

ECE 445 SP23
Team Contract
Autonomous Card Dealer

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Project Description:

At a high level, we want to make the card game playing process more effortless and fair by replacing the dealer with a device. There are a few different subsystems of this project including the card shuffler, card dealer/distributor, and the user interface. The card shuffler allows the games to be more fair because it gets rid of human error that is often present with shuffling. The card distributor would basically replace the dealer by being able to rotate and shoot out cards to certain locations on the board. The user interface for this would be some kind of buttons that allows the user to control turning the device on and off, the number of players, the game mode, and starting/pausing the game, etc. This will solve the problems of current human dealers by making the whole process a lot more fair.

Project Goals:

In order for the team to be successful, we would have had to achieve the high level requirements that we have disclosed in our project proposal. This includes shuffling a set of cards evenly, distributing the cards to the players and setting up the playing field, and a functioning user interface with a display and buttons for parameter adjustment. On the software side, this would mean that we would take in the ultrasonic readings correctly to determine how far away players are, we would rotate the device the correct amount, and we would properly link the user interface buttons with our software. On the hardware side, we want to make sure that our shuffling motors are operating properly and have enough torque to actually shuffle the cards correctly. We also want to make sure that our ultrasonic sensor is mounted on the device properly so it can get readings. Lastly, we want to make sure that the card distributor can launch the cards out with enough torque so they can go as far as needed. If all of this works correctly that means that we have a fully functioning card shuffler and dealer which is what we had initially envisioned for this project.

Expectations (ground rules) for each member:

1. **Communication.** Communicate through discord and text messenger to discuss any matters throughout the semester and share updates or questions. Meet weekly and respond within 6 hours when sent a message or asked a question. Email Professors and TAs in a timely manner when questions or conflicts arise.
 2. **Participation.** Each team member shall do their fair share of work. Regardless whether the work is done individually or together as a group, any designated tasks should be completed on time to ensure the success of the project.
 3. **Accountability.** Each team member should keep the team up to date on individual tasks. If a team member is not able to meet their obligations, firstly communicate that with the team, and if that does not resolve to a solution, discuss the situation with our Teaching Assistant. Weekly tasks split between the group members will be established by the end of the weekly TA meeting.
 4. **Documentation.** Each team member should keep a well documented notebook/github repository. A dedicated Google Drive folder shall be maintained, consistently updated before and after the weekly TA meetings.
 5. **Testing.** Video footage, pictures, and measurements of test cases for each of the subsystems shall be recorded and uploaded to the Google Drive folder under “Test Data”.
 6. **Feedback.** Give feedback during our weekly meetings on the performance of each member. If any negative feedback is received, actively improve upon it.
 7. **Respect.** Respect your teammates' thoughts and opinions. Understand that they also have other commitments outside of this class that they have to also attend to. Give team members the benefit of doubt instead of jumping to conclusions when something goes wrong.
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Roles:

Do you see this team performing well because everyone works together and contributes equally? Are there certain aspects of the project that some teammates excel at? Can tasks be spread among individuals to optimize progress toward the final product?

We think that this team will perform well because everyone works really well together and everyone does their fair share of work. The tasks can be spread out evenly among the team when the opportunity arises. We will all work on certain things together such as the PCB and the written portions of the class. However, we could split up things such as one person working with the ultrasonic sensor, another working with the card shuffling mechanism, and another person working on the card dealing mechanism. There are other things that can be split up between the group, but these are the main three. We believe that splitting up the project will allow us to finish a lot more efficiently.

Project Meeting Time(s):

The team has scheduled a weekly meeting with the TA on Wednesday's, 1:00-2:00pm. The team has also scheduled a non-TA weekly meeting on Monday's 7:00-8:00pm to prepare materials for the week ahead. An ideal weekly lab meeting time for our group would be Thursday's, 6:00pm-8:00pm.

Agenda:

The agenda will be set by us and our TA. The records and progress reports will be kept by our individual notebooks. The team will ensure that it stays on track during the semester by meeting weekly on Monday's 7:00-8:00pm to prepare materials for the week ahead and ensure everyone is on the same page about the weekly goals. To track our progress, our team plans to use Google Calendar to track deadlines, a shared Google Drive folder with a weekly updated "Progress Reports" file. When making a decision, a consensus will be reached based on majority vote. Ideas will be prioritized based on alignment to the goal of the project and the feasibility to implement within a reasonable time frame.

Process and penalties for dealing with team issues: .

When ground rules are broken, we will first discuss amongst ourselves as a team and figure out how to solve the problem. We will try and solve the solution as a team first, but if we don't come to an

agreement, we will escalate it to the TA. If even this doesn't work, we will have to raise it up to the professor.

End-of-term agreement on using final peer assessment for grade adjustment:

We all agree that this contract should hold the team accountable.

Signatures:

I affirm that I participated in generating this team charter and that I will abide by its contents to the best of my ability. Furthermore, I understand that failure to meet the expectations expressed here can lead to the stated consequences.

netID: adamjn3 (digital) Signature: Adam Naboulsi Date: Feb 20, 2023

netID: rohite2 (digital) Signature: Rohit Chalamala Date: Feb 20, 2023

netID: rbalita2 (digital) Signature: Ralph Balita Date: Feb 20, 2023