Team ID- 127

Team members

Sanket Agrawal	7045800191	sanket7827@gmail.com
Mookund Sureka	7045800176	mookundsureka@gmail.com
Chinmay Talegaonkar	8879178724	chinmay0301@gmail.com
Harsh Mundra	8879153879	harshmundra97@gmail.com

Introduction

Our project will be a semi-virtual air hockey game. The puck will be a projected light spot on the screen, and our hands will serve as mallets for hitting it. The hockey table will be made from a projector projecting light on table.

Implementation

We will be taking a picture of table at each and every moment. That picture will be processed and will define the further trajectory of puck.The output from processing will be sent to projector which will project the game table. When the puck will reach the opposite side or more precisely near the hand mallet , by the use of a haptics actuator the puck will be hit and the game will continue like this.

Salient features

Haptics
Image Processing

Equipments

Projector-3000
Vibration motor-800
Table
IC-400
Chassis-500
Miscellaneous- 1000 (including extra IC's, wires, sensors,chips)

estimate: roughly 7000Rs.

Timeline:

Week 1

Main focus will be learning about image processing and haptics, which is the core of our project. Also, we will try procure all the required materials within a week from lamington.

Week 2

1st half of the week:

Will focus on the movement of the puck on the screen, and simulating it on the screen through external control from the laptop.

2nd half of the week:

Will devise an algorithm so that the physics of the game is effectively modeled.

Week 3

Will work on the image processing and haptics end of the project, i.e. using the algorithm for image processing and then including haptics in the project. Will be learning and trying image processing throughout the above 2 weeks also, as to get a feel of it and implementing successfully.

Week 4

Will assemble the project, see if any bugs are there. (there will be sure). Week 4 will basically be devoted to combining the work done in the above 3 weeks, hence all the debugging will be done in this week.

Week 5

Buffer week in case some major pain occurs, like if it takes time to find a component, or it takes time in learning something new.

The final project will look like the one made in following video :
https://www.youtube.com/watch?v=Ie9ribOouLg