An algorithm is a repeatable process that delivers an expected result. An engineer might use an algorithm to help others troubleshoot common design problems.

Part 1: Describe Your Design

Sketch and label your design here:

Think about the parts of your design and the purpose of each part (what it does and what makes it important to the overall function). Then, troubleshoot to identify why this part might not work.

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<th>Part</th>
<th>Purpose</th>
<th>Troubleshoot</th>
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In this assignment, you are going to create an algorithm to solve a design problem. In the example, there are different shapes that represent different types of steps. Use the key below to use the same shapes in your algorithm and create new shapes to show other types of steps. You can also create your own shapes to draft your algorithm on a computer using a tool such as LucidChart, Smartdraw, or Draw.io.

Start by writing your problem below, and then add clarifying questions and solutions to help someone solve it.
After completing your algorithm, work with a partner to debug -- which is to find and fix errors -- and improve it:

- Have a new partner use this flowchart to work through your algorithm
- Repeat this debugging algorithm until two partners are able to compare to complete your algorithm without any errors

Talk with the partner who developed this algorithm to share your process and feedback:
- What was unclear about this step?
- How was the intended goal of the step different than what actually happened?
- What do you need to feel prepared to go the next step of the algorithm?
Use this feedback to fix the identified errors.

Yes

Do you feel prepared to do the next step?

Yes

Execute the step. Does the goal you identified match what happened?

Yes

Can you identify the goal of this step?

No

Talk with the partner who developed this algorithm to share your process and feedback:
- What was unclear about this step?
- How was the intended goal of the step different than what actually happened?
- What do you need to feel prepared to go the next step of the algorithm?
Use this feedback to fix the identified errors.

No

Text

There are no more steps in the algorithm to complete.