

PROJECT TASK 5

CAVE MAP CREATION

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Design Document

This document will highlight the process specifications of our solution.

Context Diagram

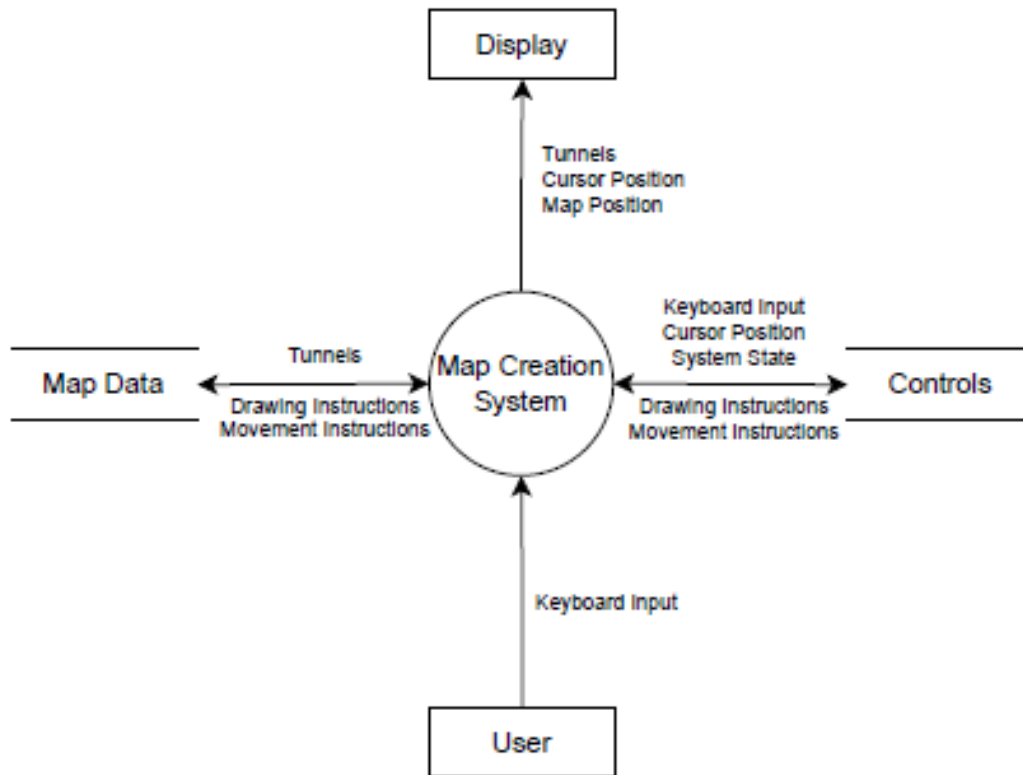


Figure 1: Context Diagram for Cave Map Creation

Event List

- Keyboard input from user (control)
- Drawing instructions from controls (flow oriented)
- Movement Instructions from controls (flow oriented)
- Load map data (flow oriented)
- Save map data (flow oriented)
- Output map data to display (flow oriented & temporal)

Figure 0

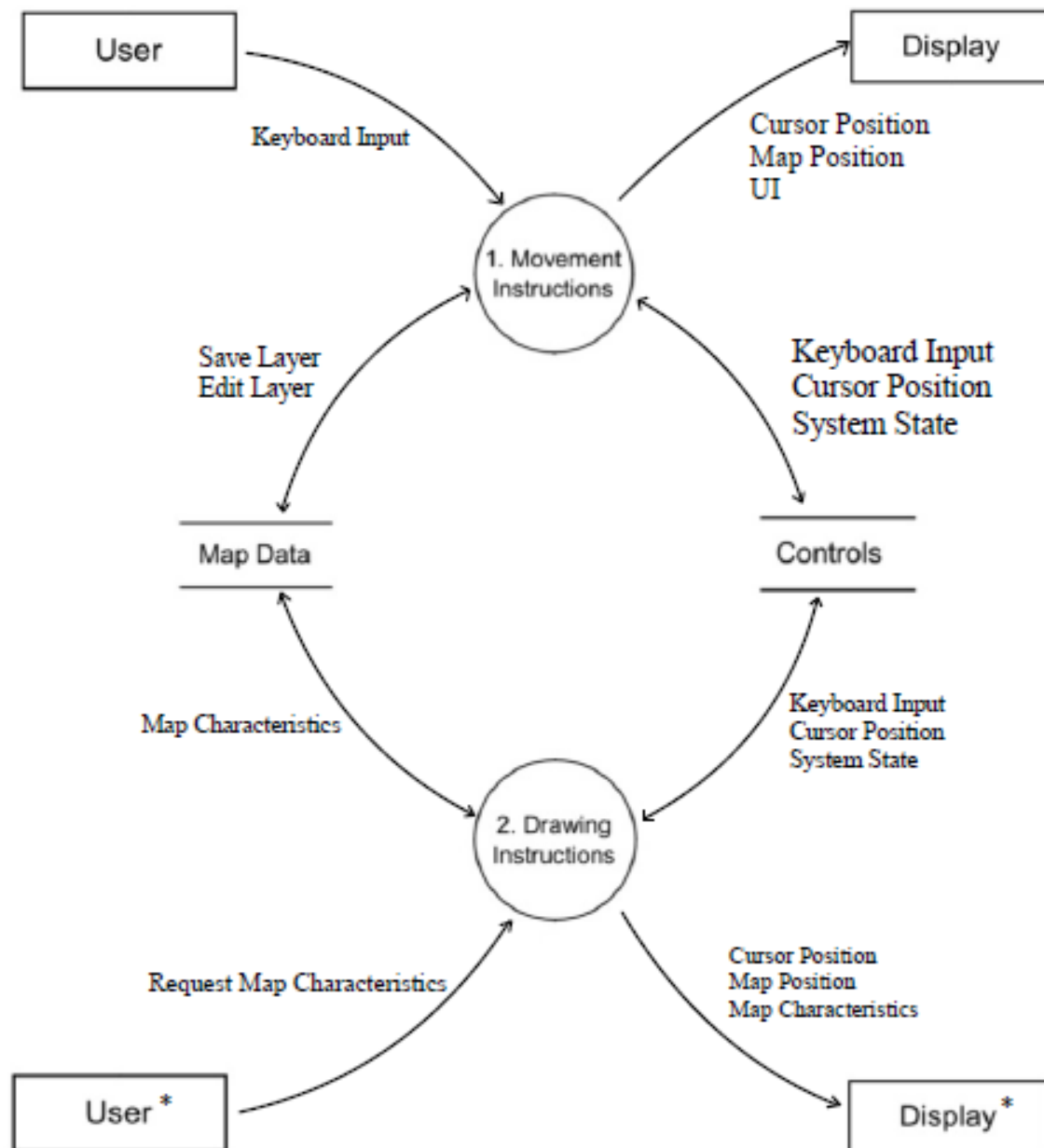


Figure 2: Figure 0 for Cave Map Creation

Data Dictionary

- Controls = System State + Keyboard Input + Cursor Position
 - System State = [Drawing | Moving]
 - Keyboard Input = [Up Arrow | Down Arrow | Right Arrow | Left Arrow | Home | End | Insert | Delete | Page Up | Page Down]
 - Cursor Position = [0-999] + [0-999]

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- Map Data = Map Characteristics + Map Position + Layer Data
 - Map Characteristics = Friction + Radiation + Ritterbarium + Type
 - Friction = [1-9]
 - Radiation = [0-100]
 - Ritterbarium = [0-10]
 - Type = [0-100]
 - Map Position = [-90 – 90] + [-180 – 180]
 - Layer Data = [1-100]

Process Definitions

The first process will be given in pseudo code, the second in a flowchart.

1. Movement Instructions

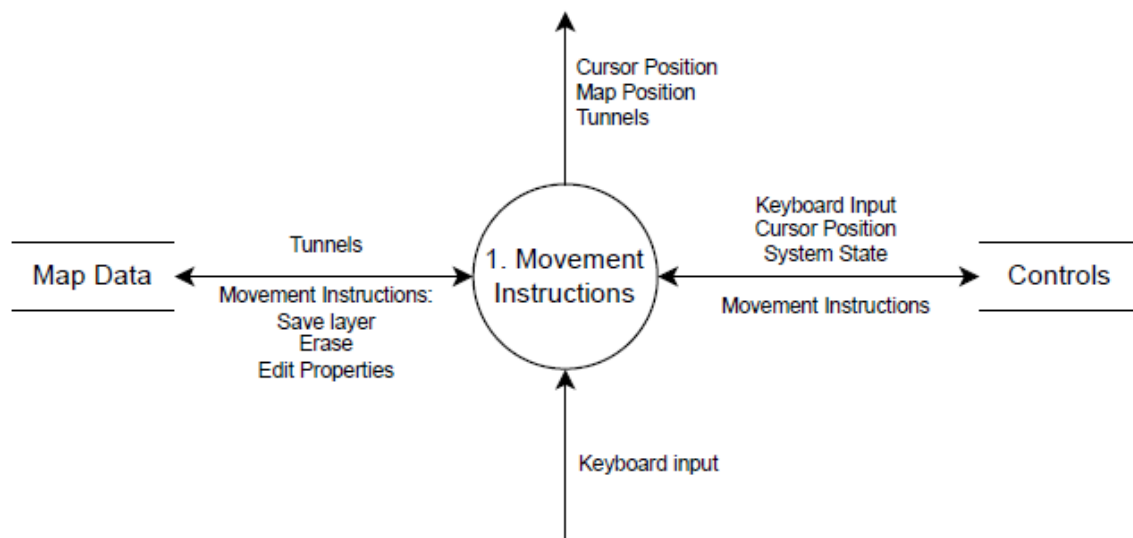


Figure 3: Process 1 Event Partition for Cave Map Creation

The following assumes that the System State is in Cursor Movement Mode:

1. Read keystroke.
2. If no keystroke is detected OR an invalid keystroke is read, go to Step 1.
3. If keystroke valid then determine process.
4. Cases:
 - Up Arrow: decrease row by one, go to Step 5.
 - Down Arrow: increase row by one, go to Step 5.
 - Right Arrow: increase column by one, go to Step 5.
 - Left Arrow: decrease column by one, go to Step 5.
 - Home: Move cursor to screen position (1, 1), go to Step 5.

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- End: Exit program.
 - Insert: Changes System State to Map Drawing Mode, go to Process 2.
 - Delete: Erase character at cursor position, go to Step 5.
 - Page Up: Save current layer. Then move up one layer. Go to step 5.
 - Page Down: Save current layer. Then move down one layer or use existing layer. Go to Step 5.
5. Update Controls and Map Data Stores.
 6. Send updates to display changes on console.
 7. Go to Step 1.

2. Drawing Instructions

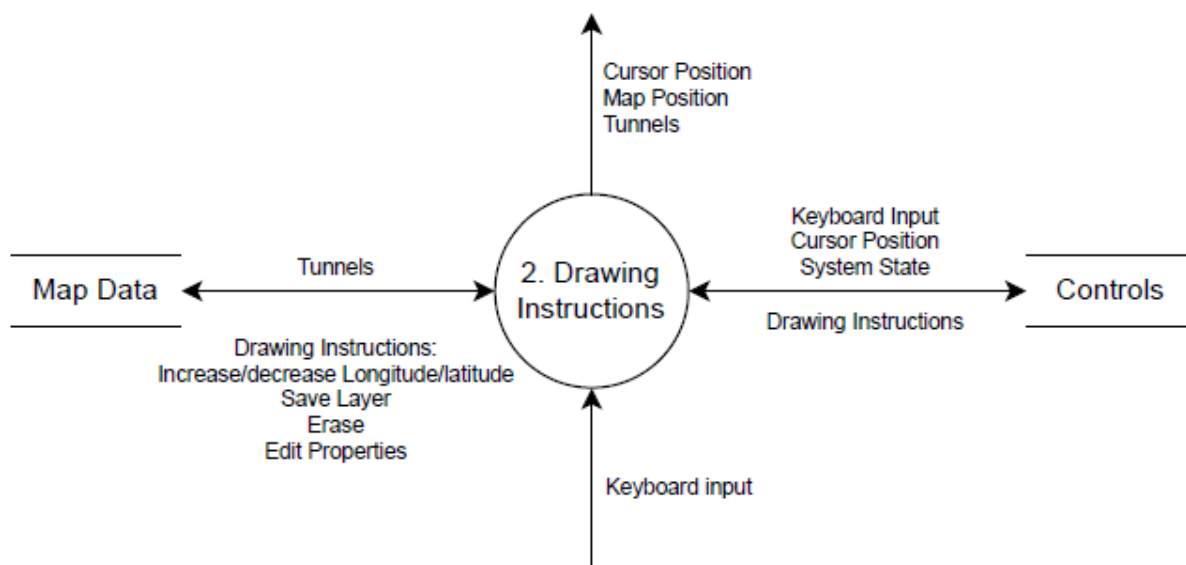


Figure 4: Process 2 Event Partition for Cave Map Creation

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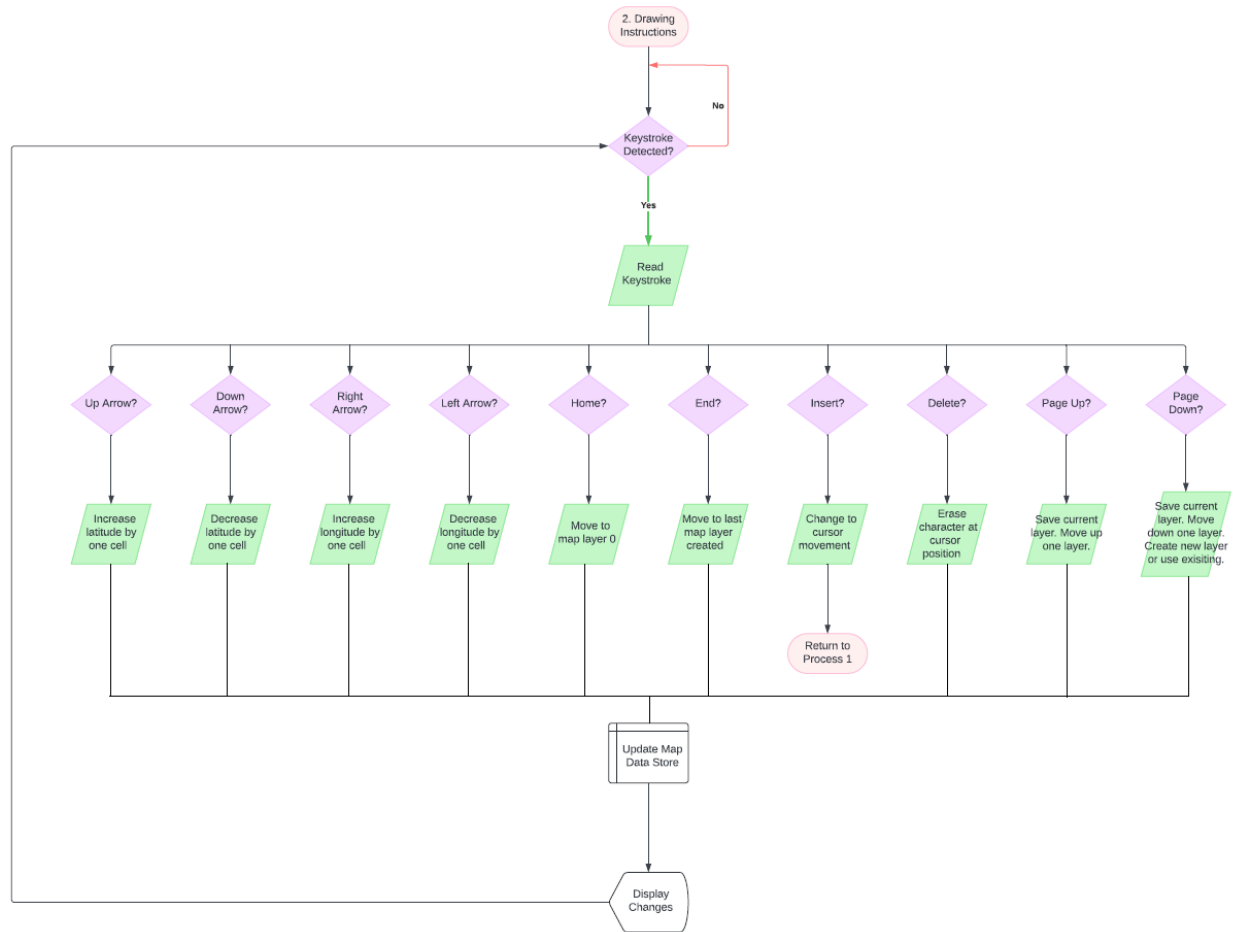


Figure 5: Process 2 Definition using Flowchart