Joshua Reiss

Math 121

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SPACE GAME DOCUMENTATION

POINTS: 52-54

(I say 52-54 because abbreviations is worth 1-3 points.)

I have earned between 52-54 points by completing:

Drop, Weapons, Armor, Wait, Me, Inventory Max, Inspect, Stacking Items, Regeneration, Player Attributes, Currency, Bigger World, Random World, Events, Special Rooms, Leveling Up, Loot, Healing Items, Victory Condition, Auto-Gen Monsters, Characters, Abbreviations
These were completed as follows:

DROP:

```
  main.py:
    If input is "drop <item>" and item is in player's inventory,
            remove it from player.items
            add it to room.items
    else
            print fail statement.
```

WEAPONS AND ARMOR:

There are lots of defined weapon and armor types that spawn.
There are weapons, engines, and armors.
Armors increase your shields, engines increase your speed.
Weapons edit your accuracy and your strength.

```
  main.py:
    define lots of item types. (22 in total.)
    this way, the random item creator has lots to choose from.
    Store them as regular items in inventory.
    If the player tries to equip one, and doesn't have one of that type equipped...
  player.py:
    add the item to player.equipped
    remove it from player.items
    change equipped status for that item type to true.
    update the player's stats.
```

If you want to equip a different item of the same type, dequip it as follows:

```
  main.py:
        dequip <item> looks for the item in player.equipped.
        if present...
    player.py:
        remove from player.equipped
        add to player.items
        change equipped status for that item type to false.
        update the player's stats.
```

WAIT:

```
    main.py:
        there is a function waitstuff() that has the updater, leveling, random generation, etc.
            everything that happens when timepasses = true has been bundled in here.

        If the player inputs “wait <#>”, run through waitstuff that # of times.
```

ME:

```
    main.py:
        print out all of the player's attributes.
```

INVENTORY MAX:

```
    main.py:
        All items have a weight value.
            The player has a weight cap.
        if the player tries to pick up an item that would put them over their weight limit, stop them.
```

INSPECT:

```
    main.py:
        if the player writes “inspect <item>”, print the item's attributes.
        This can be done in-inventory and in-world.
```

STACKING ITEMS:

```
    player.py and monster.py:
        in player.showinventory() and shopkeep.storeinv(being),
        when printing out the items, they are given a quantity.
        This is done by HEAVILY modifying the inventory function.

        first, all of the items in self.items are added to a dictionary.
            the dictionary assigns each key three values: quantity, weight, and value.
            then, print out all of the values in itdict.
        second, print out all of the names and stat values for self.equipped

        the second step is skipped in storeinv(being) since it’s unnecessary.
```

REGENERATION:

```
    main.py:
        in waitstuff(), the player gains an amount of hp equal to their regen stat.
```

This is 1 + (player.level * 2)
If the player is near a refueling station, they gain 10 extra hp.

PLAYER ATTRIBUTES:
player.py:
the player has a LOT of new attributes.
their attributes are:
location, items, equipped, health, maxhealth, armor, weightcap, current weight, alive, speed, accuracy, strength, money, regen, xp, level, level up threshold, weapon equipped, armor equipped, engine equipped, xlocation, and ylocation.

Most of these are used in combat. The process of combat is explained in detail in the attack function in player.py

CURRENCY:
players and shopkeepers both have a money attribute.
when killing monsters and selling items, the player gets money.
This money can be used to buy stuff from shopkeepers.

BIGGER WORLD:
Upon starting the game, the player can make the world as big as they want.

RANDOM WORLD:
The world generation is completely random. The rooms all get random flavor text, random items, random monsters, and random traders.
The only non-random elements are:
the player always spawns at the middle of the world
the Strange Shopkeeper always spawns one room above the player.
New items and monsters and traders generate all the time as the game goes on.

EVENTS:
main.py
On any given turn, there is a 1/100 chance that The Starguy will spawn. If he does spawn, the game will print "STARGUY APPEARS."

Starguy is a trader who always spawns with a Pristine Hyperspace Engine, which only costs 10 currency.

To beat the game, the player needs 150 speed.
The Pristine Hyperspace Engine has a speed of 150.
Therefore, if Starguy spawns and you find him, you can beat the game immediately.

SPECIAL ROOMS:
main.py:

When generating the world, there is a 1/6 chance that any given room will be a refueling area. Here, the player gains 10 regeneration points per turn.

There is also a 1/6 chance that any given room will be an asteroid field. In asteroid fields, space rocks spawn much more frequently.

LEVELING UP:

main.py:

```
If the player's xp reaches (10 + ((player.lvl - 1) * 5)),
All of their stats increase as follows:
    increase strength, speed, acc, regen by lvl * 1.25
    increase health by lvl * 2.5
    increase weight cap by 10
    increase level xp cap by 5
```

Also, stronger monsters/items spawn when the player is a higher level. Monsters and items are divided into tiers that align with levels.

LOOT:

main.py:

When a monster spawns, they are given a random item(unless they are a cargo ship, in which case they are given multiple random items.) When a monster dies, a roll is made against their droprate. If the roll < their droprate, they drop a random item from their loot list.

HEALING ITEMS:

main.py:

There are four kinds of healing items of increasingly large hp value. If the player picks one up, they can equip or use it to dump it from their inventory and gain as much hp as it is worth.

Their hp cannot go over their max hp, however.

VICTORY CONDITION:

main.py:

If the player's speed stat is 150 or more and they type "escape galaxy" or "escape," they win the game.

AUTO-GEN MONSTERS:

main.py:

Monsters are divided into three tiers. On each turn, there is a 50% chance that a monster will spawn. Their tier is then randomly selected. How high their tier can be is determined by the player's level (i.e. tier 2 can't spawn until player is level 3). The monsters are then randomly placed. The monster will not be placed if there are already 2 monsters in the chosen room.

CHARACTERS:

main.py and monster.py:

Traders can be spoken to. This will open a little dialogue tree.

If the player aggressively asks for money, they will take all of the trader's money, and the trader will no longer trade with them.

There's also a secret here: if the player asks to talk with the trader about space, and the player types in exactly what the trader says about space, the player's xp is set to their level up threshold - 1 (in other words, they are put 1xp away from leveling up.)

ABBREVIATIONS:

main.py:
equip can be shortened to "use"
abbreviations can be shortened to "abbrevs"
inventory can be shortened to "inv"
attack can be shortened to "atk"
when moving, north south east west can be shortened to "n s e w"