Maze Generation Action Plan

Preparation & Setup **(0.25 hours)**

* **Configure** Unity 2020.1 (or newer) and create a fresh C# project.
* **Set up folder structure**:
  + Scripts/ (for code)
  + Scenes/
  + Materials/
  + Prefabs/
  + Documentation/

Research & Algorithm Selection **(2 hours)**

* **Review perfect‑maze algorithms** (e.g. Recursive Backtracker, Kruskal’s, Prim’s) and choose one that balances simplicity and performance for up to 250×250 cells.

Core Maze Generation **(5 hours)**

1. **Data model** (1 h)
   * Define Cell class: coordinates, walls (N/E/S/W), visited.
   * Define Maze class: width, height, 2D array of cells.
2. **Algorithm implementation** (3 h)
   * Implement your chosen algorithm.
   * Ensure no loops and full connectivity.
3. **Visualization** (1 h)
   * Create a prefab or procedural mesh to draw walls/floors

UI & Configuration **(4 hours)**

* **UI layout** (1 h)
  + Canvas with input fields for Width & Height (min 10, max 250).
  + “Generate” button.
* **Connections** (2 h)
  + Read inputs, validate ranges, call Generate() on button click.
  + Allow re‑generation at any time, cleaning up old maze.
* **Responsive design** (1 h)
  + Test & tweak Canvas Scaler and anchors for:
    - Desktop (1920×1080)
    - iPad (2048×1536)
    - iPhone X (2436×1125)

Polish & Documentation **(2 hours)**

* **Code cleanup**:
  + Consistent naming conventions.
  + Single‑responsibility classes.
  + Remove duplication.
* **Comments & architecture doc**:
  + Inline XML comments on classes/methods.
  + One‑page class‑diagram or flowchart in Documentation/.
* **Hour log**:
  + Fill in any missing details, reference any tutorials or online sources you consulted.

Bonus Features **(2 hours)**

Pick *one* or two that excite you:

* **Algorithm switcher**: drop‑down to choose between backtracker and Prim’s.
* **Step‑by‑step** generation.
* **3D models** for walls and particles.

Final Delivery **(1 hour)**

* **test** the Unity project
* **Zip** entire project folder, including:
  + HourLogs/Documentation