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Kelas : Kangae

Domain : RL

Student Activity 1 & 2

Link github : https://github.com/Jkenyut/RL_activity

Student Activity 1

Mengubah tata letak environment, mulai dari posisi robot, posisi goal, dan tata letak obstacle.

- Mengubah letak obstacle = obstacle 1 gambar tree1 dan obstacle 2 gambar road_closed1

```
# Creating objects of  Obstacles
# Obstacle type 1 - road closed1
img_obstacle1 = Image.open("images/tree1.png")
self.obstacle1_object = ImageTk.PhotoImage(img_obstacle1)
# Obstacle type 2 - tree1
img_obstacle2 = Image.open("images/road_closed1.png")
self.obstacle2_object = ImageTk.PhotoImage(img_obstacle2)
# Obstacle type 3 - tree2
```

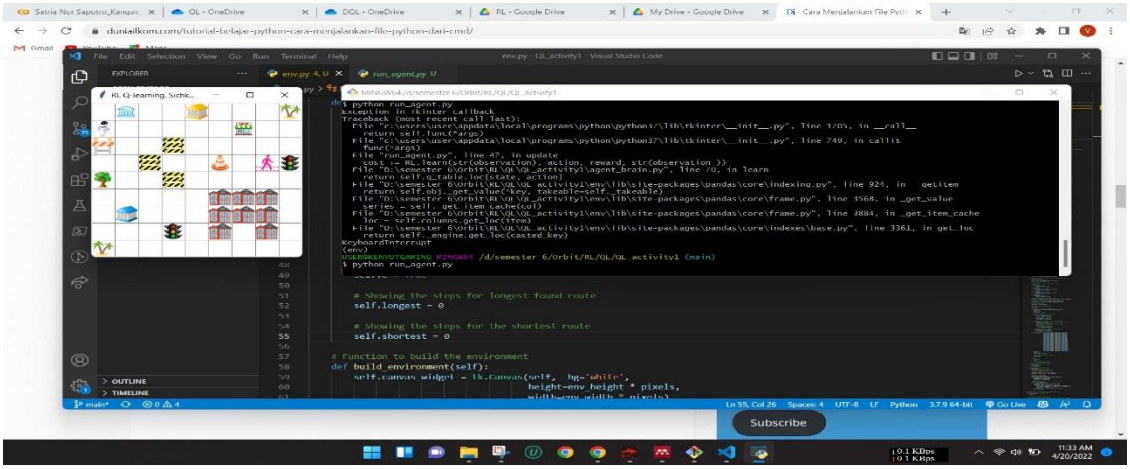
- Mengubah letak posisi robot dari 0,0 menjadi 1,2

```
        # Creating an agent with photo of Mobile Robot
        self.agent = self.canvas_widget.create_image(
            1, 2, anchor='nw', image=self.robot)

        # Packing everything
        self.canvas_widget.pack()

    # Function to reset the environment and start new Episode
    def reset(self):
        self.update()
        # time.sleep(0.1)

        # Updating agent
        self.canvas_widget.delete(self.agent)
        self.agent = self.canvas_widget.create_image(
            1, 2, anchor='nw', image=self.robot)
```

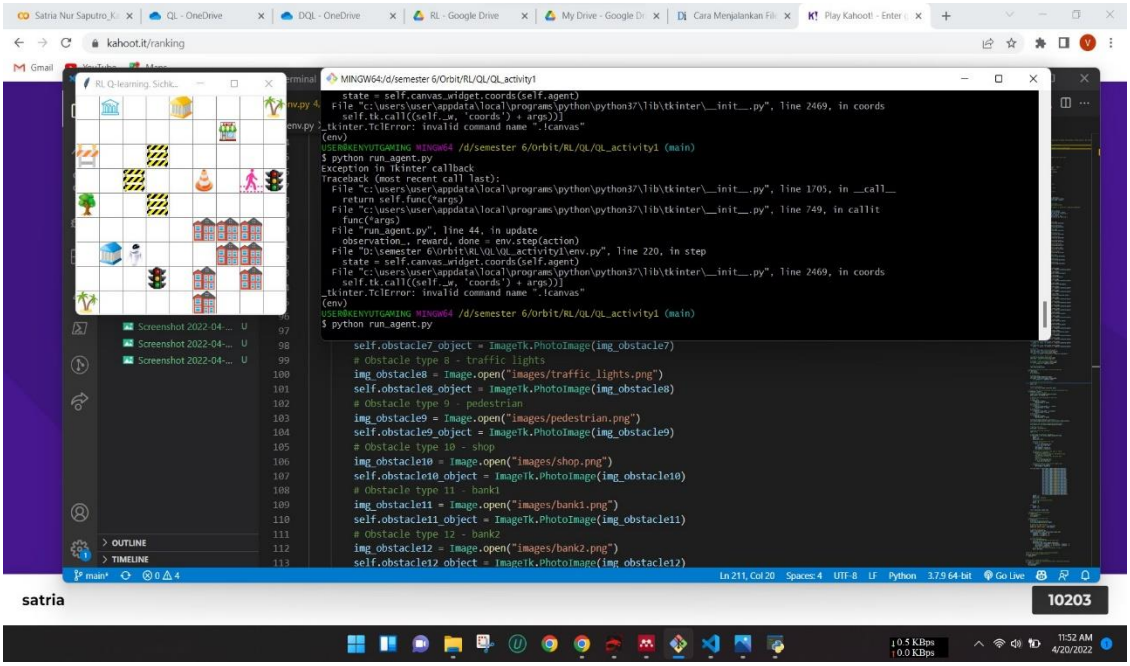
- Mengubah Goal tujuan menjadi gambar bank1(final point)

```
# Final Point
img_flag = Image.open("images/bank1.png")
self.flag_object = ImageTk.PhotoImage(img_flag)
self.flag = self.canvas_widget.create_image(
    pixels * 6, pixels * 6, anchor='nw', image=self.flag_object)
```

- Sebelum Diubah



Setelah diubah tata letaknya: terlihat gedung berpindah dan lainnya

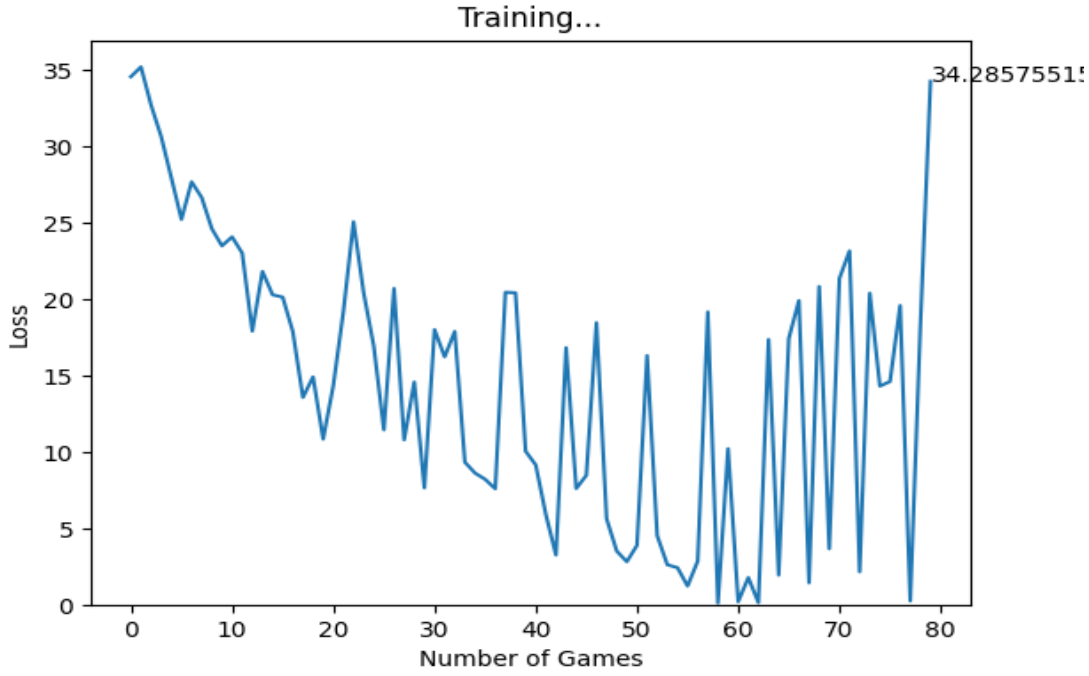


Rangkuman:

Proses ini dengahn menginstall environment yang dibutuhkan seperti thinker lalu proses membutuhkan waktu cukup lama untuk melatihnya.

Student Activity 2

- Menjalankan program DQL for indoor dynamic goal navigation



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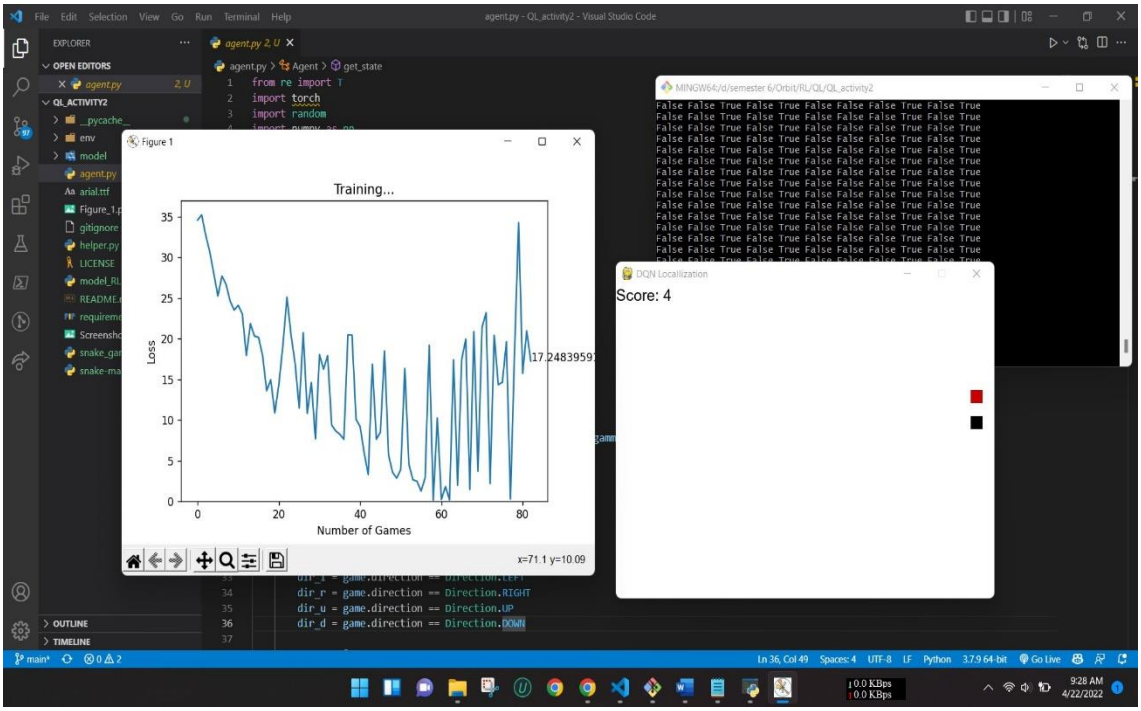

Rangkuman

Harus menginstall environment seperti tensorflow, pyqt5, pytorch dll, lalu disini mencoba melakukan epochs selama 80 X dan hasil loss terbaik pada epochs 60 dan 79 dengan loss 0,145, pelatihan sekitar 10-15 menit dengan memakai CPU I7-gen9.