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CS 126L Section 2

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Lab 02 - GameBook

1. Problem Statement

This program is a short choose-your-own-adventure story that's entertaining to read while
fulfilling the following four requirements,
1. There must be at least two decision points in every path through your story.
2. There should be at least one possible path through your story in which you encounter
   three or more decision points
3. At least one decision point must have at least three possible consequences.
4. At least one decision points must involve a numeric comparison. Your story choices
   don't have to involve only strings!

Other features this program should implement are as follows
● Allow the user to restart the game when it ends
● Notify the user with an error when they give the game an invalid input
● Notify the user of valid inputs

2. Planning

The first thing to point out is that since we are going to allow the user to restart the game when it
ends and give them an error when they give an invalid input, this is going to require the game to
operate from within a while loop. The branches of the story will be created using nested If trees.

It must be noted that, to allow the user to optionally restart the game on a death while providing
the same error checking for branches of the story, it will require placing while loops in the
nested If tree. This, in turn, will lead to repeating code, which we could make a separate class
with functions to fix this, but for this assignment, we decided not to as it would be to complex at
the moment.

We could use a .txt file to store the paragraphs for the story, and read the file to get those story
bits, but we decided that displaying the story using print was the simpler route that shouldn't
pose a problem.

Below is a flow diagram of the story, to help understand the various states of the game. Just note that any endpoint "Death" can take you back to the start point.
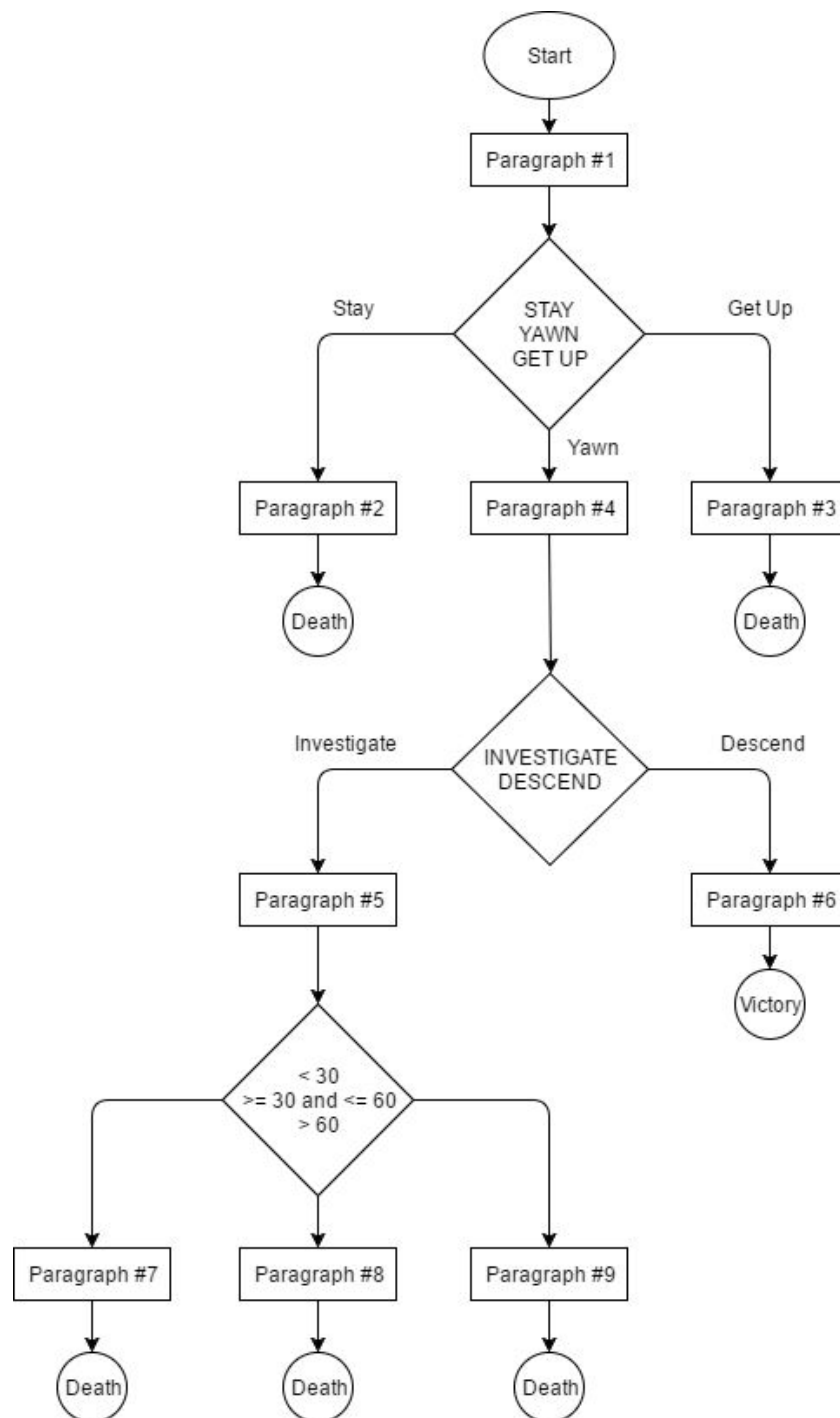
3. Implementation and Testing

Implementation of this plan was very straight-forward. The initial version of the code was long and looked complex, but it was really just the same pattern repeating of print paragraph, get input, convert input to uppercase, compare input to if statements, repeat or error or quit. The only issue was that we had to use a Try-Exception block to catch a ValueError if a String was being cast to int.

To refactor the code to make it readable, we moved all of the separate print statements of strings into their own section of data, with each variable holding a different paragraph of text. We then created a function that would handle the choice of the player deciding to quit or not, since that section of code that was repeatedly done five times across the program. With this and some other minor edits, the code became readable.

```
You awaken from your bed, feeling strange.
Something is going to happen today, something
big, but you don't know what....
Do you STAY, GET UP, or YAWN? error

ERROR: Enter one of the all-cap words

You awaken from your bed, feeling strange.
Something is going to happen today, something
big, but you don't know what....
Do you STAY, GET UP, or YAWN? yawn

You sit up, stretch and let out an uplifting yawn that dispels the sleep from your body
You get out of bed, putting on your normal clothes, then approach the stairs
By the stairs, you see an old family chest you haven't opened in years...
Do you DESCEND or INVESTIGATE? INVESTIGATE

You sense an eerie presence pouring from the chest
As you approach it, it strangely seems to move and shift, despite being rigid
You place both of your hands on the chest....
How hot does the chest feel? 20

The chest is freezing, you move to remove your hands, but they are stuck in place.
The lid opens, and the skin of the chest crawls into the void, dragging you along.
You struggle in vain, and as the darkness surrounds you and the light from the lid grows
fainter, you relax into sleep once again
Try Again? YES/NO: yes

You awaken from your bed, feeling strange.
Something is going to happen today, something
big, but you don't know what....
Do you STAY, GET UP, or YAWN? stay

Feeling tired, you go to get a couple more moments of sleep
As you cuddle up, you feel the bed is warm.... And moist....
As you look up, you realize in horror that you are eaten by a Bedoster
Try Again? YES/NO: no
>>> |
```

4. Reflection

For the problem we were given and the intended size of this project, we believe we arrived at the best solution. We consider and implemented some of the alternative ways we could do this same program, since the strictly procedural method we used to begin with was so cumbersome that it was barely readable. By adding a function and moving where the string information is stored on the file greatly increased the readability of the program. That being said, this program is not scalable in anyway, and if this program were to be built upon, then pursuing the other object oriented ways of implementing this program would be worth pursuing, specifically using nodes to hold decision points and paragraph information and a modified binary tree like structure for the program.