online judge to facilitate not only their lifes by making an easier tool to turn in programming assignments and getting grades faster, but also the instructor's that have to grade hundreds of these.

2.2 Similar Projects

In 1994, University of Maryland presented Kassandra: The Automatic Grading System [1]. As the title suggests, Kassandra is an automatic grading system that is used for grading assignments in scientific computing. This system is used by students to check the correctness of his/her program assignments. This is achieved by comparing the program output with the expected result.

A few years ago, a teaching asssitance (TA) for the Data Structures course and former student at our University, José Santuche, developed a small script that would checkout his students' code, run some tests and compare the results.

[mencionar que integramos d estas cosas en nuestro proyecto]

Panda Code Review (PCR) differs from the previous efforts because it is web based instead of a desktop application. PCR aims to provide a complete grading tool that, in addition of correctness checking, it will include code quality checking, in-line commenting capabilities for the TA to put comments if needed, an easy way to upload code, among other distinctive features.

[convencer de que esto es mejor]

[mencionar los estandares y regilaciones relacionadas a la ejecucion del proyecto]

3. Objectives

3.1 Objectives Outcomes and Metrics

To achieve the code review system, the team will accomplish the following objectives in the next 2 months:

- Create a web application front end interface.
- Create a testing framework.
- Create a code quality framework.
- Create an accounts and repository module.
- Create a Backend API for communication between the front end and the quality and testing frameworks.

3.2 Deliverables

4. Managerial Approach

4.1 Meetings and Work Hours

Team Aguacate will have meetings every Tuesday and Thursday from 3:00 pm to 4:00 pm to discuss progress reports and project details. In each meeting, each member will state their progress, any needs he/she might have and if their schedule has changed. Work hours on assigned tasks will occur every Monday, Wednesday, and Friday from 9:30 am to 11:20 am unless there is a seminar scheduled for that day. Other work hours will be every possible day from 6:00 pm to 9:00 pm, minimum.

4.2 Team Management

The meetings will be as described above and other meetings will be scheduled when needed. One of the purposes of these meetings is to make sure that each team member is aware of the other members' progress and concerns. Changes to these hours are to

be discussed and decisions will depend on majority vote and team leader opinion. Each member will work in at least two modules.

4.3 Testing Restrictions

4.4 Documentation Standards

See Appendix D.

5. Schedule

A Gantt chart showing the project schedule is included in Appendix A

6. Personnel

6.1 Skills Required

Table 1: Work Distribution Table

Skill Required	Nelián	Samuel	Daniel
Project Management and Team Organization	Lead	Assist	
Repositories Creation			Lead
Code Result Checker	Lead		
Code Quality Checker		Lead	
In line comments	Lead		
Web Front End			Lead
Database Design?		Lead	
Diff tool		Lead	

For a more detailed list of requirements and task distribution see Appendix F as well as the Gantt Chart included in Appendix A.

6.2 Training Need

6.3 Consultancy Resources

- Front-End Web Development
  - Consultant Expert: César Andreu

[legal reqs or conditions relared to personnel needed eg NDA]

7. Resource Requirements

7.1 Required Resources

7.2 Resources Provided

8. Budget

8.1 List of Components

8.2 Project Cost

9. Assessment Methods

To help manage the project and collect information on each member's individual progress on their tasks, the project manager decided to use Zoho Projects. This tool allows to divide tasks. It also helps to know which tasks are still to be completed, and lets each user specify how much they have progressed in a specific task. The team will also have a Git repository where all the code that has been written will be stored, so that progress can also be measured from the amount of code already written. Project reports will also reside in a Git repository.

See Appendix C.

10. Risk Management

Table 2: Work Distribution Table

Risk	Probability	Impact	Actions
Loss of Data	Low	Low	Backup repository will be used to store code and data. Images of VMs will be on the cloud.
Developer's Workstation Breaks	Medium	Medium	University's computers will be used instead. If necessary and budget allows it, developer buys new workstation.
Hosting Infrastructures Goes Down	Low	High	Work will still be performed on local workstations and as soon as infrastructure is back online, deployment is done with never version.
Natural Disaster	Medium	Low	Using revisioned repository each developer can safely work remotely. Moreover, if possible online meetings will be held.
Team Member Gets Sick	Medium	Medium	If team member is unable to work, task distribution will be delegated considering tasks priorities and their ability to block other tasks.
Team Member Withdraws From Class	Low	High	Agreement has been reach that if team member withdraws from class they must still collaborate on the their respective project part. If unwilling to cooperate, task delegation will have to be performed. Higher working hours will be needed.
Out of Budget	Low	Medium	Funding will be needed from different source. Team's personal money will be used as last resort.

11. Impact and Other Issues

11.1 Commitments

11.1.1 Project Scope

11.1.2 Legal Issues

12. Market Overview

12.1 Potential Customers

12.2 Current or Potential Competition

12.3 Competitive Advantages

13. References

[1] urs von Matt, “Kassandra: the automatic grading system,” in *ACM SICUE Outlook*, vol. 22, pp. 26–40, jan. 1994.

Appendices

A. Schedule

B. Team Aguacate Members Biographies

B.1 Nelián E. Colón Collazo

Nelián E. Colón Collazo was raised in Orocovis, Puerto Rico. She is a senior student currently pursuing her bachelor's degree in Computer Engineering at the University of Puerto Rico at Mayagüez. Nelián has a passion for programming, that's why she is currently specializing in Software and is always participating in programming competitions. She has been involved in undergraduate research both in her University and in the University of Texas at El Paso, and has done two summer internships at Honeywell Aerospace and Harris Corporation. Nelián also likes to be involved in leadership positions. She is currently the ACM-ECE's treasurer and the Tau Beta Pi - PR Alpha's Computer Engineering Representative. Appart from being a programmer, Nelián is also a musician. She plays the Puerto Rican Cuatro and Tiple with her well-known father, Edwin Colón Zayas.

B.2 Samuel A. Rodríguez Martínez

Samuel A. Rodríguez Martínez was born Chicago, IL, United States of America. He moved to San Juan, Puerto Rico when he was 2 years old. While at San Juan he developed his passion for software development, and enrolled for a Computer Engineering B.S. degree at the University of Puerto Rico at Mayagüez. While at the University he has been involved in undegraduate research, and was given the opportunity to perform an undegraduate research project at the University of California at Berkeley. He has also done two internships at Google Inc. in Mountain View, CA, and is currently finishing his final year at the University.

B.3 Daniel A. Santiago Rivera

Daniel Santiago is currently a computer engineering student at the University of Puerto Rico, Mayagüez. He is passionate about programming and interested in mobile, backend,

and web development. Daniel likes working with emerging technologies such as Node.js and MongoDB. In his free time, he enjoys cooking, running and assembling gaming computers.

C. Progress Assessment

D. Documentation Standards

D.1 Web Application

D.1.1 General Standards

Application must meet the following general standards:

- Must be easy and intuitive to use for the targeted audience.
- Must use styles that are consistent throughout the application and withing the associated website.
- Must function in a logical manner for the targeted audience.
- Must adhere to industry best practices.

D.2 Minimum Browser Standards

Web application must function and display properly in the x browser versions.

D.3 Application Testing

Web applications and sites must be thoroughly tested in all required browser versions. They must be thoroughly tested in screen resolutions of 800 x 600 and 1024 x 768.

D.4 Database Standards

?

E. Project Cost Details

F. Required Skills