**Final Project Proposal**

**Year: \_\_\_2017\_\_\_ Semester: \_\_Spring\_\_\_ Team: \_\_\_8\_\_ Project: \_\_Barbot\_\_\_**

**Creation Date: \_\_1/12/2017\_\_\_\_\_\_ Last Modified: \_\_\_\_\_1/12/2017\_\_\_\_\_\_\_**

**Team Members (#1 is Team Leader):**

Member 1: Yudi Wu Email: wu553@purdue.edu

Member 2: Mengshi Feng Email: feng96@purdue.edu

Member 3: Junjie Wang Email: wang1764@purdue.edu

Member 4: Siyi Cai Email: cai71@purdue.edu

1.0 Project Description:

We are going to build an automatic bartender. We decided to construct website user interface. People can go to the website by scanning QR code. In the interface, people could choose different kind of drinks from the menu they wish to purchase, also, people can DIY their own cocktail by choosing different drink and the volume as they want. The chosen drink will then be automatically piped from the required internal canisters and, if the drink is composed of more two or more liquids, they will be combined before displaying the finished product to the customer.  The automated bartender is not meant to replace human bartenders; rather, it is designed to enhance the mixology experience[1].

2.0 Roles and Responsibilities:

* Team leader

Yudi Wu is going to undertake the leadership role for this project, having past experience in leading ECE 362 project. He will need to focus on maintaining the even division of labor, consistent communication and accountability for deadlines. Besides leadership, he will be working with other teammates on programming the microcontroller and the user interface.

* System engineer

Siyi Cai has had experience with system design during ECE 362 project. She had been drawn the block diagrams for several past projects. From the experience from the ECE 362, she has some idea to choose the most appropriate components to satisfy the PSSC. For these reasons, Siyi will be the systems engineer for the team, responsible for investigating mechanical techniques and for ensuring the coherent interface of project components and packaging.

* Hardware engineer

Junjie Wang has had experience in designing and debugging hardware issues in his ECE 362 junior design. He also has experience in designing PCB. For this reason, Junjie is best suited to be our team’s hardware engineer, handing things such as the design of the electrical schematics and PCB layout, as well as electrical requirements.

* Software engineer

Mengshi Feng is going to be the software engineer. He has solid knowledge of coding and common language. He is responsible for implementing the source code, testing and making sure the functionality of software corporates with hardware part. In addition, since he has the IOs application development experience before so he will also be taking charge of our mobile application developing.

**2.1 Homework Assignment Responsibilities**

YW = Yudi Wu JW = Junjie Wang MF = Mengshi Feng SC = Siyi Cai

|  |  |  |  |
| --- | --- | --- | --- |
| *Design Component Homework* | | *Professional Component Homework* | |
| 3-Software Overview | YW | 9-Legal Analysis | SC |
| 5-Electrical Overview | JW | 10-Reliability and Safety Analysis | MF |
| 7-Mechanical Overview | SC | 11-Ethical/Environmental Analysis | JW |
| 8-Software Formalization | MF | 12-User Manual | YW |

3.0 Estimated Budget

|  |  |
| --- | --- |
| **Mechanical Parts** |  |
| Liquor dispenser | $60 |
| mental rod | $40 |
| packaging material | $200 |
| Shipping cost | $200 |
| **Electric Parts[2]** |  |
| Microcontroller | $50 |
| Raspeberry Pi | $40 |
| PCB | $50 |
| Motor | $50 |
| Wire | $50 |
| Total | $740 |

4.0 Project Specific Success Criteria

1. An ability to control the stepper motor using microcontroller, which could send the cup to desired position.
2. An ability to display on an LCD the current state of the product using microcontroller.
3. An ability to control the mixing volumes and output volumes of varying fluids from connected dispensers using the microcontroller.
4. An ability to accept and process drink orders via GUI.
5. An ability to produce customized drinks from user orders.

5.0 Sources Cited:

[1]Automated Bartender. (n.d.). Retrieved January 12, 2017, from https://hackaday.io/project/12260-automated-bartender

[2]Small Parts. (n.d.). Retrieved January 12, 2017, from https://www.amazon.com/Small-Parts/b/ref=bl\_dp\_s\_web\_3041233011?ie=UTF8&node=3041233011&field-lbr\_brands\_browse-bin=Small%2BParts