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"Dinosaur Game" - by Google
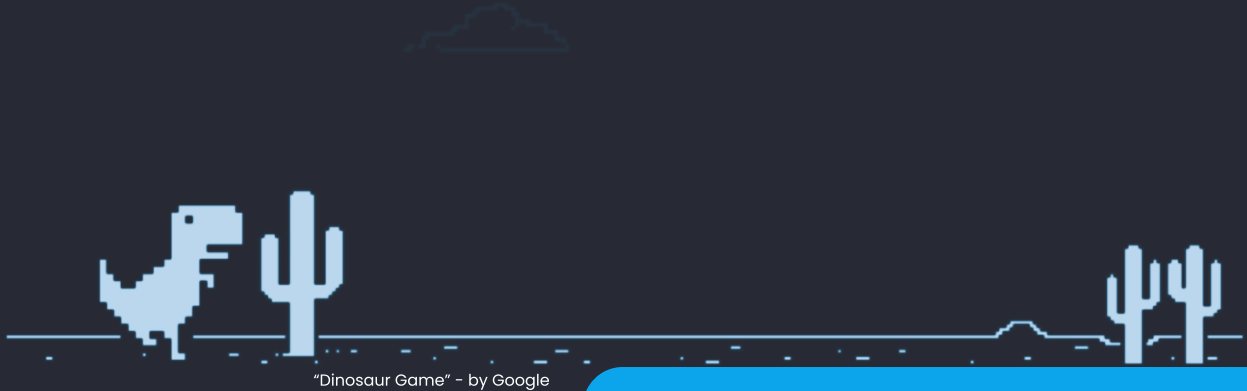
## Background

In a jumping game, a character is endlessly running at an infinite amount of obstacles. The player must decide when the character jumps to avoid running into an obstacle for as long as possible.

## Synopsis

In this project, users will be aiming to automate our version of this game by creating an "AI" (Artificial intelligence) that can exceed human capabilities and achieve as high of a score as possible. This AI will be controlling a robot to deliver a package as fast as possible, automatically jumping over any obstacles that get in its way.

**Themes** of this Project include **automation** and **algorithms**, including thinking about potential use-cases and moral dilemmas.

**Sub-themes** also include congestion and the delivery of goods using autonomous robots.

## This project is divided into six lesson plans

**01.** Let learners **Imagine** the situation by playing and discussing a situation video. Learners will work in groups to explore the Project theme to accurately **Define** the situation.

**02.** Facilitate a class discussion around the topics and questions that your learners previously covered in **Define**. This lesson will end with an explicit definition of the problem and the tools available to solve it.

**03.** Learners will get a chance to **Research** the tools available on our platform that they will use to construct their solution. This lesson will end with a session where learners will **Plan** how they will build their solutions.

**04.** Learners will use our platform to **Create** and test their solutions to the problem inside our simulated environment.

**05.** Learners will use our platform to **Improve** upon their previous solutions, applying the skills they have learnt and the knowledge they have gained to solve more advanced problems.

**06.** Learners will continue using our platform to **Improve** upon their solutions, before taking the time to **Review** their entire work on the Project.

# Project Overview

## Subject Areas

**Technology**

**Engineering**

**Computer Science**

**Automation**

**Artificial Intelligence (AI)**

**Ethics**

## Learning Outcomes

In this Project, **learners** will:

1. Learn how to formalise the logic occurring in their head into logical code to allow them to automate a task they would normally do manually.

2. Learn how to use flow control/ branching (If, else, else if) to write code that can make decisions.

3. Learn how to use comparison blocks (<, >, <=, >, ==) to inform decisions making by comparing two different values.

4. Learn how to read and act on sensor data returned by a robotic system (distance to next obstacle, height of next obstacle, obstacle type, obstacle velocity etc).

## Equipment List

**Learners** require:

- Access to our digital platform through a laptop, PC or tablet (no account needed at this stage)

- Learning journal (included in lesson plan)

**Educators** require:

- Situation video (included in lesson plan)

- Printed Assessment worksheets (file included in lesson plan)

- Easy access to help sheets, either printed or digitally (files included in lesson plan)