**CityTRAQ Playground Overview**  
This GitHub repository provides access to all the Arduino code and components required to build, repair, and upgrade the CityTRAQ Playground project.

Here’s the updated **Arduino Code** section to reflect your new requirements:

**Arduino Code**

The Arduino Mega is programmed to control the system's electronics and interactions. Below are the key functionalities:

* **Sensor\_Control**:
  + Operates the E18-D80NK Infrared Reflection Sensors to detect the rotation of the wheels.
  + Tracks the number of rotations to monitor progress toward the set goal.
* **Lighting\_System**:
  + The **10K potentiometers** are used to set the difficulty level, adjusting the number of rotations needed to reach a goal from easy to hard.
  + The **push button** confirms the selected goal, saving the target number of rotations for the session.
  + As progress is made:
    - The **1-meter LED strip** lights up proportionally to the progress, with sections illuminating in sequence.
    - The LED strip transitions from **red** to **green**, indicating proximity to the goal.
  + When the goal is reached:
    - The LED strip lights up fully in **green**.
    - An additional **LED ring** turns on to indicate the completion of the goal.
  + The process can repeat for up to **20 goals**, allowing for all **20 LED rings** to light up incrementally as goals are achieved.
* **Power\_Management**:
  + Ensures stable power delivery via the Mean Well 5V 10A Switching Power Supply.
  + Incorporates **330-ohm resistors** for circuit stability and to protect the LEDs.
* **Goal Adjustment**:
  + Goals are set using the **potentiometers**, ranging from fewer to more rotations based on the difficulty level.
  + The push button confirms the selected goal, storing it as the target value for the current session.

**Credits**

This project was developed by:

* Obe Baert
* Ivan Garcia Juarez
* Ruben Rimbaut
* Florien Verduyn
* Viktor Coopman