Assignment 2 Design Doc

**Board (holds Rooms)**

Variables:

* 2d array that holds the rooms. Gives x y coordinates of room.
* I, j – the indeces for the array. The value of the indeces will determine which room is shown.

Functions

* Board – fills the array with rooms.
* Draw – draws the background color of the room.

**Room (Inside Board. Holds Items.)**

Variables

* Locked – boolean that states whether the room is locked or not
* Color – string that gives the background color of the room
* Objects – array that holds all items in the room
* Width – width of the room
* Height – height of the room

Functions

* Room – sets color, locked, width, height and fills object in room
* Draw – draws all the objects on screen
* toggleLock – switches the locked variable.

**Player (Holds items. Sublass of item)**

Variables

* Inventory – an array of items the player can hold
* Money – gold count of the player
* Damage – the amount of damage a player can inflict on a monster. Depends on the weapon player has equiped.
* Health – Health of the player.
* Armor – The armor a player has equipped. Mitigates any damage a player can take.
* Weapon – The weapon the player has equipped. Increases damage a player can deal.

Functions

* Player – initializes the player
* Move – changes the position of the player.
* Attack – inflicts damage on a nearby monster.
* Pick up – attempts to pick up an item.
* Action – Performs an action on an item. For example: activate a switch.

**Item (Abstraction. Inside Room and Player)**

Variables

* x – the x position in the room
* y – the y position in the room
* color – the color of the item
* shape – the shape of the item
* visible – boolean that determines the visibility of the item

Functions

* Draw – draws the item in the given position
* toggleVisibile – toggles the visibility.

**Monster (Item Subclass)**

Variables

* health – integer that gives the health of the monster
* damage – integer that gives damage of monster

Functions

* Monster – initializes the monster, sets position, visiblility, color, health, phrase and shape.
* Draw – draws the monster, if he’s visible, phrase will pop up in state panel.
* Move – moves the monster towards the player.

**Gold (Item Subclass)**

Variables

* Value – the monetary amount of the gold.

Functions

* Gold – sets position, color and visibility of the gold.
* Draw – draws gold.

**Sword (Item Subclass)**

Variables

* Value – number of gold needed to pick up sword.
* Damage – amount of damage sword does to monsters.

Functions

* Sword – sets the position, visibility, color, value, damage, and shape of sword.
* Set damage – sets the damage of the sword. Might be needed if there are upgrades player can purchase.

**Key (Item Subclass)**

Variables

* Rooms – an array of rooms the key can unlock. Rooms are automatically unlocked when player picks up key.

Functions

* Key – sets position, visibility, shape and color of key.