e-Yantra Robotics Competition (eYRC-2017)
Task 1: Transporter Bot

Problem Statement 2

In this, you will be designing a game. Go through the 'Tutorials on Blender Game Engine'.
In this game, we consider a **Farm**. **Crates** containing different types of **Fruits** are placed at different locations in the farm. A **Truck** is parked in the farm, which has to be loaded with the crates to transport them to the **Market**. The task is to move a **Robot** in the farm by pressing a key to pick up the crate/s and carry them to the designated sections in the truck. On pressing another key, the robot drops the crate/s in the appropriate sections in the truck. Once all the crates are loaded in the truck, the truck moves from the farm to the market.

Note that there are six models that you need to create: **Farm**, **Crates**, **Fruits**, **Truck**, **Market** and **Robot**. You have already created models for fruits, crates and truck in Problem Statement 1. Now you need to create models for farm, robot and market. Use your creativity in adding color, text, shapes, lights or textures to make these models more realistic.

- **Scenario of a game:**
  1. The farm is represented as a terrain having a 6x6 square.
  2. Crates of four different types of fruits -- crate 1 containing type 1 fruit, crate 2 containing type 2 fruit and so on -- are placed randomly in the farm. There should be minimum one and maximum four crates of similar type.
  3. Truck and robot are placed anywhere on the farm.

- **Controls used by the robot:**
  1. Picking up the crate:

Key pressed	Pick up
A	Crate 1
W	Crate 2
D	Crate 3
S	Crate 4

  2. Droping the crate:
  By pressing the key R, crate can be dropped.

- **At any point, Pressing 'Esc' should quit the game.**

- **Actions undertaken:**
  1.On pressing a key (refer to Table 1), robot should pick up the corresponding crate.
  2. On pressing 'R', robot should drop the crate in the truck.
  Example: Whenever key 'A' is pressed, robot should pick crate 1 and on pressing the key 'R', robot should drop the crate.
  3. When all the crates are dropped in designated sections of the truck, truck should move from farm to market.

- **Add the following features:**
  1. **Scoreboard:** Create a scoreboard that updates the count of crates loaded on the truck.
  2. **Camera adjustments for better visualization:** Implement zoom in/zoom out and follow movement of robot and truck.
  3. **Notifications:** Display game start and end.
  4. **Buttons:** Display and activate replay/reset/quit buttons.

Here is a chance to win some brownie points:
Creativity in:
1. Creation of overall farm and market scenario.
2. Animation of robot and truck.

Evaluation would be done on the basis of your modeling, optimization of Python scripts, adding Physics, and the overall functionality of the game.

Finally, save the Blender file as ProblemSolution2.blend and make a video of the game you have made. Video should be of maximum 3 minutes duration.

Instructions for submitting the video demonstration:
1.Upload your recorded video on YouTube. The name of the video should follow the syntax: eYRC-TB#_Task1_Demonstration Example: If your team Id is "16", you should save the video as eYRC-TB#16_Task1_Demonstration
2.Your uploaded video should be Unlisted.
3. Copy the URL of your video, paste it on the upload tab of the portal.