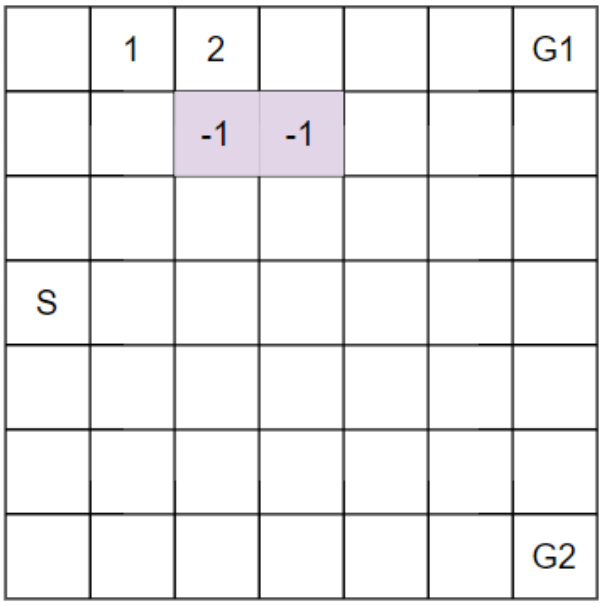
Course: Artificial Intelligence
Midterm

March 15, 2024

Use search tools, ChatGPT, Copilot, … to **create** a problem of path-finding

Q 1. [3pts] **Design** a simple 2D maze where each cell can be either **obstacle** or **empty**.



Requirements:

a) The grid with dimensions 15×15.

b) Each cell can be either an obstacle (denoted by -1) or empty (denoted by a cost value $\in \mathbb{N}^+ = \{1, 2, ..., \infty\}$) .

c) At least 50% of cells are obstacle.

d) One start cell $(0, 7)$ and two goal cells $\{(15, 0), (15, 15)\}$.

Q 2. [3pts] **Run** DFS, BFS, A*

a) **Compare** their complexity

b) **Visualize** the results

Q 3. [3pts] **Run** a local search algorithm to find the goal.

a) **Write** implementation of local search algorithm

b) **Compare** with DFS, BFS, A*

c) **Visualize** the result

Q 4. [1pt] For clear writing