Outline

Play the original Simon game to establish a mind-set around basic game systems. Research the history of game systems. Analyze the Simon game from an input-process-output perspective.

Objectives

· Use the input-process-output model to solve programming problems.
· Use industry-standard programming tools (e.g., UML [Unified Modeling Language], diagrams, structure charts, flow charts, pseudo code) to develop a software project.

Materials

· Simon game obtained from teacher

Level 1: Start of Game - Input / Output Analysis

Explore the Simon Game and Instruction Booklet to understand how the game works with respect to starting a new game.

Describe how to start a new game in your own words using point form.

To start the simon game specifically for the bigger game you would have to tap the small green button in the middle og the game to start.If you wish to change the type of game you would tap the small green button in the middle and based on the displayed game and stay on that game until it starts.

Reformat your answer to question #1 above to identify and list all the steps required to start a new game.

- I you tap the green button in the middle then the game will start.
- If you tap the first button of the pattern then the game will give you a new pattern of two.

List all of the user input objects and actions using a table similar to the one below.

Object	Action	Result
. Red Button	Push	Simone game will repeat a new pattern and Record your previous pattern.
Green button	Push	Simone game will repeat a new pattern and Record your previous pattern.
Blue button	Push	Simone game will repeat a new pattern and Record your previous pattern.

· List all of the user output objects and actions using a table similar to the one below.

Object	Action	Meaning
. Red Light	Play tone	When you tap the different colors it each has a different sound. If you tap the wrong button it makes a different tone.
Blue light	Play tone	When you tap the different colors it each has a different sound. If you tap the wrong button it makes a different tone.
Yellow light	Play tone	When you tap the different colors it each has a different sound. If you tap the wrong button it makes a different tone.

Level 2: Game Play - Input / Output Analysis

Explore the Simon Game and Instruction Booklet to understand how the game works with respect to playing the game.

1. Describe how to play the game in your own words using point form. Assume that the pattern is at the 3 tone stage (e.g. Red, Green, Blue).
To play the game, for example you have a pattern of 3 so you would tap a color. For example you would tap the color red then the simon game would give you a new pattern of 4 and so on.
2. Reformat your answer to question #1 above to identify and list all the steps required to start a new pattern.
If the player taps the red button on level 3 then the simon game would give a new color in addition to the old pattern.
3. Reformat your answer to question #1 above to identify and list all the steps involved in successfully completing the pattern (e.g. Red, Green, Blue).
If the simon game tells you to tap the green button then you tap to green button.
4. Reformat your answer to question #1 above to identify and list all the steps related to making a mistake in the pattern (e.g. Red, Green, Red).
If the player makes a mistake on the simon game then the simon game would make a different noise.
5. List all of the user input objects and actions using a table similar to the one below.

Object	Action	Result
Red Button	Push	Simon game gives a pattern and you push the

		button and pattern is continued
Green button	push	Simon game gives a pattern and you push the button and pattern is continued
Blue	push	Simon game gives a pattern and you push the button and pattern is continued

6. List all of the user output objects and actions using a table similar to the one below.

Object	**Action**	**Meaning**
Red button	Play tone	When you tap the different colors it each has a different sound. If you tap the wrong button it makes a different tone.
Green button	Play tone	When you tap the different colors it each has a different sound. If you tap the wrong button it makes a different tone.
Blue button	Play tone	When you tap the different colors it each has a different sound. If you tap the wrong button it makes a different tone.

Level 3: Flowchart Conventions

Research and explore how flowchart symbols can be used to represent pseudo code for computer programs.

1. Read the background information at: https://www.smartdraw.com/flowchart/

1. Hand draw and explain each of the basic flow chart symbols.

2. Find an example flow chart that uses each basic symbol at least twice. Hand draw the flow chart and explain the logic flow using words in point form.

Level 4: Flowchart the Simon Game

1. Create a flow chart showing the pseudo code for a three-tone pattern game you described in your Level 2 answers.