Terms of Reference

Project name: *Snake game*

Description:

Snake Game. The player controls the snake on the playing field, trying to get the highest score, avoiding collision with his own tail and eating apples to increase the length of the snake and score points.

Playing field features:

- Playing field size: 30x30.
- No walls: The snake can move freely within the playing field, without the possibility of colliding with walls. When the snake goes outside the playing field, it appears on the opposite side.

Game mechanics:

- Player's goal: Get the highest score by avoiding collisions with his own tail and eating apples.
- Snake Growth: The snake increases its length when eating apples by 1.
- Scoring: The player gets 5 points for each apple eaten.

Counters:

- “Current Score” - displays the player's current score.
- “Maximum Score” - remembers the player's highest score for the entire game.

Game state indicators:

- “Play” - active state of the game.
- “Fail” - the state in which the player lost (collision with the tail).
- “Pause” - the state of pause.

Controls:

- Start button: Starts the game by placing the snake in the center of the field and starting its movement.
- Pause button: Stops or resumes the snake's movement when pressed.
- Control is accomplished with the four WASD keys.

Technical Requirements:

- Logisim-based implementation using assembly language hardware in the CocoIDE development environment.
- Involvement of the CDM-8 processor.
- Creation of a generator for apples appearing on the playing field.
- Realization of the algorithm for detection of collisions of a snake with its tail.
- Graphical representation of the playing field.