CIS 341 Project Proposal – Course Project Proposal

**Management Presentation** – Convince managers that the proposed project should be funded. The proposal is a verbal presentation – no slides are permitted. This is meant to be a quick description of the project.

The following template will be used during the presentation:

**What Problem are you solving?** \_\_\_\_\_

**• Describe the Existing System**

The current parking management system is outdated and can be improved. It is being hosted by a cloud vendor that is not keeping up with innovative technologies. To change this, the new director of parking services wants a new system that will integrate with the existing system for automated ticket payment and license plate recognition. The minimum requirements for this new system are license plate recognition and a mobile payment interface.

There are few things that can be improved in the current parking management system:

Firstly, the current system does not have a way for parking enforcement to automatically identify vehicles with parking violations such as having no permit or expired parking times.

Secondly, the current system only allows for three ways to pay for parking, which is through:

1. a parking machine.
2. a parking meter.
3. a mobile app.

The problem with these three options is that the driver must get out their car to pay for parking and not all people have smartphones. A fourth way of paying for parking can be introduced in which is it automated.

Lastly, the current system also does not have a way to view available parking around campus. During peak hours, finding a parking spot can be a hassle and this can be problematic for students trying to be in class on time.

What we are proposing is a new improved system that includes an automated way to pay for parking, the ability for parking enforcement to recognize license plates, and a way to track available parking around campus.

**• Describe the new improved system**

For the new improved parking management system:

To enforce parking, cameras will be installed at the entrance of each parking lot and will record images of license plate as vehicles pass through. This license plate recognition technology will automatically notify parking enforcement of vehicles with parking violations and issue citations. This technology could be used to restrict access to specific parts of the campus, where access is only granted to specific license plates.

To automate a parking ticket purchase, the student must either first preload money into a parking account using their school ID, similar to preloading money into a printing account, or they can buy a semester pass.

Both of these options can use a RFID transponder tag. The RFID will be read and checked into a database upon entrance. For the preloaded students, the time that they spend inside the parking lot is the time they will be paying.

For guests or students who forget their transponder/sticker there will be a station similar to the one that is used now for temporary printed passes.

To implement a system to track available parking, there are two options:

* 1) Install a sensor at the entrance of each parking lot which simply increments and decrements the amount of cars that pass through. Also, in the parking garage, install a sensor at the beginning of each decline and incline to show how many are on each level. This number can be shown on the mobile app as well as the entrance to the garage or parking lot.
* 2) Install a wireless sensor on every parking spot on campus to detect vehicle occupancy. The benefit is accurate reporting and allows for a mobile interface where the driver can see exactly where a parking spot is free. This mobile interface can be integrated into the CSUSM app. The downside to however, is that it will take more time and cost more to implement than the first option.

Each time the status of a parking spot is changed, the information is relayed to a server, which updates the available parking count on digital displays inside the parking structure, outside parking lots and on the mobile interface.

The system would be moved from the old vendor to Amazon Web Services as they are the leading cloud computing infrastructure and can keep up with new trends in technology.

**• Describe the pain points you’re solving – as major functions \_\_\_\_\_**

The pain points we are solving is convenience, time and frustration when searching for a parking spot and paying for parking

Implementing such a system will reduce traffic by shortening the distance looking for an available parking spot and also allow more students to arrive to class on time.

**Who are you? Who is on your team? What roles did you assigned to each team member? \_\_\_\_\_**

Chris Banci and Kevin Truebe. We will be working on each section of the project as a team.

**• What actions will you take to reach consensus as a team?**

We will reach a consensus as a team by talking things out, being mindful of each other's ideas and addressing each other's concerns. if things don't work out, the professor will be notified.

**Why is the project technically feasible?** \_\_\_\_\_

It is technically feasible because the budget is unlimited and the technology already exists - it’s just a matter of implementing it. This improved parking management system will continue to be of great use in the future as the campus becomes more populated with students.