ITSP – 2016

TEAM NAME – CRASH TEST DUMMIES

MEMBERS

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PROJECT NAME – 3D RACING

Description

The end product of our project will be a racing game console with VR headset that will give the player a real feel inside his car ! we also will develop an interface application between the smartphone and PC.

Components required

Computer with the racing game installed

Arduino uno

Toy racing wheel

Racing pedals

Switches for the pedals

Sensors for the wheel

Google cardboard

Headphones/earphones

Hardboard /wood for pedal and steering wheel base

Estimated cost - Rs 9,000

Skills required

>Ability to do serial communication with the pc via the interface application for the control of the game.

>Ability to change the firmware of the arduino to mouse/keyboard.

>Use sensors to track the steering wheels movement.

>Phone interfacing for the laptop display to be streamed.

Implementation steps:

Week 1: >Get equipped with the required tools: research, components, softwares.

>This includes basic data gathering, research work and searching for the required hardware and software resources.

> Be ready with the final design and get it approved by the mentors

Week 2: >Get the wheel motion sensors to measure angle of rotation and to send signals to the arduino respectively .

>Code in the atmega16u2 microcontroller of the Arduino to change its firmware.

Week 3: >Create a prototype for a keyboard.

>Buy a google cardboard and use it with Cardboard app.

>Buy a wheel and set up switches at appropriate places for controlling the game.

Week 4: >Set up interfacing with the mobile so as to display the laptop screen on the phone.

>Put together all the components into the steering wheel and the pedals and work on its aesthetics.

> put together the components for the pedals i.e the base and the required buttons

>Give finishing touch to the project.

>Complete the documentation and make a video showing its working.

What we expect to learn from this project:

>Know how to use the wheel motion sensors

>Learn how and what the smaller microcontroller does and how we can use it for making an Arduino into other USB devices.

>How display can be altered and appropriate lenses can be used for giving a 3D effect to the user.

> how to develop an interfacing app for the PC and the smartphone.