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Deliverable I: Project Proposal

I Abstract:

Team 13 is participating in developing the Spartan Course Analysis & Matching (SCAM) application. The members of Team 13 are Mark Casapao, Christian Timbol, Preyrna Yadav, and Hiep Nguyen. Our goal is to develop a unique web application that delivers on the design and requirements outlined in the proposal.

iQiQ, LLC is an industry leader known for many mobile applications that satisfy customers with simple user interfaces and effective algorithms. iQiQ has decided to work with San Jose State University's engineering department for the courses CMPE 131, SE 131, CS 160, and CS 161. Students in these courses are expected to develop the recommended SCAM application. SCAM's requirements include safety and security and is catered only towards the SJSU student community. It will be designed to assist students in gathering information on other student with mutual courses, forming study groups, and finding aid with anything involved with their academic schedule.

There are many ways that SCAM is different than the other existing applications that try to connect students. For example, social media applications, such as Facebook, as well as student portals, such as SJSU Canvas, are utilized by students in order to create a social network that will assist them outside of the classroom. Opposing arguments say that students can look up other

students via social media and student portals and connect with each other to find information on classes, majors, and collaborations. Even though social medias and student portals offer a lot of utility, the problem is that the specifications are lost. Social media does not provide direct access to information about other students and their respective courses and requires the type of communication that may delay any possible planning for upcoming courses. For example, the Facebook database is too vast. There can be over ten groups just for SJSU scheduling and a student may not be able to locate the proper information. Also, it is not efficient to ask every single person for their schedule just to find someone with similar classes. Moreover, student portals lack an actively used messaging system that is commonly used with the average college student. The SJSU community lacks a service that provides fast, efficient information with the ease of communication with peers.

SCAM will be introduced as bridge to close the gap between social media and student portals, allowing students to simultaneously interact with one another and maintain a portable set of information about their enrolling courses. As a well defined website, students will be capable of uploading their current and tentative schedules in a network specified towards student schedule interactions. The website can provide portable access to all students and allow them to exchange information relevant to their classes when their schedules are matched. In addition, students will be able to seek and offer help, provide feedback about specific courses, and other possible utilities that can be done through the combination of a network with direct access to a student's enrollment info.

II High Level Requirements:

1. Students must be able to create and maintain a SCAM account.

There must be a condition that only students can create accounts which will be using their student emails and student ID.

2. Students must be able to maintain secure and private information on their accounts.

All important personal student information must be protected and kept from being exposed to the public unless given consent.

3. Students must be able to view and manipulate their current and tentative schedules.

Every student should be able to see and edit their own student schedules directly from the well-defined website.

4. Students must be able to view and interact with other student's schedules.

Every student should be able to see the schedule matches, given the privacy allows, and be given a list of options that allow them to interact with the student whose schedule they matched.

5. Students must be able to gather more information about their enrolled classes.

Any feedback, recommendations, textbooks, prerequisites, or a certain amount of data about each class should be available for students to obtain.

6. Students must be able to provide more information about their enrolled classes.

Students who are enrolling in a course should also be able to provide feedback about their respective class.

7. Students must be able to communicate with each other directly through the website.

It is a necessity for students to be able to collaborate or communicate through an inbox, exchanging direct messages, or maybe even a discussion board.

8. Students must be able to have immediate access to a list of chosen contacts.

If students can communicate with each other, they should be able to maintain a list of contacts that they want immediate and frequent access to.

9. Students must experience a user friendly and easy-to-use interface.

All student applications should be easy to read and immediately understood for all of its functionalities and features.

10. SCAM must be capable of generating statistical data and reports.

Specific types of data about the SJSU community must be able to be gathered and interpreted without violating any privacy policies.

III Cost Estimation:

When planning a project, costs need to be considered as early as possible to ensure that the project is feasible with the available budget. Figure 1 below is an excerpt from an Excel Workbook that contains the estimated costs along with cost information for this project.

The first cost considered is the labor cost for the four engineers that will be working on this project. These four engineers will receive \$36 per hour as compensation. The projected timeframe of the project is 10-12 weeks, so the labor cost for these four engineers sums up to around \$69,120. The next cost involved with this project is for food that is planned to be served at Friday meetings, which will cost around \$50 each Friday. This leads to the estimated cost of

food to be \$600. Since the four engineers will need to commute to the work location, the commuting cost is also considered. The four engineers live relatively close to the work location so the daily commute would be around 5 miles per day. If gas is sold at \$3 per gallon and the engineers average 25 miles per gallon, the total estimated cost for all employees' commuting is around \$201.60.

Another estimated cost revolves around the computing costs needed for this project. Since developing this web application isn't very hardware-heavy, a standard Dell laptop is sufficient and this laptop would cost around \$800. Since four engineers would need this work laptop, the computing cost would cost \$3200. The software to be used for this project would be SublimeText, a text editor, and Bitnami WAMP Stack, a development environment that includes Apache, PHP, and MySQL. Since Bitnami WAMP Stack is free, SublimeText was only considered for the license which is \$70 each. Finally, after doing research, it was discovered that the average annual employer cost for an individual employee's insurance is \$5179. Since there are four employees, the insurance cost is estimated to be \$20,716. So in total, the estimated cost for this project is **\$94,117.60**.

However, since these costs are estimated, there are major categories against the cost estimation that affect its actual cost. For the labor cost, a variable could be different hourly wages per employee and/or bonuses that they may receive which would affect the estimated labor cost. For food, the company may choose to not provide food, which would negate the estimated food cost. When calculating the commuting cost, other methods of transportation could be considered instead of driving, such as public transportation or even biking. Also, commuting may not be required for work as remote meetings may be allowed by the employer. For the

computing cost, the employer may allow the engineers to use their own laptops, so the employer wouldn't have to buy specific work laptops for the employees to use. For the software license cost, other software may be considered and that software may require license fees that weren't considered in this cost estimation that is just comprised of SublimeText. Also, regarding the insurance costs, the employer may consider offering cheaper insurance opportunities that cost less than the average insurance cost.

In conclusion, the cost estimate gives us the general idea of the project's financial demands. However, the cost estimate is just an estimate and will be revisited to further refine its details.

ESTIMATED COSTS		NOTES	CATEGORIES AGAINST ESTIMATED COST
Labor Cost (4 Engineers)	\$69,120.00	\$36/hour for 4 employees and this project is estimated to be 10-12 weeks	Different hourly wages per employee? Bonuses?
Food (12 Friday meetings)	\$600.00	\$50 every Friday so \$50*10-12 weeks	Don't provide food?
Commuting (per 12 weeks)	\$201.60	(\$3/gallon * gallon/25mi * 5mi/day * 5days)*4 people*12 weeks	Other methods of transportation? Remote meetings?
Computing	\$3,200.00	4 Dell laptops at \$800 each	What if they can use their own laptops instead? (Personal equipment)
Software License	\$280.00	\$70/Sublime Text License + \$0 for Bitnami WAMP Stack	Database cost?
Insurance	\$20,716.00	\$5179 is annual employer cost for an individual employee	Cheaper insurance opportunities?
TOTAL:	\$94,117.60		

Figure 1: Estimated Costs for SCAM Project as of February 11th.