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17 January 2021

CSE13S Winter 2021
Assignment 1 : The Garlic Game
Design Document

DESCRIPTION

The Garlic Game is a risky vampire game in which vampires roll two 6-sided dice to see who is unlucky enough to eat the garlic. Rolls are sequential and if multiple vampires get the lowest number, the first vampire who rolled the number will lose a life. If a vampire rolls and gets two sixes, the vampires next to them will gain a life, and if dead, will resurrect. The game lasts until one vampire remains, with no exceptions.

In this lab, I implement the Garlic Game in C through the usage of files that were given to me from the assignment pdf.

Files:

- vampire.c
  - File with all the codes
- names.h
  - File with special dice roll names and vampire names
- Makefile
  - Runs vampire.c
- README.md
  - Information
- DESIGN.pdf
  - Describes purpose, covers the layout, clear description of program parts, pseudo code

TOP LEVEL DESIGN / PSEUDOCODE

include

- <stdlib.h>
- <stdio.h>
- “names.h”
- <inttypes.h>

```
Int main(void){

        Obtain user input/Print prompts

        Loop{
                Compute Round
                Print Round
                Print Print Rolls
                Print Garlic
                Print Lives
        } while(players alive >= 2)

        Print winner

}
```

DETAIL

Obtain user input

```
print(prompt for number of players)
n = getchar()
putchar(n)

if(n isn't valid input){
        Print(Invalid # of players)
        End program
}else{
        Continue with the code
}

print(prompt for random seed)
s = getchar()
putchar(s)

if(s isn't valid input){
        Print(Invalid random seed)
        End program
}else{
        Continue with the code
}
```

Loop

```
print(“Round “ + round number);

while(not one person){
        while(not last person){
                arrayNumber[i] = rollDie();
                print(“Name rolls “ + diceName);
                saveRoll();
                checkifdouble6(){
                        If(true){
                                arrayNumberLives[i-1]++;
                                arrayNumberLives[i+1]++;
                                print(Stuff);
                        }
                }
                i++;
        }
        Lowest = getLowest();
        print(Lowest + “ is forced to eat garlic!”);
        if(someone died){
                print(Name + “ has died.”);
        }
}
```

Print Winner

```
if(no one else is alive){
        print(Character + “ wins the Garlic Game!”);
        exit();
} else {
        Repeat loop
}
```

CHANGED BY PUTTING THIS INTO THE GAME’S LOOP ^

DESIGN PROCESS / MODIFICATIONS

List of all my modifications/alterations/misc:

- numPlayers and randSeed are global since I have to access it with roll()
- scanf used instead of getchar()
- Created numLives[numPlayers] thing so I can keep track of lives
- Created left() and right() using the document stuff

- Created new variables (rollOne, rollTwo, lowRoll, rollNumber, lowRollNumber, playersAlive, champion)
    - rollOne = First roll for person
    - rollTwo = Second roll for person
    - lowRoll = Index of person with lowest roll
    - rollNumber = Number rolled (rollOne + rollTwo)
    - lowRollNumber = Number of the person with lowest roll
    - playersAlive = Number of people alive
    - Champion = index of the latest person scanned with for loop
- Used scanf and looked at Eugene's section for implementation of that code
- Can't do nested functions in C, so had to implement playersAlive differently with for loop check
- Put the winner in for loop