SRISHTI 2020

- **Project Name**- Kinect based Super mario

- **Institute Name-** Indian Institute of Technology Roorkee

- **Team-**

Serial no.	Team Member	Enrollment no.
1.	Riya Tomar	19117101
2.	Siddharth Singh Baghel	19113140
3.	Anfal Ansari	19119003
4.	Rahul	19115095
5.	Harsh Jha	19110008
6.	Om	19118053

- **Abstract-**

Aim of the project is to build "Super Mario game" and integrate Kinect as an interaction technique, thereby using your own body as a controller for super Mario.

- **Motivation-**

Every year globally, people spend huge amount of time and money playing video games. Most people who engage in video game play choose to do so voluntarily because it is fun and they enjoy it so far. Video games were rated by how well the game satisfies our psychological needs

Autonomy - flexibility over movement and strategies, Choice over tasks and goals, and rewards that provide feedback and not control.

Competence-extent to which tasks provide ongoing challenges.

Relatedness- interaction between players.

Addressing the above parameters, we thought of introducing PHYSICAL aspect of it by transferring control to players body rather than keyboard. This would certainly increase.

Presence - the extent to which the player feels within the environment as opposed to being outside the game manipulating the controls.

Intuitive-controls- The extent to which the controls make sense and don't interfere with feeling of presence, making it vividly interactive and acceptable.

- **Limitation-**

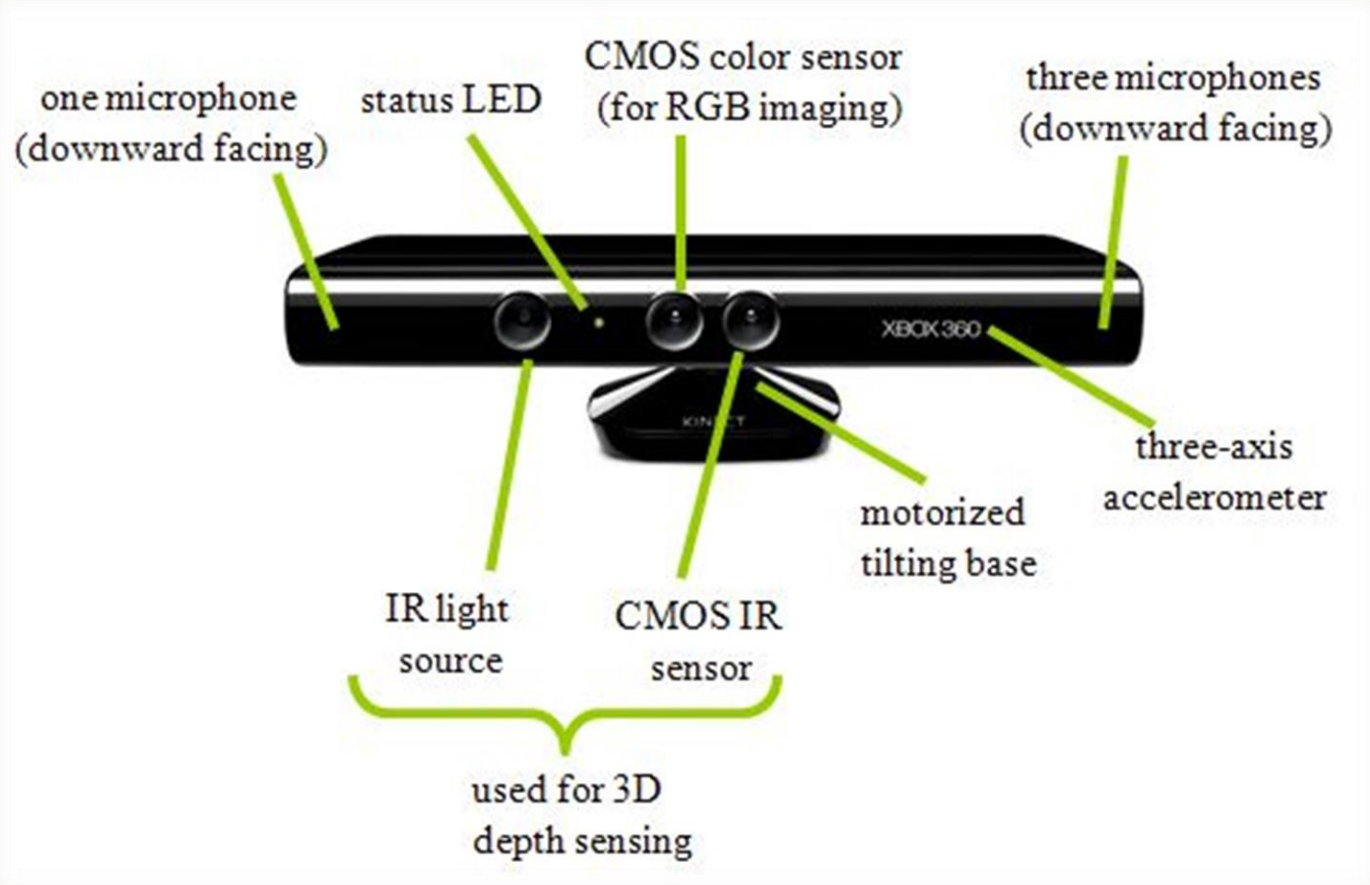
1. The Kinect sensor is sensitive to external infrared source (Sunlight).
2. It requires lot of space as one needs to stand at least 7 ft. away from the sensor.
3. Low quality graphics of the game.
4. Motion is detected in two dimensions only.

- **Future improvement –**

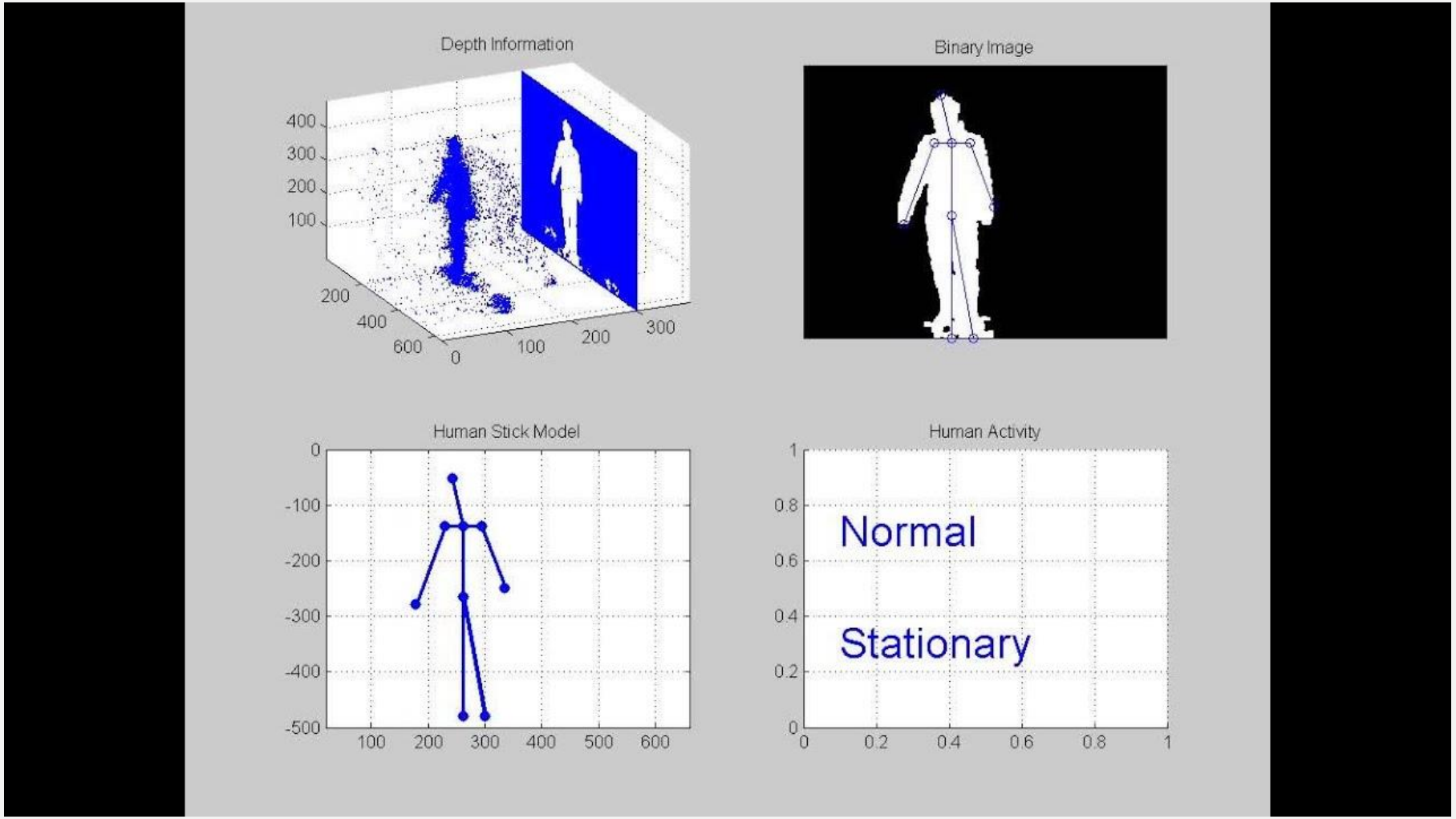
1. Kinect's microphone can be assigned some of the controls of the game
2. Screen Resolution of gameplay can be increased
3. Masking of background can be done in order to prevent unwanted structure detections.
4. Game can be made multiplayer

- **Kinect-**

The Kinect system identifies individual players through face recognition and voice recognition. A depth camera, which "sees" in 3-D, creates a skeleton image of a player and a motion sensor detects their movements. Speech recognition software allows the system to understand spoken commands and gesture recognition enables the tracking of player movements. Although Kinect was developed for playing games, the technology has been applied to real-world applications as diverse as digital signage, virtual shopping, education, telehealth service delivery and other areas of health IT.



KINECT: MOTION SENSING INPUT DEVICE



MOTION DETECTION BY KINECT

- **Software: Unity-**

Unity is, in short, a closed-source, cross-platform game development application. You create your game by manipulating objects in 3D and attaching various components to them. Even 2D games must be manipulated in 2D/3D. Scripts are written in C# (recommended), Boo or UnityScript (some peoples mistakenly call it JavaScript) and attached to 3D objects as components.

Once you've created a game with Unity, deployment is a cinch. With a couple of clicks, you can export your game to mobile, desktop and/or web (web currently requires the Unity player app to be installed). If you have the right license, you can even deploy to gaming consoles like Xbox, PlayStation and Wii.

- **Programming Language: C#**

C# is a hybrid of C and C++, it is a Microsoft programming language developed to compete with Sun's Java language. C# is an object-oriented programming language used with XML-based Web services on the .NET platform and designed for improving productivity in the development of Web applications.

C# boasts type-safety, garbage collection, simplified type declarations, versioning and scalability support, and other features that make developing solutions faster and easier, especially for COM+ and Web services. Microsoft critics have pointed to the similarities between C# and Java.