**Checkpoint 1: Problem Statement**

Task is to develop geometry tool that allows users to interact with geometric elements on a canvas. Tools will have feature as:

1. Segment Tool – User must select the segment tool explicitly to draw lines, otherwise drawing is not permitted.
2. Line Tool –
   1. Each line should have distinct start and end points
   2. If two lines are connected at the same point, they should share the same name.
   3. Drawn lines should have their length, with 4 grid unit equal to 1 cm.
3. Angle Display – If two lines are connected at same point then to display angle between them.

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**Checkpoint 2:**

Approaches:

1. Manual Input – User can input length of line manually and points.
2. Toggleable grid unit - User can click on canvas to pin one point then another point to get line between 2 points.
3. Real-time line draw – User can drag from one point to another point to create a line.

Benefits:

1. Manual Input – Will give precision of line and points.
2. Toggleable grid unit – Easy to draw.
3. Real-time line draw – User friendly, user will able to see real-time length of line

Best Approach According to me:

**Real-time line draw** – Drag from one place to another is user friendly, at it can show real time length and angle between the lines. From this drawing will be easy to user and can create precise diagram according to need.