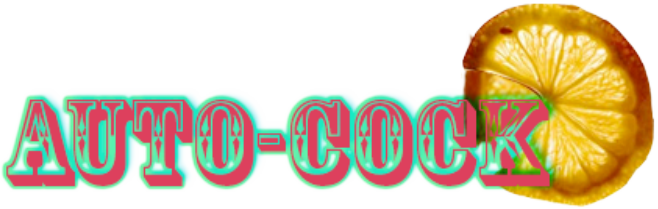

COMP30050-2008

POPOSERS : TEAM DRAGON

Team Dragon are:

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Introduction:

People who go out to pubs and clubs quite frequently complain that “you can’t get a good cokctail anymore,” and the rant continues on until somebody tells them to make it themselves, and generally they can’t…. The idea of this project is to construct an automatic cocktail maker. The product would be built using the Lego mindstorm range of robotics. The project would encompass a Point of Sale interface that sends orders via Bluetooth to the Auto-Cock, your one stop shop for delicious cocktails.

Overview:

We plan to implement a graphical user interface implemented in the java programming language that will provide a menu of the cocktails available for purchase. The user will then choose the desired beverage from the selection, a request will be sent using Bluetooth technology to the Cocktail Maker; the Cocktail Maker will then proceed to make the drink.

We have come up with a novel idea for the robot to fetch the drink. If the drink is a pre-preprogrammed recipe then a message will be sent to prepare that drink. However if the customer wishes to create a custom cocktail they may choose to do so, in which case the robot will be able to comply and will proceed to create the drink in the order specified and to a level that will not overflow the glass.

The structural basis of the robot will be a sliding platform upon which a robotic cradle will be placed. This platform will be placed underneath a drinks holder that, when required, will halt under the required bottle. Once the platform has arrived underneath the appropriate beverage, the cradle will be raised and pressed against the drink optic and the measure will be poured in. The cradle will then be placed underneath an automated stirrer. If the structural integrity of the Mindstorms kit permits, we would also like to have a mechanism to deliver cocktails a la James Bond; Shaken not stirred. The feasability of the afformentioned shaker cannot be judged until robot construction is completed, and tested for durability and structural integrity. The final stage of the beverage creation will be in its delivery. The drink will be placed upon a conveyor belt and deliverd to the point of sale where the customer can enjoy its deliciousness.

The robot will be constructed from a Lego Mindstorms set, however other pieces of hardware such as drink optics will need to be integrated to allow us to dispense the correct amounts of alcohol. We will tailor the menu to utilise the robot to the fullest of its potential whilst trying to add as many functions as possible.

Requirements:

Primary Goals:

- ✓ *The project must have a GUI based system at it's point of sale.*
- ✓ *The project must communicate orders from a laptop computer over Bluetooth.*
- ✓ *The project must produce an acceptable version of the listed cocktails.*
- ✓ *The project must make the correct cocktail as requested.*

Secondary Goals:

- ➢ *Stirring, Ice dispensing and shaking, however the last of these may prove unachievable due to the materials being used to construct the machine.*
- ➢ *Custom Cocktail Creation. The customer should be able to create there own cocktail from the drinks available provided the glass won't overflow with the selection.*

Tertiary Goals:

- ➢ *Keep a log of the last ten custom drinks and perhaps keep them in order of popularity.*
- ➢ *Make the overall project aethetically pleasing, something you wouldn't mind having behind a bar or in your house for parties.*

Technology:

The project will require a Lego mindstorms robotics set and various motors and sensors. It will also require a large amount of generic Lego pieces for construction. The project will require a laptop computer or pocket pc to act as the Point of sales terminal. The GUI will be programmed in the java language which can interact with the Mindstorm set via the RCX Port http://www.slewis.com/rcxport/ or we can now program the robot with java using leJOS http://lejos.sourceforge.net.

Roles:

The project has been broken into the following roles, however each team member understands the benefits of team work and have no trouble giving a helping hand to another team-mate if required. We have laid out basic roles for ourselves but will no doubt be interchanging and working on various aspects of development throughout the duration of the project. We have split the project into the basic roles of hardware and software. Individual responsibilities are laid out below.

Hardware team members:

Robot Design / Construction: David

This team member will be in charge of designing and construction the robot. He will also aid with the design of the hardware code as he will be the group member with the knowledge of just what the robot is capable of doing.

Robot Programming: Alistair

This team member will be responsible for programming the robot to interface with Bluetooth instructions and then perform the requested actions. He will program the robot to accept instructions to launch hardcoded recipes as well as user defined recipes from the Point of sales terminal custom cocktail screen.

Software team members:

Point of Sale GUI Designer: Alex

This team member will be responsible for creating a nice graphical user interface for the project. It should provide users with the ability to pick a desired cocktail and make their own.

Communications Designer: Lar

This team member is responsible for programming the interaction between the GUI and the Bluetooth transmitter/receiver. He will take the information entered by the customer via the GUI and code architecture to interact with the robot