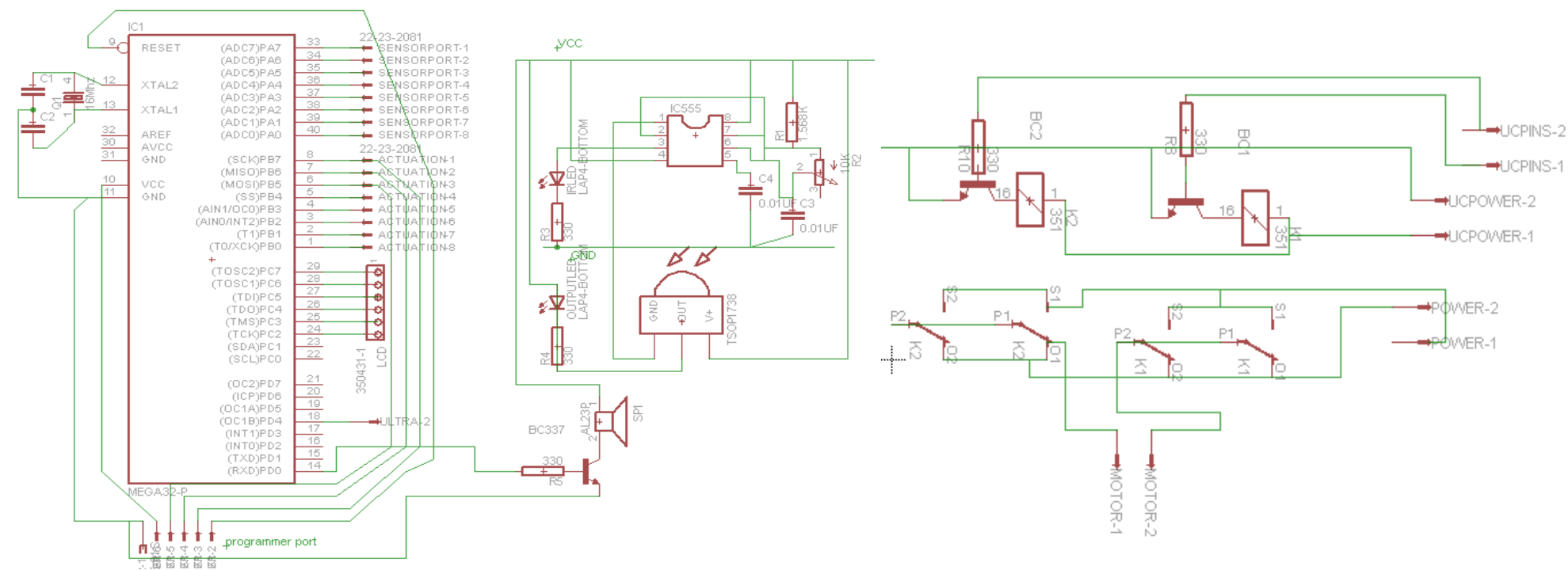
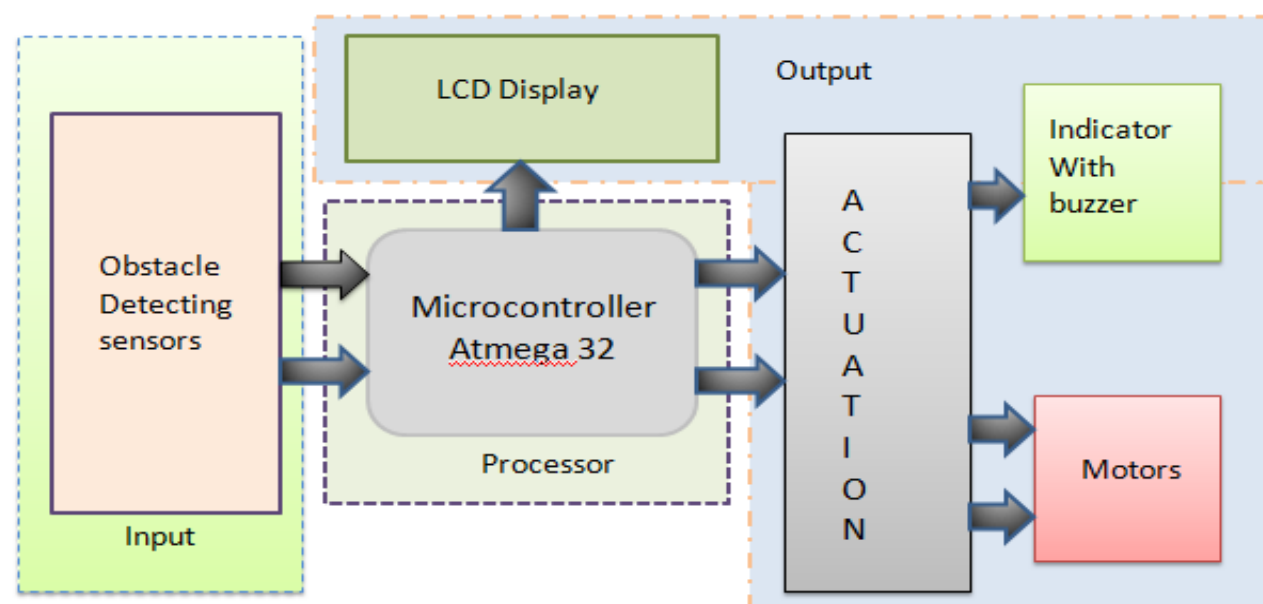


Autonomous Ground Vehicle System

Circuit Diagram



Block Diagram

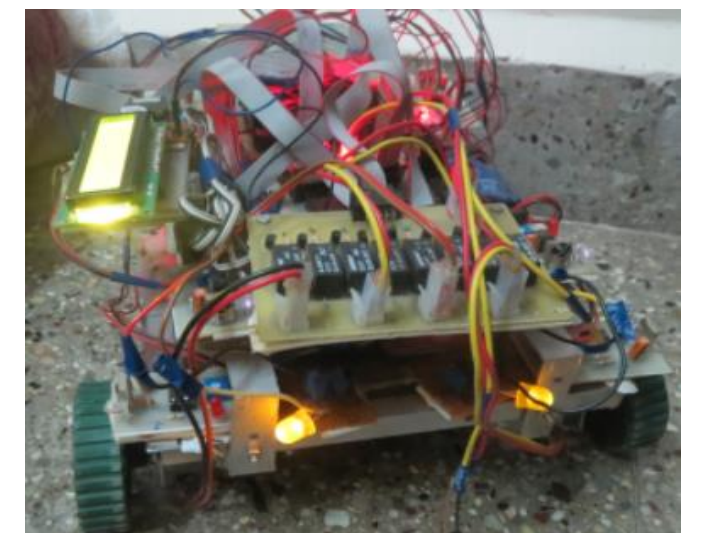
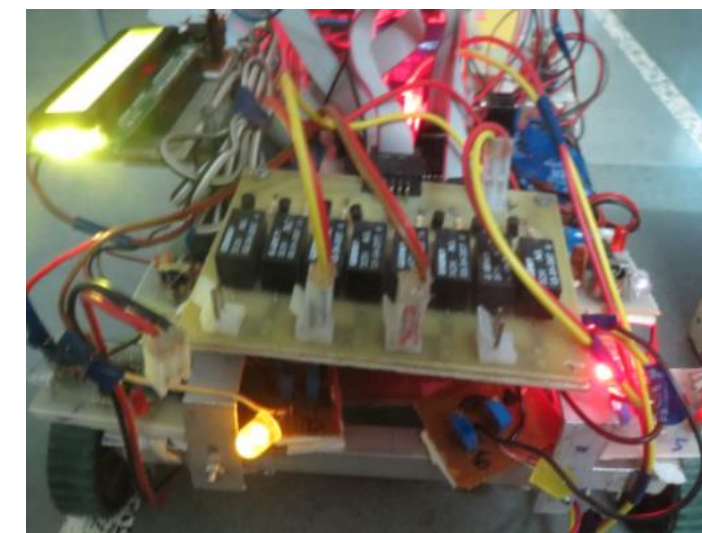
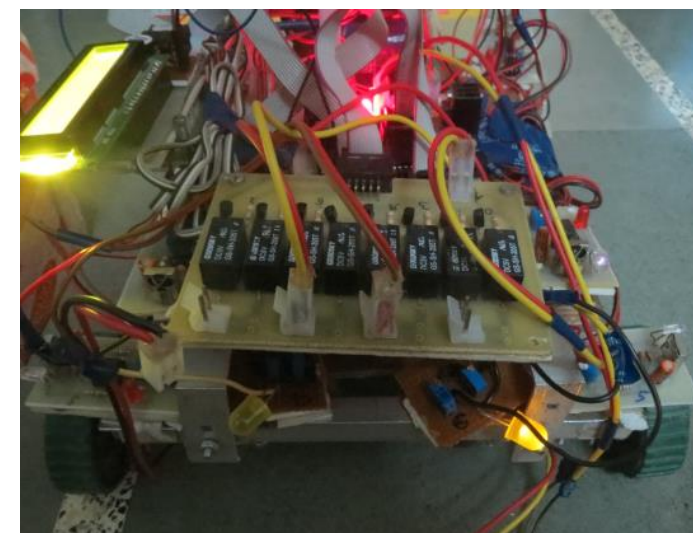
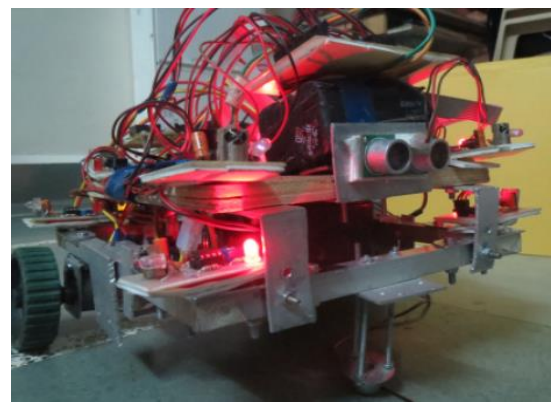


Theory

- In this system , the processor (ATmega32) checks the status of every sensor for detection of obstacle to the vehicle.
- Here the sensors which are used for detection of obstacles ,are made using IR Led and TSOP1738 combination.
- In this module the IR led is operated at 38KHz generated using IC555 astable multivibrator and transmitted signal is received by TSOP giving change in output state . We can also change the range of module using 10K variable pot.
- Based on the side to which obstacle is detected the microcontroller will take decision to move vehicle to other direction in order to avoid obstacle.

Results

Real time response of AGVS for turning to right, left and breaking.



Observations

- AGVS turned to left in order to avoid obstacle present at right side, also the status of direction was shown on LCD.
- While turning to any direction the respective indicator with buzzer turns ON.
- With the help of AGVS the vehicle travelled successfully avoiding all the obstacles in its path. But when there was the dead end the vehicle stopped showing the safe distance on LCD.

Conclusion

- The AGV will travel continuously avoiding obstacles by taking its own decisions about rotating motors, indicators, buzzer.
- More advances in AGVS can result into system assisted with room mapping, parking assistance, autonomous travelling cars.
- In future, Room mapping will become a part of military operations so as to get info about unknown areas.

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DIV - M

MAYUR TALOLE

ROLL NO.28

YEAR - T.E.

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