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eYRC 2020-21: Nirikshak Bot (NB)

Instructions for Task 6

[*Last Updated on: **27th February 2021, 11:00 Hrs***]

- 1. Problem Statement
- 2. Getting Started
- 3. Video Recording Instructions
- 4. Code Submission Instructions

NOTE:

- Before proceeding further, make sure you **have gone through the INSTRUCTIONS on the Task 6 page of eYRC portal**.

1. Problem Statement

Implement the **Nirikshak Bot theme as per the Rulebook**.

2. Getting Started

- Download the **Original** configuration zip file from the portal.

- **NOTE:** A countdown timer of **48 Hours** will start as soon as **any ONE of the team member** will hit the download button.

- Since this task contains a total of **5** balls, teams will have to *manually* position the **2** balls (currently in the **_unused_collection_box_**) into the ball dispenser tube.

- If you are unable to position it, you can proceed with the installation of Grader Application and run it once. The Grader Application will automatically position the balls for you.

- Now, download the **Grader App executable package** from this page.

  - `NB_Task6_GUI-1.2.0_win.exe` (for **Windows OS**)
  - `NB_Task6_GUI-1.2.0_linux.AppImage` (for **Linux OS**)
  - `NB_Task6_GUI-1.2.0_mac.dmg` (for **Mac OS**)

  NOTE: The installation of the Grader App has been tested **only** on the following **64 bit OS**:

  - *Windows 7, 8 and 10*
  - *Ubuntu 16.04 and 18.04*
  - *macOS Catalina v10.15.7*

- Refer the App for Grading of Progress Task document for installation and running in your respective OS.

- After the installation is complete, a **screen as shown in Figure 1** should be visible.
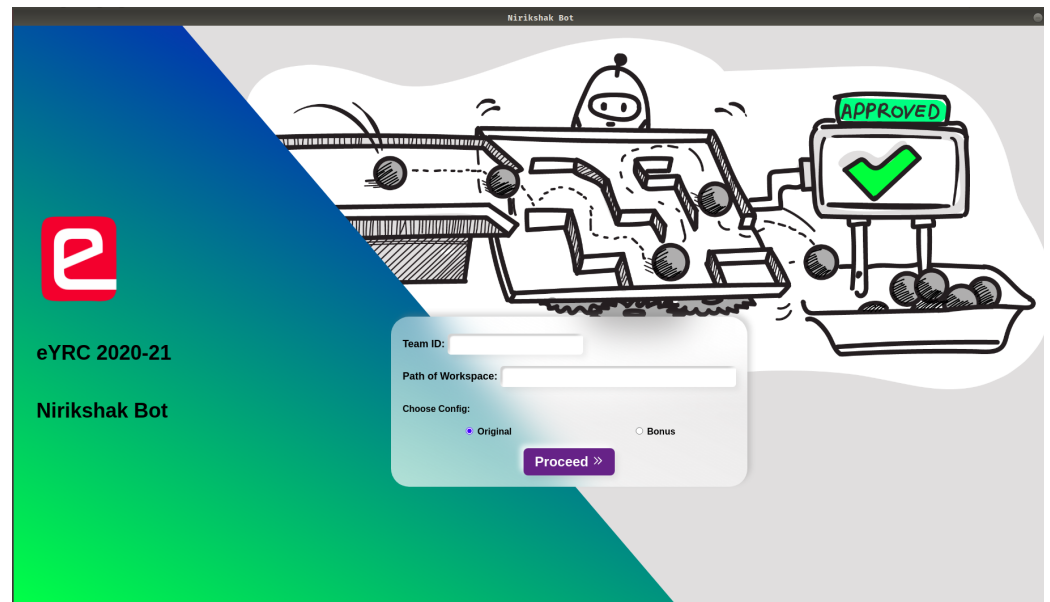

Figure 1: Initial screen of Task 6 Grader Application

- Remaining screens of the Grader Application shall be same as mentioned in the Practice Task.

- Status in the Grader Application shall be one of the following:

  - - **Ok Tested** - Team has **CORRECTLY** passed and dropped *all balls specified in json file* that are dispensed by BD to its designated CB.

    - **Valid Run** - Team has **CORRECTLY** passed and dropped *at least one ball* dispensed by BD to its designated CB.

    - **Invalid Run** - Team has **INCORRECTLY** passed and dropped at least one ball dispensed by BD to its designated CB.

    - **Error** - Evaluation failed. Check the log files as mentioned in App for Grading of Progress Task document. The location of the log file will be as follows:

      - **Windows**:

        `C:\Users\{User_Name_of_Machine}\AppData\Roaming\NB_Task6_GUI\logs\`

      - **Ubuntu**:

        `~/.config/NB_Task6_GUI/logs/`

      - **Macintosh**:

        `~/Library/Logs/NB_Task6_GUI/`

- Refer the *Video Recording Instructions* and *Code Submission Instructions* below to know how to record the theme run and submit your submission for **Original Configuration**.

- Once your submission is recorded, the *Bonus Configuration* will be available for download. Team can chose to attempt this configuration.

- Follow the instructions for Video Recording and Code Submission to record your submission for **Bonus Configuration**, if the team is attempting it.

WARNING:

- The Grader App will generate `task_6_output.txt` file for the successful run.
- **It is suggested to make a copy of this txt file and rename it to**:
  - `task_6_original_config_output.txt`, if the chosen config was *Original* on the first screen of the App.
  - `task_6_bonus_config_output.txt`, if the chosen config was *Bonus* on the first screen of the App.

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3. Video Recording Instructions

NOTE: Please ensure that the video uploaded is of good quality and conforms to the instructions given below.

- The arena (i.e. the generated mazes in CoppeliaSim) must conform to the *Original / Bonus Configuration* (as available on the portal) before you start recording the video.

- The video will consist of two parts:

  - *Introduction Part*

    - The video **should start with a brief introduction**.

    - Opening screen of the video should show the *College name*, *Theme name* and *Team members' names* and should remain for **3-5 seconds**. You can refer **Title_slide (eYR 2020-21)** provided.

    - This should be followed by an introduction limited to a **maximum of TWO minute**

      1. A short introduction by each team member where they can mention their names and department in the college. [**max. 30 seconds**]
      2. A **max. of 30 seconds** introduction by the team leader *highlighting any interesting aspect of theirs theme implementation*.
      3. A **max. of 60 seconds** *highlighting the challenges faced while completing the task*

      Note: Teams here should use a video communication tool (*Google Meet, Webex, Zoom, etc.*) **of their choice where both video and audio should be clearly visible and audible for all the team members.**

  - *Demonstration Part*

    - This **MUST** be a **one-shot continuous screen-recorded** video and it should **not be edited** in any manner.

    - Teams uploading **an edited video will be disqualified** from the competition.

- Team should open the **Grader Application v1.2.0** and `task_6_scene.ttt` **before running the simulation and recording the video**.

- Make sure that the view of CoppeliaSim is as shown in Figure 2.

- Go to the **Page Selector** button   available in the **top toolbar of CoppeliaSim** and select the view of **Page 6**.

Figure 2: Mandatory view of CoppeliaSim scene before running the simulation.
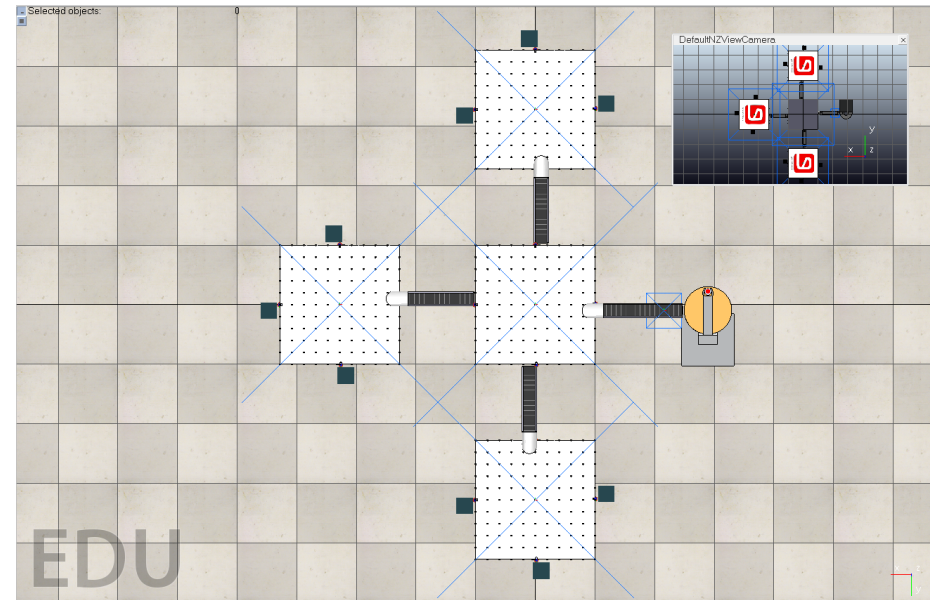
- Copy the *Path to Workspace* before recording as well.

- Make sure that you record the **entire Desktop content** and the **Date and Time** are clearly visible throughout the simulation.

- The flow of the video should be as follows:

  1. In the initial screen of Grader Application, team should enter their *Team ID* & *Path to Workspace* and **select the configuration** (*Original / Bonus*) for which they are currently running their code.

  2. After landing on the next screen, teams should click on the **Start** button and switch to the `task_6_scene.ttt` in CoppeliaSim. Make sure the CoppeliaSim view is as shown in Figure 2.

  3. **The entire simulation (without any interruptions) should be clearly visible**.

4. **Information Text should not be hidden**, i.e., **Real-Time-Factor (rtf)**, **Simulation Time**, **Real Time**, etc. should be clearly visible in CoppeliaSim during the **entire simulation**.

5. After the simulation has stopped, switch back to the Grader Application to show the evaluated output and the values of all parameters.

Important Points to consider:

- Show the Task 6 Grader App **ONLY at the beginning and the end of the video**.
- The video **should be recorded in one go and entire screen along with the date and time should be visible throughout**. Any edit made to the video will lead to disqualification.
- **Information Text should not be hidden**, i.e., **Real-Time-Factor (rtf)**, **Simulation Time**, **Real Time**, etc. should be clearly visible in CoppeliaSim during the **entire simulation**.
- The **order of the balls will be randomized** whenever you will run your solution. Hence make sure your code is generic.
- Do **NOT include spaces** in the *workspace path* that you are going to provide to the Grader App.

NOTE:

- **e-Yantra reserves the rights to disqualify any team if any foul play is suspected.**
- **Teams are allowed to stitch the Introduction and Demonstration part ensuring that the Demonstration part MUST be a one-shot continuous screen-recorded video as already stated above.**

- Now follow the instructions mentioned under **Task 6 Video Upload** section on **Task 6** page of eYRC portal to submit the recorded video.

4. Code Submission Instructions

Note:

- Make sure you have referred the **Coding Standard** section before proceeding further.

- For *Original Configuration*:

  - Create a new folder named `NB_<Team-ID>_Task_6`. For example: if your team ID is **9999** then you need to create a folder named `NB_9999_Task_6`.

  - Now copy and paste **AT LEAST** the following files into this folder:

    - `task_6.py`
    - `task_6_scene.ttt` (with the **modified model**)
    - `task_6_output.xml` (Refer Figure 8 of Task 1C - Design Ball Balance Platform document to learn how to export CoppeliaSim scene as an XML file)
    - `task_6_script_t1.lua` (**copy the CoppeliaSim customization script of Table 1 i a new file and save it as .lua extension**)
    - `task_6_script_t2.lua` (**copy the CoppeliaSim customization script of Table 2 i a new file and save it as .lua extension**)
    - `task_6_script_t3.lua` (**copy the CoppeliaSim customization script of Table 3 i a new file and save it as .lua extension**)
    - `task_6_script_t4.lua` (**copy the CoppeliaSim customization script of Table 4 i a new file and save it as .lua extension**)
    - `task_6_original_config_output.txt` (**rename** the `task_6_output.txt` file generated by the Grader App when *Original Config* was selected)

  - **Compress** this folder into **a zip file** and name it as `NB_9999_Task_6.zip`. Upload this **zip file** on the portal and record your submission.

    NOTE:

    - File names mentioned are case sensitive. Verify all the file names before creating the zip file.
    - Any other file **required to run the team's submission SHOULD be added** to this zip file.

- For *Bonus Configuration*:
  - You need to submit **ONLY** the `task_6_bonus_config_output.txt`.
  - You need to **rename** the `task_6_output.txt` file generated by the Grader App when *Bonus Config* was selected to `task_6_bonus_config_output.txt`.
  - Upload this **txt file** on the portal and record your submission.

ALL THE BEST!!

Welcome to NB theme!

Rulebook   ›

Task 0   ›

Task 1   ›

Task 2   ›

Task 3   ›

Task 4   ›

Task 5   ›

Practice Task

Instructions for Task 6

Task 6 Scene Details

Coding Standard

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