Interview tasks

The interview is 30 minutes, and we reserve roughly 15 minutes for you to present and discuss your solution to the tasks.

Task descriptions:

Map tile renderer. You are tasked with implementing a tile renderer in C++ for displaying map tiles. A rasterized map tile set can be found here: tile-renderer

Data:

- Source: National Land Survey of Finland.
- Pixel size: one pixel is 2x2m
- Coordinate system: ETRS89/TM35FIN(E,N) (EPSG:3067)
- Metadata in .pgw files:
    - Pixel size
    - Rotation parameter
    - Negative pixel size
    - X-coordinate (center of upper left pixel)
    - Y-coordinate (center of upper left pixel)

Requirements

- The screen size is 800x600px with a pixel size of 2x2m.
- The user should be able to navigate the map seamlessly.
- You may use any library or tools you find appropriate for the task.

1. **Place a marker on the map.** You are asked to place a marker on the map at a coordinate (latitude and longitude) given in decimal degrees using the WGS84 coordinate system.

   Requirements

   - Create an input field where the user can provide a longitude and latitude coordinate in WGS84. A marker is placed on the map in the correct location.

2. **Code review.** You are asked to make your code available on a public repository (e.g., GitHub) and share it with us. We will perform a code review after the interview where we assess the following:
   - Structure of the code
   - Code documentation
   - Performance and efficiency
   - Error handling