

# Make Any Surface as Touch Screen

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**Abstract:** The purpose of this system is to describe our research and solution to the problem of designing a simply touch. It outlines the problem, the proposed solution, the final solution and the accomplishments achieved. Due to the enormous increase in use of touch screen technology, as well as its vast deployment in various applications, the need of touch screen development arose. Firstly, this report outlines a description of the primitive features of a touch screen; its purpose, any surface, and its use. These features are extracted and used as the basis for turn any surface as touch screen for user interface with computer system. The stylus used to initialize the co-ordinate of screen to use for touch screen, are then explained. Our final result was to turn any surface as touch screen. It can be used with any system with or without projector.

**Keywords:** Touch Screen, Any Surface, Touch, Infrared, Touch Pen.

## I. INTRODUCTION

The popularity of smart phones, tablets, and many types of information appliances is driving the demand and acceptance of common touchscreens for portable and functional electronics. Touchscreens are found in the medical field and in heavy industry, as well as for automated teller machines (ATMs), and kiosks such as museum displays or room automation, where keyboard and mouse systems do not allow a suitably intuitive, rapid, or accurate interaction by the user with the display's content. As now days the use of touch screen has been increased. As now days most of every human interference gadget is using touch screen technology. But now days touch screen has been fitted in table in office for friendlier with computer system and to make human more interactive with such system. Same as we have designed a system basically it is nothing but to turn any surface as touch screen. Using any surface we can convert any surface as Touch Screen Surfaces Can Be Used to Make Touch Screen Like monitors, table Tops, Wall, ETC. Body of any writing pen is used as stylus to operate the touch screen. Projector is not necessary for using this system. It is Simple to operate. It is flexible to use. Relatively cheaper than other options available in market. It is Portable to use can move from one place to another. In our proposed system we are assigning the four co-ordinates of screen the space between these co-ordinates will be used as touch screen. Especially x axis, y axis, z axis is used for this. The stylus is nothing but a hollow tube fitted with an IR LED sensor and the remote which will send all IR signals into computer through wireless (Bluetooth connectivity). Software will be responsible for conversion of all such type of signals into proper command which will help the processor to execute the desired task of the user.

## II. LITERATURE SURVEY

In this field of touch screen surfaces, touch screen are created by several ways. This touch screen can be mobile (movable) or stationary (non-movable). Various type of touch screen creation technique can be differentiated by

the literature survey done is given below:

1. Projector Based Touch
2. Screen Based Touch
3. Glass/Plastic Sheet Based Touch

### Projector Based Touch

Projector Based Touch Is one of the most simplest way to provide touch screen and to give mobility to some extent this is one of the most flexible way to make touch screen by making the projection touch screen itself.

Projector Based Touch generally projects the workspace on certain surface. And then this surface is turned into touch screen by the system. And then it could be used by the user. This surface can be anything from wall, table, glass, etc. But this system requires camera's to capture the work done or task performed on the workspace and projector is compulsory or they won't work.

### Screen Based Touch

These are type of touch screen which we used on daily basis in our day to day life. These touch screens are screen that can sense touch and response to same. These types of touch screen are generally used in mobile, computers, laptop, etc. They are most common type of touch screen available in market and are widely used.

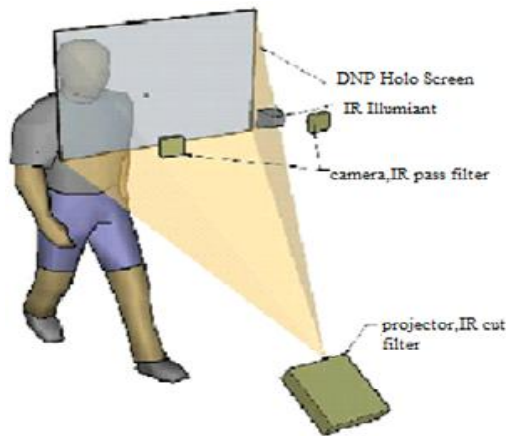
### Glass/Plastic Sheet Based Touch

These are type of touch screen which are made on glass or plastic sheet either by projection or placing screen behind them. They are generally big and stationary and require lot of machinery and electronic parts.

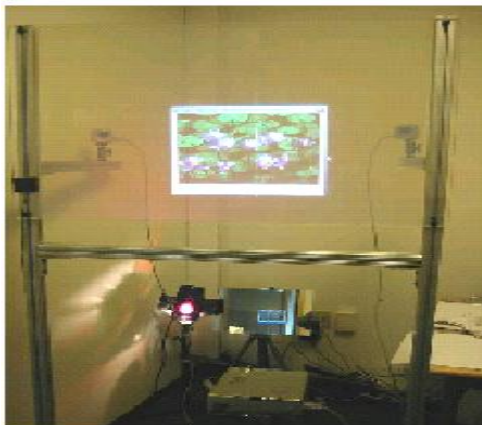
## III. EXISTING SYSTEM

Touch Light uses simple image processing techniques to combine the output of two video cameras placed behind a semi-transparent plane in front of the user (Figure 1 & Figure 2). The resulting image shows objects that are on the plane. This technique is well suited for application with a commercially available projection screen material (DNP HoloScreen) which permits projection onto a transparent sheet of acrylic plastic in normal indoor

lighting conditions. The resulting touch screen display system transforms an otherwise normal sheet of acrylic plastic into a high bandwidth input/output surface suitable for gesture-based interaction. Image processing techniques are detailed, and several novel capabilities of the system are outlined. [2]



**Fig. 1:** Physical configuration



**Fig. 2:** Prototype Displaying Image

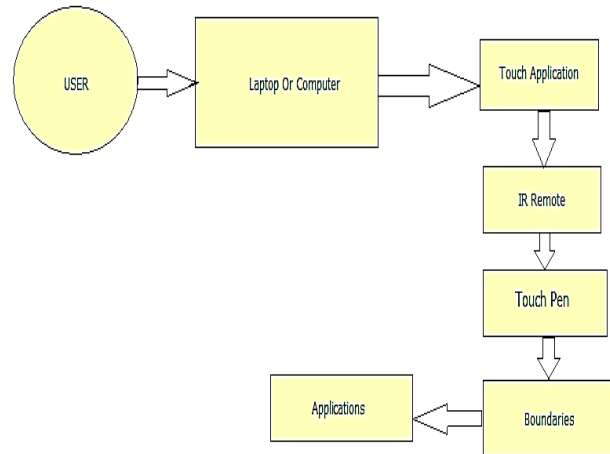
This System has combined the output from two video camera placed behind a acrylic sheet in front of the user.

1. Arrangement of the devices is complicated also takes more space.
2. It is not portable (Doesn't give the mobility)
3. Costs is more (As too many parts are used)
4. It required Surface is semi-transparent only.

**IV. PROPOSED SYSTEM**

In Proposed system we are trying to provide a very user friendly environment & to make computing more interactive & fun for the user & to increase the efficiency. And to help people to interact with computer system and make easy to use environment at offices and at colleges at time of presentation. Making a portable system that can be used whenever needed and wherever needed. It should be handy in nature to make as simple as possible to move the system from one place to another. In our proposed system we are assigning the four co-ordinates of screen the space between these co-ordinates will be used as touch screen.

Especially x axis, y axis, z axis is used for this. The stylus is nothing but an hollow tube fitted with an IR LED sensor and the remote which will send all IR signals into computer through wireless (Bluetooth connectivity). Software which will responsible for to convert all such type of signals into proper command which will help the processor to execute the desired task of the user.



**Fig. 3:** System Architecture

As in the above Figure 3 we start the system very first. Secondly we take the inputs from in the form of the four co-ordinates of the touch screen with the use of stylus. Then we process the co-ordinates and assign the space between the co-ordinates as the touch screen boundaries in other word we calibrate the screen. We use the application till it is not closed. As soon as it is stop it will halt the application, otherwise it will continue the application.

Thus,

1. It is simple and smart.
2. Very Easy to use compile as other existing system.
3. Not necessary to use a projector so it is useful for the user.
4. Simple and smart structure or device organization. And provides better environment to user and gives easiness in computer usage and it can be used in entertainment purpose like playing games, etc. And it is cost effective as there are not many of electronic parts and gives mobility

**V. APPLICATION**

The System can be used in day to day life and provides ease in working and can be fun to, basic application are as follows:

- Teaching in schools and colleges
- While giving presentations
- While playing games
- Painting & sketching
- Creating various models that requires precision and accuracy
- Increasing interactivity for children

And so on, there are many others applications based on the user and his/her requirements.

## VI. CONCLUSION

We can say that the existing system is less efficient and takes more space. And it is not cost effective as it has many parts in it that are electronic and if any problem occurs, finding the problem may take long time and its cost of making such system is more as well. And we are developing this system while keeping in mind that the user should not only afford this system as well as enjoy its usage and take it with him/her where he/she wants to take it. So,

1. We have tried to propose a system which can make any surface as touch screen overcoming the disadvantages of existing system.
  2. We have proposed idea of a system which can be used anywhere and everywhere.
  3. We have proposed a system which is very easy to implement and cost effective.
- And we tried to make this system cost efficient.

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