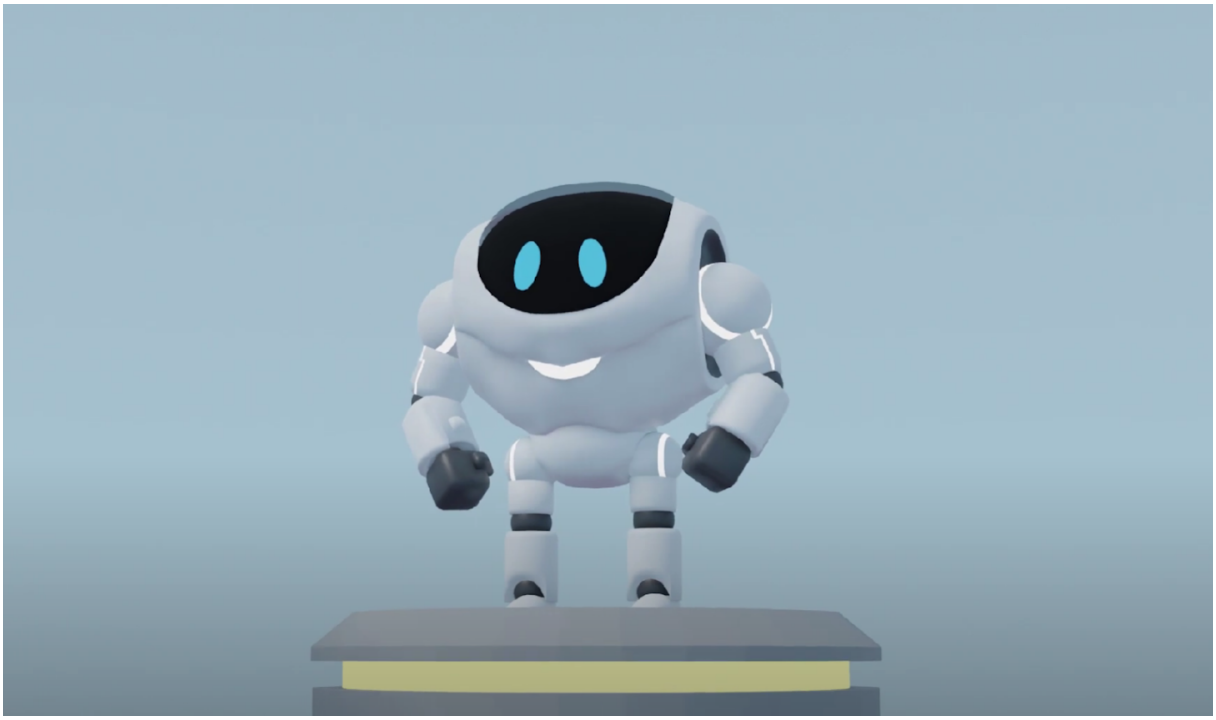
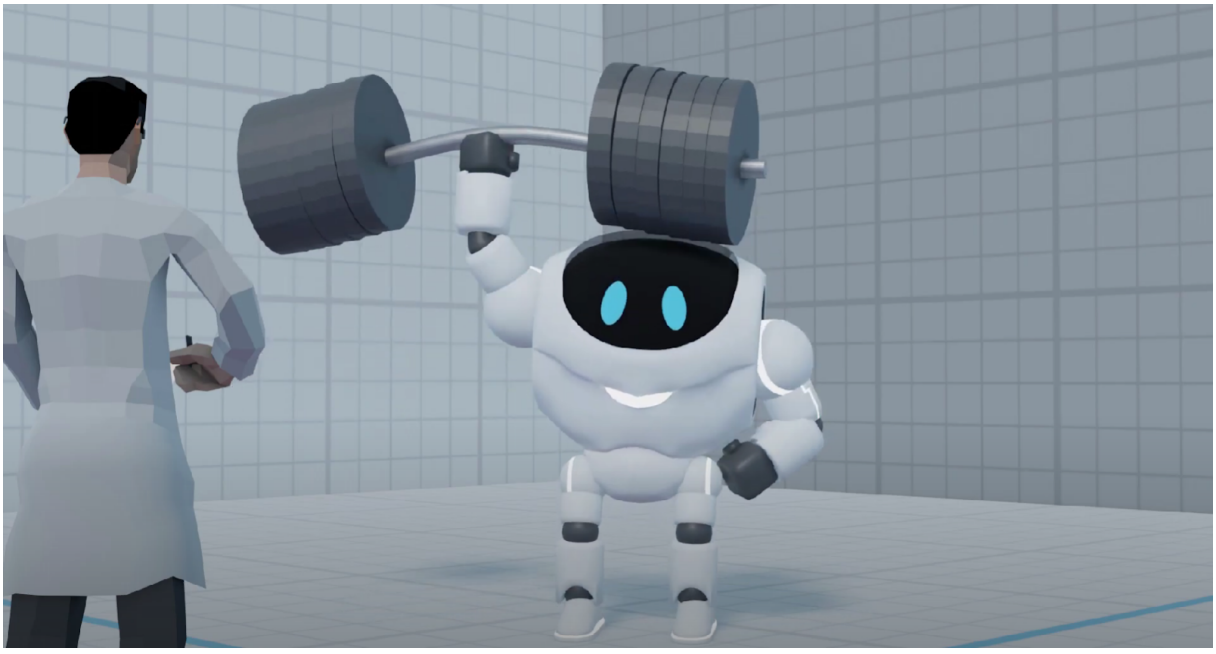
Your mission

So far, we have seen some of the advantages of automation. In this Project, you will be putting some of these concepts into practice by programming a robot to perform a series of tests.

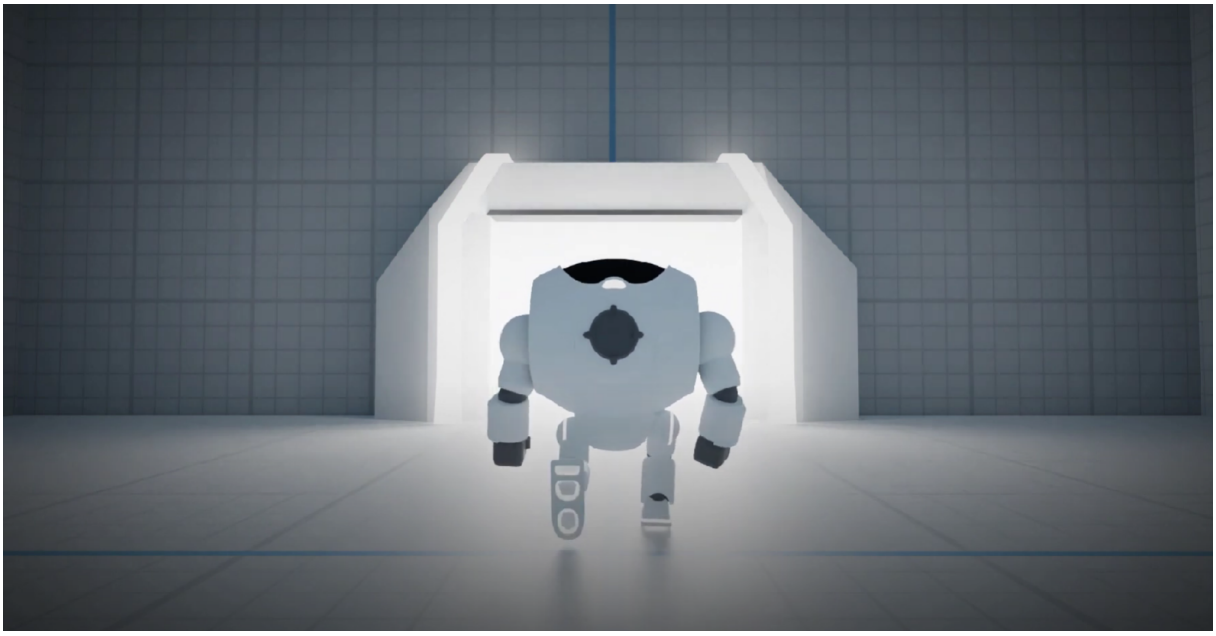


This general-purpose humanoid robot has similar movement capabilities to a human and thus can be programmed to perform similar tasks. The robot can be instructed to perform a task by calling a predefined function block. You will learn more about this process in the Create step.

As a testing officer, your job is to create a series of programs to test if the robot has been designed and built up to the required standard. You will effectively be doing quality assurance - determining if the robot meets the right requirements.



The robot has already passed the first round of tests, and it is your job to write the correct code to make sure that it passes the second. If the robot can pass all the tests successfully, it will be marked as ready to release into the world to help people carry out everyday tasks. It may be especially useful for individuals whose unique situations make it difficult to perform certain physical tasks.



In this Project, each test will include a new programming concept for you to master. You will Research this new concept, Plan how you will use it to complete the test, and then Code your answer. Each of these Research -> Plan -> Code cycles is called a subsystem:

1. **The Maze**: We will learn what action blocks are and how to sequence them together to enable our robot to navigate through a fixed maze.
2. **Banana Sorting**: Use sensors to determine the physical properties of a banana, then pull the right elver to sort it into the correct crate.
3. **Tyre Pumping**: Learn how to use a repeat block to perform the same action multiple times, in this case, inflating a tire to the perfect pressure.
4. **Red Light Green Light**: IF statements? WHILE loops? We will learn how to use them to cross a road without getting hit by traffic.

Proceed to the Create step and begin the first subsystem to get started with the first test. Your learning journal and/or teacher will walk you through completing each subsystem. When you complete a subsystem, return to the Create step and start the next until you have completed them all!