

# ROBONOX 2020

## Team *IndiaPost*

Our idea consists of two modules:

1. 1st module is used to,
  - Pick up the package from the truck.
  - Identify the package's container (basket 1/2/3) via the scanned barcode.
  - Drop the package in the specific container according to the scanned barcode.
2. The 2nd module consists of
  - A system to identify if a basket is full (w.r.t weight and nPackages).
  - A mobile bot which can move in straight lines to place the courier in the respective carts and
  - A rotatable platform to "direct" the mobile bot to the designated cart.
  - A replacement mechanism for replacing spare baskets.

## 1st Module

This bot to do the specified things:

- Pick the courier from the truck
- Scan the barcode
- Place the courier in the specified container in the second bot.

Starting with picking the courier from the truck. For this we have used the technology of robotic arm with suction at its end. It will use suction technique to pick the courier from the truck. Then it will be placed in at particular place in the bot which would have 6 bar code scanner. If any barcode scanner detects a barcode, it will extract the required pincode and assign a particular colour according to the pincode. Colour basically

denotes the container in which the courier has to be placed. Then it will be placed in the particular cart of the second bot.

## 2nd Module

This bot is designed for performing these tasks:

- Detect the container which is overflowed
- Move all around and put the courier in the cart

After the 1st bot started putting couriers in the specified container, we have weighing machine at the bottom of each container which puts a limit on the total weight of the container. Also we take into account the total no. of items put in each container. If any of these exceeds the constraints put on them, LED starts glowing placed just below each container. Now the cart starts moving and places the courier from the specified container to the cart. And this process goes on and on.