PROBLEM - BASED ROVER

Vision of the project:

Our vision for this project is to build an autonomous robot, which would be able to detect, avoid and follow objects in an indoor environment. It should be able to roam around the area (room) freely and remember the layout.

Analysis of the project:

The goal of the project is to design an autonomous robot, which would be able to detect, avoid and follow objects in an indoor environment. The rover should be able to roam around the area freely and remember the layout. We will need to use sensors to detect objects and determine whether to avoid them or follow them. We also need to use sensors to map the environment and find a path if the rover gets stuck. We will need to use a microcontroller to control the motors and receive input from the sensors.

Functional requirements:

- Detects objects.
- Avoids obstacles.
- Maps surrounding area.
- Moves around freely.
- Sound alerts.
- Pathfinding.

Meeting notes:

- Discussed project vision and functional requirements.
- Discussed if rover should have ability to connect to a computer.
- Made a preliminary list of needed rover parts.
- Checked part prices and locations.
- Finished first assignment.

Questions for the meeting with the “client” (supervisor):

1. What do you mean by “follow and identify objects”?
2. What sensors would you recommend (camera, ultrasound, lidar, touch)?
3. Should the user be able to see the mapping of the environment that the robot created?