Gesture Controlled Wheelchair

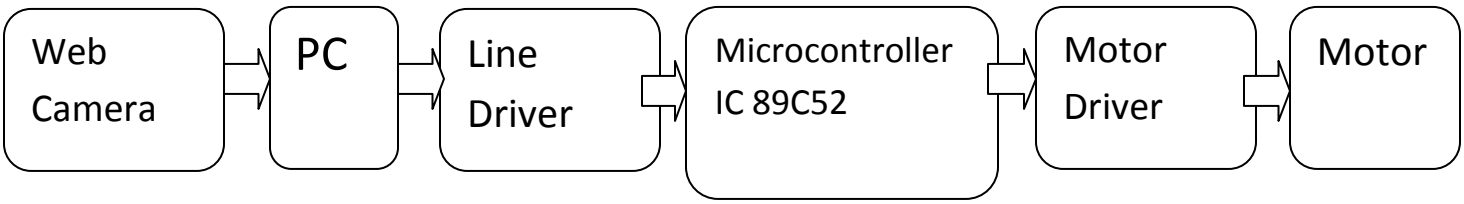
ABSTRACT

The needs of many individuals with disabilities can be satisfied with traditional manual or powered wheelchairs, a segment of the disabled community finds it difficult or impossible to use wheelchairs. There is extensive research on computer-controlled chairs intelligent control algorithms have been used to minimize the level of human intervention. This project describes a wheelchair for physically disabled people. Our goal is to design and develop a system that allows the user to robustly interact with the wheelchair at different levels of the control. Hand gesture recognition is identified using cam. The special feature of the application is the ability of the software to train itself for the above hand gesture recognition for a particular user. The Graphical user interface running along with the software provides a very convenient method for the users to train.

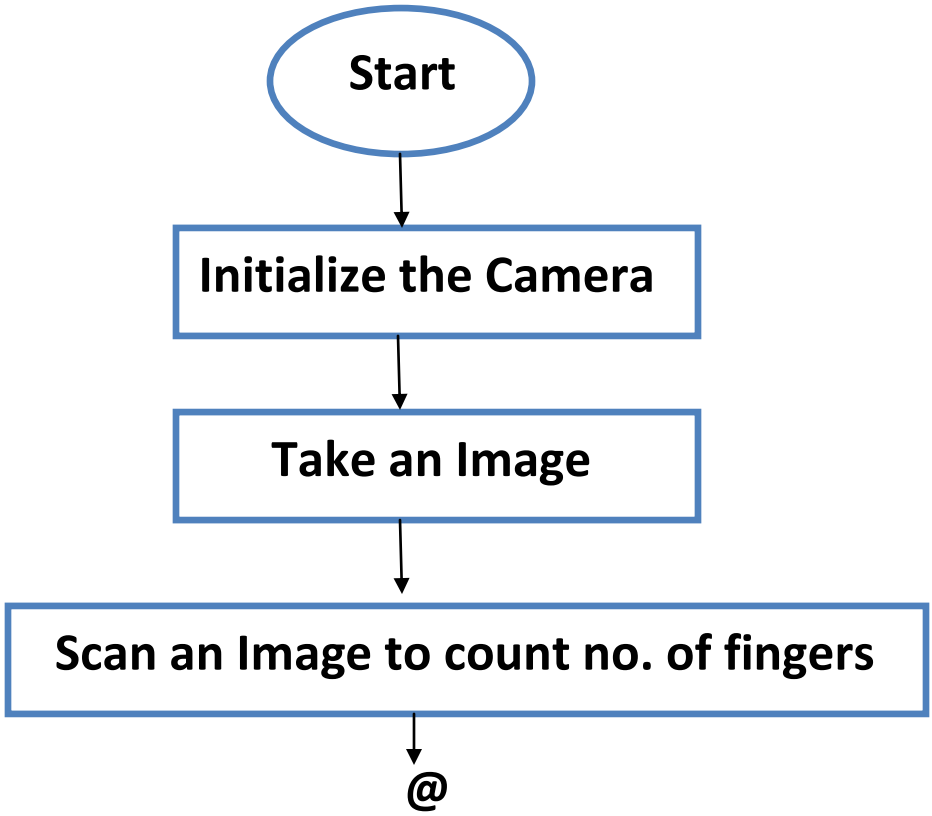
The aim of this project is to control a wheel chair and electrical devices by using Web Camera. By taking an image of hand gestures using web camera, an individual is going control wheelchair. Wheel chair movement can be controlled in Forward, Reverse, and Left and Right direction. In this Project, we are going to capture the gesture signals coming from the cam attached to the PC. The Software running on PC processes the signals to recognize the gesture commands 'Run', 'Stop', 'Left', 'Right' and 'Back'. The software also provides a facility to train itself for the above Commands. The software is written using MATLAB. This project makes use of a micro controller, which is programmed in Assembly Language. This microcontroller is connected to PC through Line driver for protocol conversion to microcontroller. The controller is interfaced with motor driver IC which is connected to drive the motors.

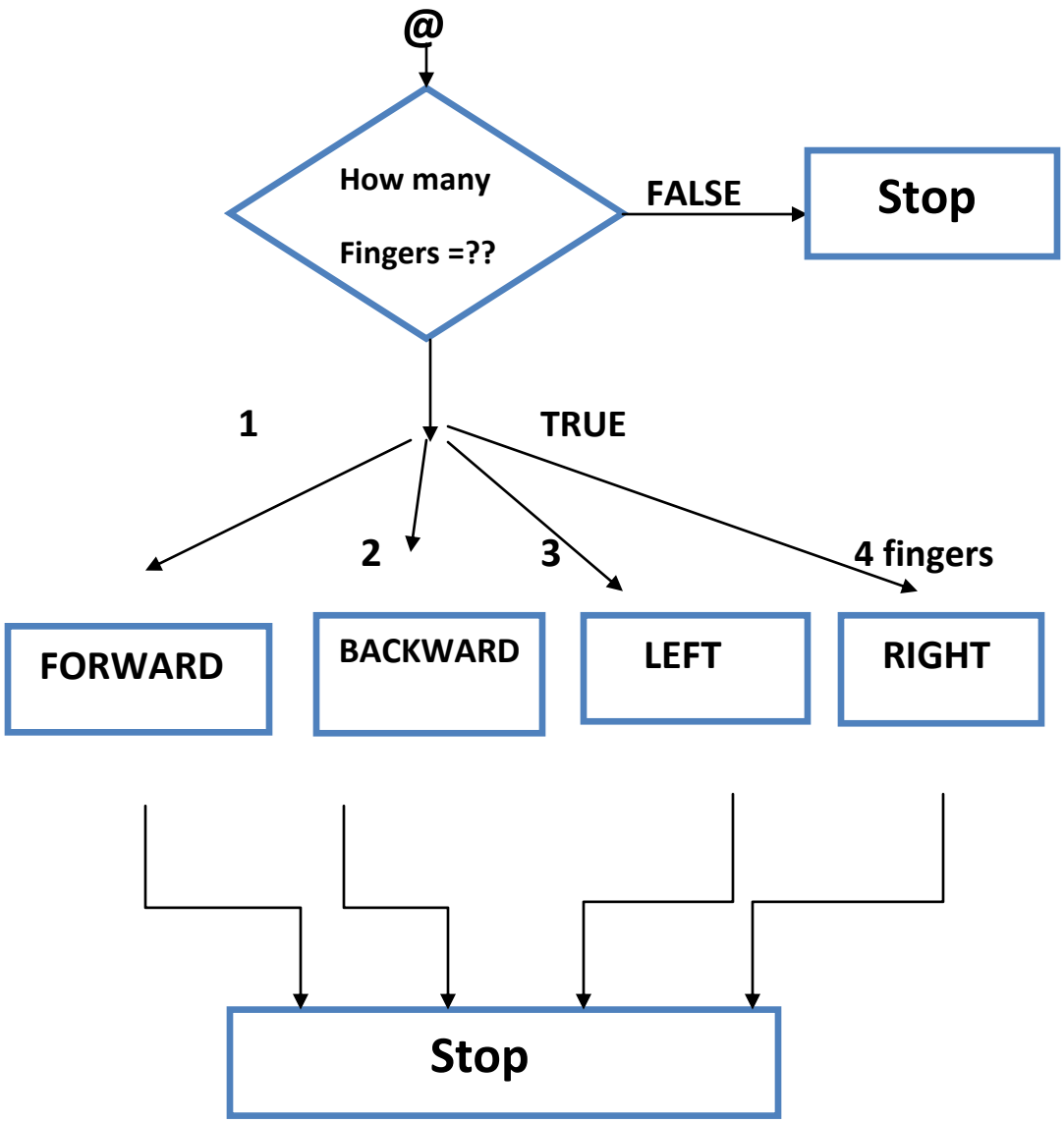
Index Terms— AT89C2 microcontroller, Web CAM, PC, driver IC, motors, Mat lab Software for programming , MAX232 for protocol conversion, 12v DC power supply, Serial cable,

BLOCK DIAGRAM:



ALGORITHM:




@
How many
Fingers =??
FALSE
Stop
1
TRUE
2
3
4 fingers
FORWARD
BACKWARD
LEFT
RIGHT
Stop