

## PHASES OF LASER POINTER MOUSE

### Development :

1. The software has been developed using **python 2.7**
  - a. Libraries used are : **numpy , openCV 3.0.1, pyautogui**
2. The input video is taken using a camera facing the projected screen  
And currently processed in the same PC whose screen has been projected

### Testing :

The product has been tested during a project display *Techevince 4.0* of IIT Guwahati and the following things were observed

1. Working as expected in a dim lit room or when tube lit and under low brightness of the projected screen
2. Working improperly in a sun lit room. The improper working shall be attributed to the different HSV range of laser pointer in a sun lit room.

### Further development :

1. The algorithm for detecting the laser pointer is currently colour segmentation using HSV ranges. But this algorithm has does not exactly suit the purpose as the brightness of the screen and other factors influence the range. Hence , improving the algorithm or learning the proper ranges would be a keen development
2. Currently the software implements the only moving the mouse pointer and left click using laser pointer so adding a hardware to the laser would help us make other mouse operation as well