Project 4, CSC/CPE 203

Due: 12/10 @10PM

For this Project, you will modify the virtual world to support a "world-changing" event. This event is to be triggered by a mouse press and must have a localized effect. The event must be visualized by changing the affected background tiles and by modifying the affected entities (more below). In addition, the world event must create a new type of entity (any entities you like, be creative). You can use your Project 2 or Project 3 for this Project.

Objectives

- Add new functionality to existing code base demonstrating an understanding of the existing design and functionality.
- Be able to evaluate the current design based on the experience of adding to the code

World Changing Event: Visualization

Decide on a world-changing event (e.g., a river spawns, a volcano erupts, or a rainbow is cast across the land). This event must be triggered by a mouse-click and must affect at most 7 tiles of the world in proximity to the mouse position when the click occurs. The event should affect no more than half of the world. Users can click the mouse as many times as they want.

The world event must be visualized by modifying the background image of the affected tiles. You are free to modify them however you would like, and you are encouraged to be creative.

World Changing Event: Effect

At least one type of existing entity (e.g., Dude or Fairy) must be affected by the world event, based on proximity to the event location. More specifically, this type of entity should change in appearance *and* behavior.

For example, a rainbow might change nearby Fairy into some other entity that seeks out something. Or the event might make the House start to change the size or color (while maintaining the dude's prior behavior of bringing wood to a House, even while the House is changing).

The affected/transformed entities should change appearance and should change behavior.

World Changing Event: New Entity

The world event must cause a new type of entity to spawn. This new entity should animate and move according to logic defined by you.

For instance, the new entity might seek out Fairy to turn them into something else, chase down Dude to infect them with the plague, or travel the world spreading some seeds.

Note: This new entity is in addition to the entity transformation triggered by the event as just discussed. For example, a Dude transforming into a completely different kind of entity does *not* count for this

requirement. A new entity must spawn (i.e. there are now more things in the world, not just an existing thing replaced.)

Description

Include a text file named `WORLD_EVENT.txt` in your submission that describes:

1. how to trigger the event
2. what should happen when the event is triggered
3. what the affected entities should do
4. what the new entity is and how it should behave

Design

Be sure to adhere to the design principles discussed this quarter. Refactor your code as needed and resist the urge for quick hacks that would increase maintenance costs.

You are encouraged to reflect on the quality of your design and the effort required to add the functionality for this assignment. How do you think this effort compares to that needed to add the same functionality to the originally given code? (Especially if you have, e.g., entities that move quite differently from the original set.)

Additional Requirements

The images for your changed background, affected entity, and new entity must be created by you. You may not use any of the existing images that came with the project. An exception is for your "affected entity", you may alter that entity's current image.

Grading

1) Run without error,
2) Mouse click,
3) Effect on entity
4) New entities
5) Animation of added entities
6) worldEvent.txt file that explains your project.

Submission

It will be due by 12/10 @10:00PM. (No late submission)

Your submission must include all source files (even those that were unchanged). Your grader should be able to build your project based on the files submitted. (You need to submit the image files, the image list, and the world save file. We need image of your new entities information.) An explicit list of files is not given because you are creating new files for this assignment, so verify that you have submitted everything properly. There is no UML required for Project 4.