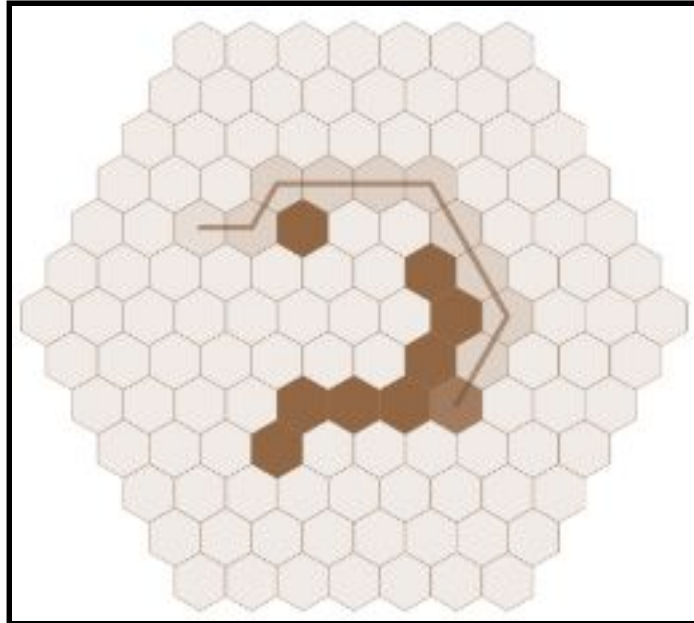


Game Development BCN - Final Examination - January 16th 2018

YOUR FULL NAME:

- You have 2 hours to complete the assignment.
- Only valid text will be the one inside each box, everything else will be ignored by the teacher

1. **(3 points)** Explain would you adapt the A* algorithm to hexagonal grids. What would change, what would stay the same and **why**.

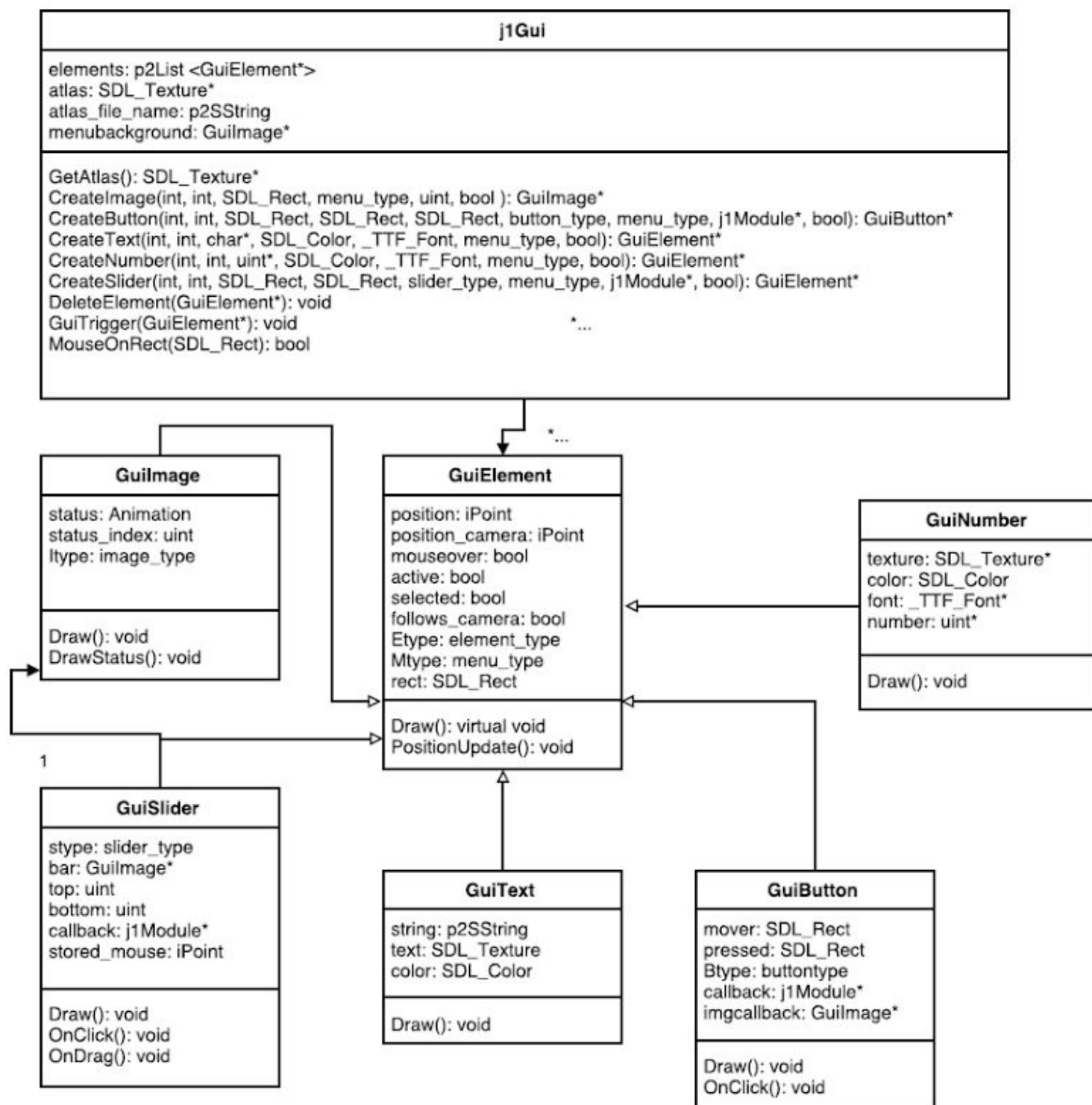


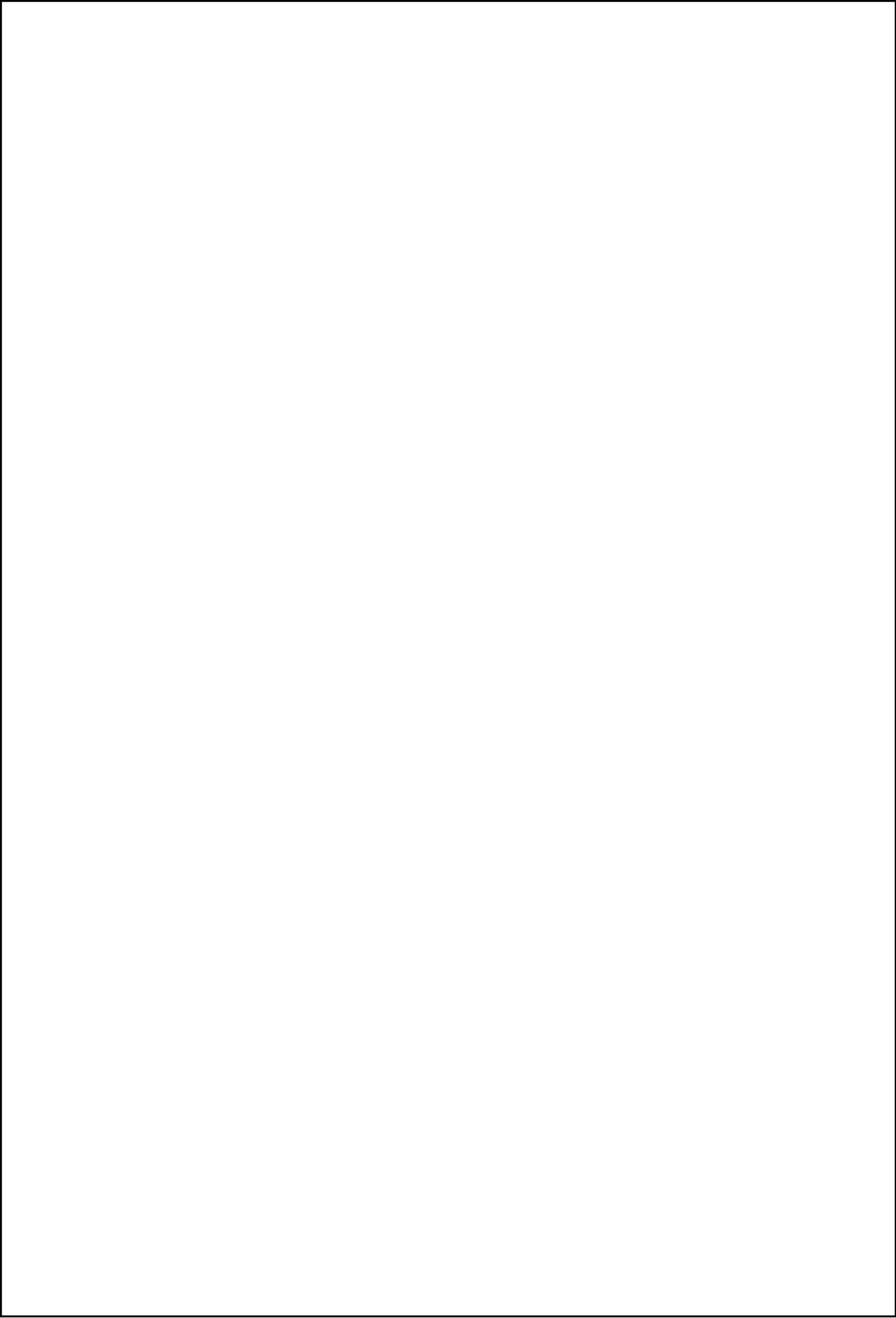
2. **(2 points)** If we have a game where the logic runs at 100 frames per second with vsync turned on (monitor refresh rate of 75 Hz) and our main character moves at 150 pixels per second. Taking in account that we have variable time step, how many pixels the character moves every frame ? And if we suddenly drop our logic frame rate to 32 ? **Elaborate** your answer.

3. **(2 points)** Explain the concept of an **Class Factory** and how it applies to an Entity System. Write a simple example in C++ were the only types of entities are "*player*" and "*npc*".

4. (3 points) Given this UML that describes an UI system, point out the mistakes and how you would improve it. Do not create another UML, focus on improving this one. Categorize every mistake with a keyword: **C**: critical, **I**: important and **O**: optional.

Example: "C: *j1Gui::menubackground is hardcoded value, remove it*"





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