1. Coordinate formation

Concept – conversion of image pixels to real world coordinate system
Input – phone camera image in their scope
Output – coordinates in X,Y frame for all objects
Algorithm – calculating the pixel distance as distance in real world
eg. 1 pixel = 2.5 cm in real world)
Example code – two nos.
Estimated time – 2 Days for one person, 3 hrs for 3 persons

2. Path Planning - +-20% error in locations of obstacles

Concept – In a given path an obstacle is detected then perform a path planning algorithm using rrt to avoid the obstacle and get back to already planned path.
Input – coordintes of RRT path 100 nos. Steps read one by one, obstacle +error {x,y}
Output – new path
Algorithm – RRT (Rapid Random tree)
Example of RRT
Estimated time – 2 Days for team

3. Navigation + traction control {error in path coordinates sensor feedback }

Navigation – conversion of coordinates provided to actions for mecannum wheels of robot
Concept - for the given coordinates path find he angle and direction of maotion and provide according actions to mecannum wheel.
Input – coordinates from RRT Path
output – commands like 30° left vector etc. Further conversion to understandable command to mecannum wheels
Algorithm – calculations
Estimated time – 7 Days + mechatronics help