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eYRC 2020-21: Nirikshak Bot (NB)

[5] Theme Rules

[Last Updated on: **28th December 2020, 23:00 Hrs**]

- The **maximum time** allotted to complete the task is **480 simulation seconds**.
- A **maximum of two runs** will be given to each team from which the **best of the two runs** will be counted as the **final score**.
- A **maximum of one restart** is allowed per run wherein the Python client script, the CoppeliaSim simulation and the Theme Run timer will start again. In case a team requires a *second restart*, the **run will be ended** and **maximum time** for the task (**480 simulation seconds**) will be considered for that run.
- If during simulation, any kind of collision or balancing of Platform Tables causes any **changes in the arena configuration**, then it will result in **immediate end** of the run and **maximum time** for the task (**480 simulation seconds**) will be considered for that run.

- Teams will be provided with the following files before the start of theme run:
 - **arena_scene.ttt**
 - **arena_scene_details.pdf**
 - **ball_details.json**
 - **maze_t1.jpg, maze_t2.jpg, maze_t3.jpg and maze_t4.jpg**
- Teams will import their **Ball Balance Platform** design in **arena_scene.ttt** file. The coordinates to which these platforms are to be positioned will be defined in **arena_scene_details.pdf**.
- Teams will start their Python client script, process the four maze image files provided using Image Processing and generate these mazes on top of the **four** Platform Tables in the **arena_scene.ttt**. The maze generation takes place with the help of customisation Lua script(s) in CoppeliaSim.
- Once the simulation starts, the Ball Dispenser (**BD**) will start dispensing each ball at regular interval of **80 simulation seconds**.
- The **Theme Run Timer** will start **as soon as the first ball** is transferred on to Table-4 (**T4**) by Conveyor-Belt-4 (**B4**).



Welcome to NB theme!

Rulebook 

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Task 0 

Task 1 

Task 2 

Task 3 

Task 4 

Task 5 

Git and GitHub

Live Session 1 - 24th October 2020

Live Session 2 - 21st November 2020

Live Session 3 - 12th December 2020

Live Session 4 - 10th January 2021

Changelog

- Teams have to make **T4** navigate the ball through maze on it and pass the ball to the next table i.e., **T1** or **T2** or **T3** based on the designated drop location mentioned in `ball_details.json` file.
- The next table will then navigate the ball through maze on it and drop the ball in the appropriate Collection Box (**CB**).
- The **second ball** will be dispensed at **80 simulation seconds** after the first ball was dispensed.
- This process will repeat itself until the last ball is dispensed.
- The **Theme Run Timer** will **end after 480 simulation seconds** from the start of timer.
- The objective is to drop all the balls to their respective **CB** within **480 simulation seconds**.
- Each **Platform Table** that is able to **pass / drop each ball to the next table / the designated CB within the stipulated amount of time** is considered as **OK Tested!**

- A run ends and the **Theme Run Timer** is stopped when:
 - If the maximum time limit of **480 simulation seconds** for completing the task is reached **OR**
 - If the team needs a second restart but has already used first restart for that run **OR**
 - If any of the Platform Tables or any kind of collision while performing the task causes any **changes in the arena configuration**.
- Second run will start after the first whilst resetting the score, timer and the arena.
- The score of both runs will be recorded and best of two runs will be considered as the team's final score.

NOTE:

- For a run to be considered as **valid**, teams need to **correctly pass and drop at least one ball** dispensed by BD to its **designated drop location** or **CB**.
- Only in this case, the **Scoring Formula** mentioned in the next section will be **valid**, else the team receives a **0** for that run.

