**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, pseudocode) to develop a software project.

**Prerequisites**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Prerequisite Module(s)** | **Level** | **Student Initial** | **Teacher Initial** | **Date** |
| None |  |  |  |  |

**Materials**

* Simon game obtained from teacher

**Level 0: Play the Simon Game**

Play the Simon game in your group while taking note of the following game-play items:

1. What was your personal best score?

**My best score was 11.**

1. What was the personal best score in your group?

**The best score was 11.**

1. What makes it a good game?

It was a challenging game.

1. In what ways is it similar to modern computer games?

**A lot of computer games have memory testing games like simon.**

Play the Simon game in your group while taking note of the following technical items:

1. How do users input information into the game?

**The user Pushes buttons.**

1. How does the game output feedback to the players?

**Sounds and lights.**

1. What are the game options for starting the game?

**Red is flashed for single player mode and green is flashed for group mode.**

1. What are the end conditions for stopping the game?

**The game tells the user the score and ends the game.**

**Level 1: Simon History**

Suggested web resource: http://americanhistory.si.edu/collections/search/object/nmah\_1302005

Research the history of the Simon game, focusing on the following questions:

1. Who created Simon?

**Ralph Baer**

1. What previous game was it based on?

**Atari’s touch me**

1. What was the first game system?

**Magnavox odyssey**

1. What games did it have on it?

**Pong, table tennis , volleyball and more.**

In your group, discuss the following questions:

1. What is the oldest game system you have played on?

**Gameboy Advanced**

1. How are old games different from current games?

**Graphics are better, more detail in the game, larger memory needed for games.**

1. How are old games similar to current games?

**Controls, game categories**

**Level 2: Input – Output Analysis**

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

|  |  |  |
| --- | --- | --- |
| **Object** | **Action** | **Description** |
| e.g. Red Button | e.g. Push | e.g. Starts the game in single player mode |
| e.g. Red Button | e.g. Push | e.g. Record a step in the pattern |
| e.g. green Button | e.g. push | e.g. starts the game in group mode |
| e.g. green Button | e.g. push | e.g. record a step in the pattern |
| e.g. Yellow Button | e.g. push | e.g. record a step in the pattern |
| e.g. Blue Button | e.g. push | e.g. record a step in the pattern |

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

|  |  |  |
| --- | --- | --- |
| **Object** | **Action** | **Description** |
| e.g. Red Light | e.g. Flash | e.g. Indicates a step in the pattern |
| e.g. Red Sound | e.g. Play tone | e.g. Indicates a step in the pattern |
| e.g. green light | e.g. Flash | e.g. indicates a step in the pattern |
| e.g. green sound | e.g. Play tone | e.g. indicates a step in the pattern |
| e.g. blue light | e.g. Flash | e.g. indicates a step in the pattern |
| e.g. blue sound | e.g. Play tone | e.g. indicates a step in the pattern |
| e.g. yellow light | e.g. Flash | e.g. indicates a step in the pattern |
| e.g. yellow sound | e.g. Play tone | e.g indicates a step in the pattern |

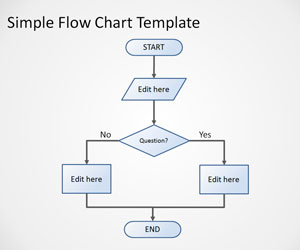
1. List all of the all of the ways that an input action results in an output action using a table similar to the one below.

|  |  |  |
| --- | --- | --- |
| **Input Object** | **Output Object** | **Process Connection** |
| e.g. Red Button | e.g. Red Light | e.g. Flashes when button is pushed |
| e.g. yellow button | e.g. yellow light | e.g. flashes when button is pushed |
| e.g. blue button | e.g. blue light | e.g. flashes when button is pushed |
| e.g. green button | e.g. green light | e.g. flashes when button is pushed |

**Level 3: Flowchart Conventions**

Suggested web resource: <https://www.smartdraw.com/flowchart/>

1. Draw and explain the basic flow chart symbols.
2. Create an example flow chart that uses each basic symbol at least twice.



**Level 4: Flowchart the Simon Game**

1. Create a flow chart showing the process connections for a three-tone pattern in the middle of the Simon game.

**Down in link below**

1. EXTENSION: Create a flow chart for the whole Simon game.

https://cloud.smartdraw.com/share.aspx/?pubDocShare=372B09DB400461EA5E0CB5BBA9969B38D2C

**Achievement Record – Module A.1: Simon Game Icebreaker**

|  |  |  |  |
| --- | --- | --- | --- |
| **Attainment Level** | **Student Initial** | **Teacher Initial** | **Date** |
| Level 0: Play the Simon Game |  |  |  |
| Level 1: Simon History |  |  |  |
| Level 2: Input – Output Analysis |  |  |  |
| Level 3: Flowchart Conventions |  |  |  |
| Level 4: Flowchart the Simon Game |  |  |  |