Robot Goals / Deliverables:

* Autonomous delivery to the shop floor
* Small tools to carry within the shop
* Obstacle avoidance
* 2D Mapping
* Way points

Challenges:

* Dynamic objects
* Path Planning- memory / storage
* Lighting -> possible effect on vision sensors
* Object following-> Follow me function
* Missions- Intelligent Route Management
* SLAM- Simultaneous localization and mapping

Constraints:

* Space
* Min Payload
* Battery Life
* Size of the robot( in terms of visibility)

Risk Areas:

* Tripping hazards
* Malfunction of sensor/ motor -> leading to collisions

Addressing Constraints & challenges:

* Navigation Algorithms
* Computer Vision
* Infrared/ ultrasonic sensors
* Kinect Sensor
* LiDAR
* Barcode/ QR Codes for destination- Known locations. Grid of QR Codes in the plant to mov.
* QR codes for calibrations
* Alarm system 🡪 Flashing light when moving
* Fail Safe Procedure
* Visible to Forklift operator