Project Proposal

CIS 330

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1. **Brief history of the organization**

The University of North Alabama Police Department was instated in January 1956 when the university recognized the apparent need for a police force due to the growing number of students. The department's goal is to provide students with the highest level of safety in every part of campus which includes the parking lots that students and faculty use every single day. Parking services are located within the campus police department and serve to enforce proper parking to facilitate safety on streets, lots, and in the parking deck.

1. **Description of the current system being used**

Students, faculty, and visitors drive around campus, searching from lot to lot until they can find an available parking spot. UNA Transportation Services uses a combination of vehicle license plate numbers and printed permits to properly enforce campus parking protocols.

1. **Include a Problem Statement section. Detail the problems and limitations of the current system**

Students, faculty and visitors have no way of knowing whether a given parking lot is full without having to drive through said lot and search for a parking space. Additionally, it is difficult for students to anticipate the level of traffic on campus before reaching campus. Not only is this frustrating, but it also causes tardiness or even absence from classes, meetings and events all together. Additionally, hanging physical permits are often inconvenient in determining permit compliance and illegal parking. UNA Transportation Services must traverse the university’s lots to monitor parking and issue tickets. Likewise, those parking must make sure their permit is always visible, as they will receive a ticket if it becomes in any way obstructed.

1. **Include a Feasibility Study section (not shown in the example below) Note that this is where you examine the economic, technical, operational, legal, and time feasibilities of the project.**

Economic Feasibility

The average cost to install license plate recognition camera ranges between $400 and $1000, depending on the quality and features included. Factoring in that several of the university's lots have more than one entrance and exit, it would cost roughly $60,000 to $70,000 to install the sensors. Average costs to set up a database range from $50,000 to $150,000, and the estimated cost of developing an app would also fall into a similar range, depending on how advanced the features would be. Maintenance costs would also need to be budgeted for, which can be estimated ranging between $5,000 to $10,000 annually. Factoring in these costs with the higher ranges in mind, the estimated total cost could be placed at around $400,000.

Technical Feasibility

The elements needed for the system would include cameras to collect parking data and license plate information. The collected information would then be sent to a database system capable of storing the data for UNA staff to access. This means some form of wireless connection (Wi-Fi, etc) would be required to transfer the data from the cameras to said database. A user portal of some degree would also be needed to allow UNA staff to monitor and oversee the parking data within the database. Additionally, a mobile app that allows students to see parking availability would also need to be developed.

Legal Feasibility

There would be several legal aspects to consider when implementing the system. Firstly, UNA would likely have to obtain permits for installing the cameras while also abiding by Florence’s local regulations and laws. Data privacy of UNA’s students and faculty would also be an important factor in the system’s application, meaning privacy laws would have to be considered. Also, the university would have to collaborate on agreements and contracts with the workers hired to install the system and abide by state labor laws.

Operational Feasibility

With the implementation of the new parking management system, UNA parking services would be able to more efficiently monitor parking violations such as parking in improper lots or utilizing unregistered vehicles and thus swiftly ticket those who have broken campus parking rules. Parking services typically only have two individuals patrolling campus parking to issue tickets. With this new system, parking enforcement will not have to rely solely on patrols to issue tickets which takes a significant amount of time due to the twenty-one lots. Instead, parking enforcement will be able to monitor parking digitally for parking in the wrong lot or without registration while using patrols for more serious parking issues such as parking on a yellow curb or parking against the flow of traffic. In turn, with this new proposed system, the university will be able to generate far more revenue from parking violations.

Time Feasibility

To maintain use of campus parking during the school year, the implementation of a new parking management system would need to start within the summer break since much less parking is needed during this time. Many students are either at home or taking summer classes online. Because of this teams can begin working on implementing new cameras on multiple parking lots at one time since the need for parking is drastically lower than when school is in session. Since there are twenty-one lots located on the campus, the bulk implementing new cameras must take place within the summer months. After the summer months, implementation can still proceed but must do so at a much slower pace. During the school year, lot cameras must be done one at a time to ensure adequate parking is still available for students and faculty.

1. **Conclude with the Project Proposal (Note: do not design the new system here.)**

Our proposal is to implement a parking space detection system for the University of North Alabama’s parking lots. The system will send parking data to a database which can then be analyzed by UNA. This data can be utilized to track permit compliance and illegal parking. Additionally, the data can be used to determine peak traffic times for event management. Our system will also connect to an app which students, faculty, and visitors may download to determine which lots are full and which lots they are allowed to park in. This will reduce the amount of time that students spend looking for a parking spot in the morning, therefore improving attendance which in turn will improve student grades. This will improve performance metrics for the University which can therefore improve funding in the future.

By using a parking space detection system, hanging permits will no longer be needed as our system can scan license plates to determine permit status. This will therefore eliminate the costs incurred from printing permits. Additionally, the parking app can allow students to easily renew, purchase, and manage their permits and pay fees. It can also provide reminders for payments and renewals. The app can also send notifications about upcoming events that may affect parking so that students can be prepared to arrive earlier.