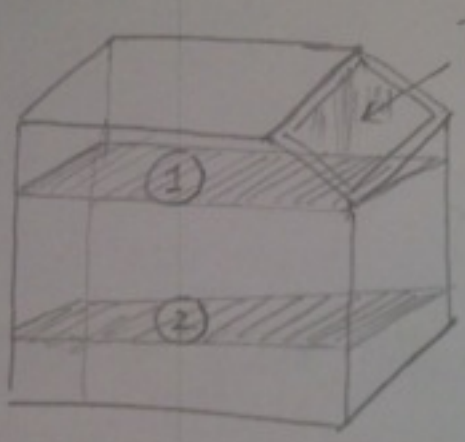
Improved Abstract

Team:Fantastic Four

Project: Automatic Serving System

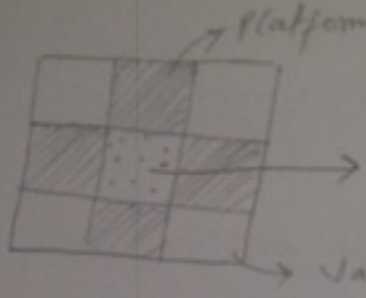
Implementation Steps:

- There will be a total of 2 layers each containing 4 platforms as shown in fig.
- The material needs to be purchased. most material made of metal.
- Tools needed for cutting and joining of different metal parts.
- Coding needs to be done for implementing command given via touchscreen to mechanical movement of parts inside and correct synchronisation. Mentors have suggested use of micro controllers which need to be further coded.
- Each platform contains clamps to hold the items in their place and will be simultaneously withdrawn as the platform reaches the top. (coding required). this will not allow items like a glass full of juice to topple.
- Mechanisms need to be developed for movement of parts. we have thought of using motor-pulley-belt system. 1 motor for lifting the platform up to the user and one main central motor for running the platforms.
- 1 gear and chain for each platform.
- coding for mounting the shaft on the particular gear for the platform that needs to be lifted leaving the others unmounted. Central motor connected to all the gears.Therefore all the gears would rotate but only the one having the belt mounted on it will move.
- There is a system for allowing the owner (not user) to place the items on the platforms.This will be done using the touchscreen. A password would be needed for doing this: each of the lower platforms moves into the side cavities and moves up by the common mechanism installed in the central cavity. the top layer of the device slides allowing all the platforms will be simultaneously revealed. This would allow for keeping the items on the desired location. coding for this is integrated in the touch screen display.
- Power source (battery) to be kept at the base of the device.



① - Layer-1

② - Layer-2



Top View of Layer

Timeline:

- Week-1: Purchasing the required components.Cutting of outer body of the device and platforms. making final draft of device mechanism.
- Week-2&3: Touchscreen and Coding (all moving parts and touchscreen)
- Week-4: Assembly of platforms on one face and moving systems on device. Assembling all the pulleys, motors and gears of one face and checking for their proper functioning in integration to coding
- Week-5: Assembly on remaining faces and final assembly and testing of device along with any other corrections.

Approximate cost of components:

Microcontroller: Rs.200
Metal: As per the market cost.
Pulleys, gears,motors and belts: As per the market cost.
Cutting tools: Will try to use those available within IITB.
Touch Screen Display: No idea.