**Report**

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**Descriptive title:** walking robot and moving robot arm

**User’s Guide**

**Goals:** The HTML file should display two rotating 3D parts and two moving/rotating 3D assemblies.

**Instructions:**

* **Under the first canvas titled ’3D parts’, there are three sections for user interactions:**
  + **Keyboard Section:** You can press the right key(->) on the keyboard to spin up the rotation. You can press the left key(<-) on the keyboard to spin down rotation. Or you can click the buttons in this section to spin up/down and stop the rotation of the two 3D parts.
  + **Mouse Drag Section:** You can drag the mouse to rotate the 3d object on the top left of this canvas.
  + **Color Section:** There are three colours to draw the 3D parts. You can click the three boxes with white margins to select the colours. The colours below the three boxes are the original colour. You could compare them with your changed colours.
* **Under the third canvas titled ‘3D Assemblies:robot arm’, there are two sections for user interactions:**
  + **Button Section:** You can click the buttons to stop or start the rotation of the three angles implemented in this robot arm. Angle 0 is the bottom angle controlling the base’s rotation. Angle 1 is the middle angle controlling the arm’s rotation. Angle 2 is the top angle controlling the fingers’ rotation.

**Results**

There are three canvas on the screen:

**A screenshot of a computer program

Description automatically generated**

1. The first canvas titled **‘3D Parts’** has two 3D objects. These two objects rotate automatically without user input. The object at the bottom translates right and left.

You can change the colour of the two 3D parts.

A screenshot of a computer generated image

Description automatically generated A row of different colored squares

Description automatically generated A screenshot of a cell phone

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Figure1:One example of changing colour Figure2: colour boxes Figure3: The original colour

1. The second canvas titled **‘3D Assemblies: walking robots’** contains a robot walking along with the z-axis.

A screenshot of a computer screen

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Figure 4: robot walks to the front Figure 5: robot walks to the back

1. The third canvas titled **‘3D Assemblies:robot arm’** contains a moving robot arm. The fingers are moving too!

A screenshot of a phone

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Figure 6: Moving robot arm example 1 Figure 7: Moving robot arm example 2

**Scene Graph**

1. **3D Assemblies: walking robots:** A diagram of a diagram

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2. **3D Assemblies: robot arm:**A diagram of a diagram

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3. **Scene graph for 3D parts:**A diagram of a diagram

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