**Team Charter**

Adviser: Mehmet Kurum, kurum@ece.msstate.edu

Team membership:

|  |  |  |  |
| --- | --- | --- | --- |
| Role | Name | NetID | Major (EE or CpE) |
| Leader | Drew Mohundro | jdm1345 | EE |
| Member | Alex Bigej | anb832 | EE |
| Member | Preston May | pwm78 | EE |
| Member | Carol Pollard | cp1614 | CpE |
| Member | Garrett Smith | gas203 | CpE |

**Team Name: RFID Ticketing System**

**Mode & Frequency of Communication:**

Our team will communicate through text using a Discord server and will perform group calls through Discord two or three times a week. Our team does not plan to meet in person until there is hardware that needs to be worked on. Our group will also use Microsoft Teams or Webex to hold conference calls with our adviser at least once a week.

**Submission Schedule:**

We plan to review all material at least three days before the deadline as a team in order to give our team time to perform an internal review. Barring any major setbacks our team plans to have subsystem prototypes in operation by the end of the semester. The subsystems are as follows: the ticket(s), signal sensor/processor, back end database, overhead thermal scanner, and visual alarm system. The signal sensor and scanner should begin to function with the thermal sensor by the end November. The functionality with the database for which tickets were purchased may need to be completed in the second half of senior design. Our team plans to order components by the end of September so that our team will have two months to work on the subsystems before the November deadline.

**Team Roles:**

Drew – Detect distance from scanner to ticket and aid in identifying tickets

Alex – Work on error signaling system to notify security of issues.

Preston – Identify distinct tickets within the sensor field/interconnect sensor and Raspberry Pi systems

Carol – Developing the database for the ticketing system and handling the backend of the signal system.

Garrett – Thermal Imaging subsystem lead. Raspberry Pi hardware support.

**Potential Obstacles:**

There are a few major design challenges that accompany products like ticketing devices which interact directly with users. First and foremost, our team will be applying technology that most of us lack experience with. This type of implementation is also relatively new to the field we are targeting which further adds to this learning curve. Some of the technical aspects of thermal imaging, handling group entry, distance between devices, and security integration will create a few challenges for us. Many of these challenges can be alleviated by delegating subsystems to individual team members for expertise and efficiency. Logistically, we will face challenges with both acquiring equipment and determining when and where to meet when working with hardware amid COVID-19 concerns. If faced with quarantine restrictions, our group will work remotely with video call as necessary until in-person work may continue safely.

**Conflict Resolution:**

Our team plans to work as a group to resolve any disagreements. Given our prior classroom experiences with one another, our team members are on good terms and have agreed to give honest feedback throughout the semester. If a disagreement should arise in regards to the design of our prototype then we plan to discuss the best course of action amongst our team members. If an agreement cannot be reached unanimously we should have a vote, where 3 votes in one direction decides the course of action. If a disagreement cannot be resolved in the group then we would reach out to our advisor. If a team member needs assistance on their responsibilities they should reach out to the other team members well before the deadline. Additionally, if a team member repeatedly fails to fulfil their responsibilities as a team member, the other team members may discuss the root cause and how to move forward. For document submission and grades, the team has agreed to refrain from blaming any one member for shortcomings, instead taking responsibility as one group for any undesirable grades or outcomes.

**Additional Comments or Concerns to Discuss with Dr. Jones & Ms. Nordin:**

Ensuring our project is cost effective and making sure we do not lose the big picture over the small details.

**Signatures**

Drew Mohundro, jdm1345

Alex Bigej, anb832

Preston May, pwm78

Carol Pollard, cp1614

Garrett Smith, gas203