Project 2

<9 Hours, 9 Persons, 9 Doors>

CSC5-42829

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**Introduction**

Title: 9 Hours, 9 Persons, 9 Doors

This is a puzzle game based on the Nintendo DS game 9 Hours, 9 Persons, 9 Doors. It is a game that encourages the player to make certain decisions and come to a certain ending. Although there are multiple endings, only one decision leads to the true ending. The player is prompted with a number of choices throughout the story. Whatever choice they make will affect their ending. There are choices where the player can go back, but there are also choices where it is an instant game over. The choices are up to the player. However, as the player approaches the true ending, the decisions get harder. Once the player has achieved the true ending, the program terminates itself.

**Summary**

Project size: 400+ lines

The number of variables: 6

The number of methods: 7

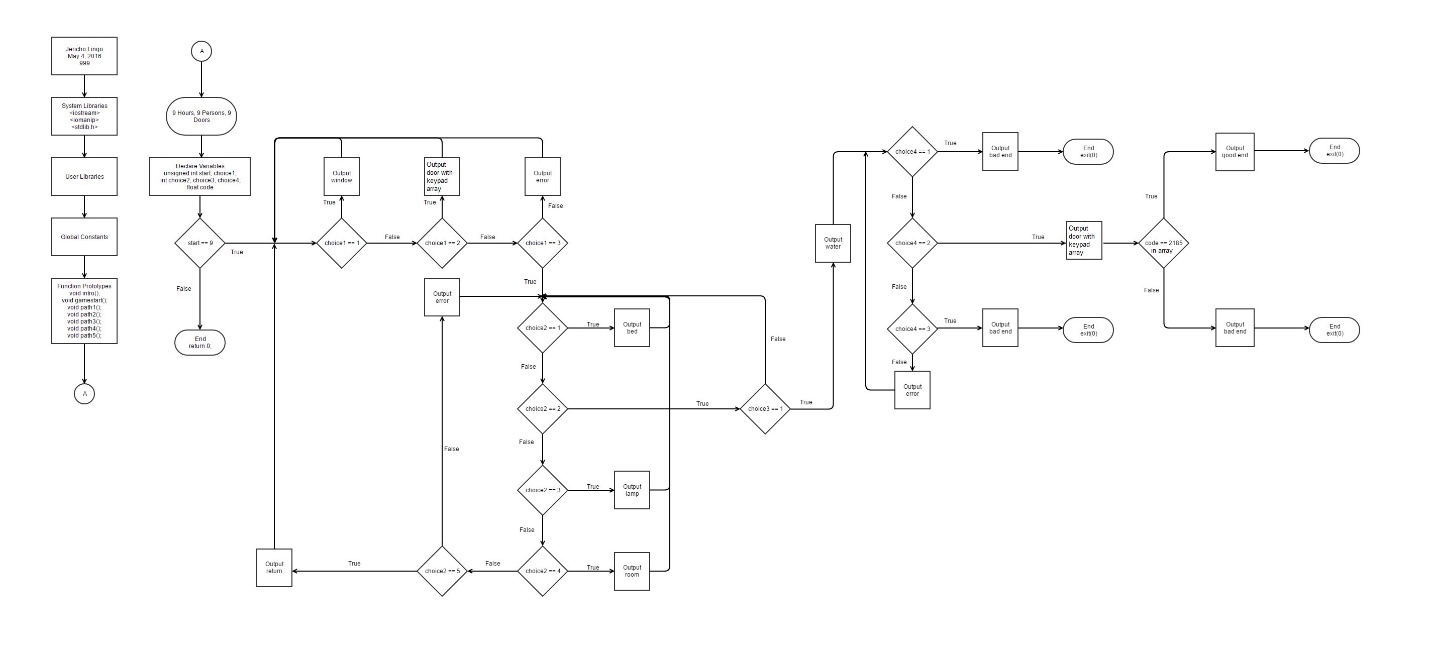
This project includes certain concepts based on reading Savitch’s Problem Solving with C++ starting from Chapter One through Chapter Eight. Unfortunately, I could not utilize as many arrays concepts nor vectors as I’d hoped to. Only 1 and 2 dimensional arrays were utilized as well as bubble sorting.

This project took nearly about 2 weeks to complete. I tried to utilize more concepts, but all I could implement were more simple lines of code such as loops and if statements as well as I/O stream. Also, I wanted to make sure that every input counts. Therefore, whether it detects a negative number or a random character such as “a” or “X”, it will always output an error and correct the player to make a valid input. Other than that, the logic is very simple and basically falls within branches of other scenarios.

**Description**

The main point of this program is to give outputs based on player inputs and lead to many other statements.

**Flowchart**

**Checklist**

Chapter One – Intro to C++

Chapter Two – C++ Basics

Chapter Three – More Flow of Control

Chapter Four – Procedural Abstraction and Functions That Return a Value

Chapter Five – Functions for All Subtasks

Chapter Six – I/O Streams as an Introduction to Objects and Classes

Chapter Seven - Arrays

Chapter Eight – Strings and Vectors

**Pseudo Code**

*Initialize*

*Switch*

*Case 9: Start game*

*Default: End game*

*If choice1 is one of the choices*

*Display text based on decision*

*Proceed to choice2 if chosen correct decision*

*Else*

*End game*

*If choice2 is one of the choices*

*Display text based on decision*

*Proceed to choice3 if chosen correct decision*

*Return to choice2 if player so desires*

*Else*

*End game*

*If choice3 is one of the choices*

*Display text based on decision*

*Proceed to choice4 if chosen correct decision*

*Return to choice2 if player so desires*

*Else*

*End game*

*If choice4 is one of the choices*

*Display text based on decision*

*Proceed to code if chosen correct decision*

*Else*

*Display bad end if chosen incorrect decision and end game*

*If code is correct*

*Congratulate player and end game*

*Else*

*Display bad end if inputted incorrect code and end game*

**Major variables**

|  |  |  |  |
| --- | --- | --- | --- |
| **Type** | Variable Name | Description | Location |
| Unsigned Integer | start | Player starts game | start() |
|  | choice1 | Choice for first outcome | path1() |
| Integer | choice2 | Choice for second outcome | path2() |
|  | choice3 | Choice for third outcome | path3() |
|  | choice4 | Choice for fourth outcome | path4() |
| Float | code | Code to input on keypad | path5() |

**References**

1. Textbook (Walter Savitch: Problem Solving with C++)

2. cplusplus.com

3. 9 Hours, 9 Persons, 9 Doors wikia

**Program**

// 9 Hours, 9 Persons, 9 Doors

//System Libraries

#include <iostream>

#include <iomanip>

#include <stdlib.h>

#include <fstream>

using namespace std;

//User Libraries

//Global Constants

//Function Prototypes

void intro();

void gamestart();

void path1();

void path2();

void path3();

void path4();

void path5();

void keypad();

//Execution Begins Here!

int main(int argc, char\*\* argv) {

//Declare variables

unsigned int start; //Variable for game start

//General Menu Format

do {

//Display the selection

intro();

//Read the choice

cin >> start;

//Code to avoid infinite loop after a character is introduced

//Although there is no loop, it's still here just in case.

cin.clear();

cin.ignore();

//Solve a problem that has been chosen.

switch (start) {

case 9: gamestart(), path1(); //Prompt player input to begin game

break;

default: //Terminates game if other value or character is inputted

{

cout << "Game terminated." << endl;

return 0;

}

};

} while (start <= 8 && start >= 10);

return 0;

}

//Intro

void intro() {

//Introduce the game

cout << setfill('-') << setw(17) << "-" << endl;

cout << " 999 999 999 " << endl;

cout << "9 9 9 9 9 9 " << endl;

cout << "9 9 9 9 9 9 " << endl;

cout << " 999 999 999 " << endl;

cout << " 9 9 9 " << endl;

cout << " 99 99 99 " << endl;

cout << setfill('-') << setw(17) << "-" << endl;

cout << "Welcome to 9 Hours, 9 Persons, 9 Doors!" << endl;

cout << "This is a VN (Visual Novel) based on the popular DS game, '9 Hours, 9 Persons, 9 Doors'." << endl;

cout << "This version of 999 (abbreviated for simplicity's sake) is a spoiler-free and cut-down version of the game." << endl;

cout << "Please play the full game that is available for the Nintendo DS and iOS." << endl;

cout << "To learn more about this game, please read the enclosed writeup or look it up on Google." << endl;

cout << endl << endl;

//Execute switch statement for starting the game

cout << "Type '9' to begin. Otherwise, input any other key to exit." << endl << endl;

}

void gamestart() {

//Start game inside the room

cout << setfill('-') << setw(120) << "-" << endl;

cout << "You wake up trapped inside a room, unable to remember a thing." << endl;

cout << "The room appears to be a bedroom, as it has a bed, a small drawer with a lamp, a small window," << endl;

cout << "and a door to what appears to be the exit." << endl;

cout << setfill('-') << setw(120) << "-" << endl;

}

//Begin game

void path1() {

{

//Declare choice variable

unsigned int choice1; //Integer for 1st choice, unsigned to avoid 2 accidental inputs when inputting a negative number

//Prompt player for choice with a for loop.

do {

//Give choices for player

cout << "What would you like to do?" << endl;

cout << "Type '1' to look through the window." << endl;

cout << "Type '2' to attempt to open the door." << endl;

cout << "Type '3' to examine the room." << endl;

cout << endl;

//Assign choice1 for upcoming switch statement

cin >> choice1;

//Code to avoid infinite loop after a character is introduced

cin.clear();

cin.ignore();

//Output for looking through the window

if (choice1 == 1) {

cout << setfill('-') << setw(120) << "-" << endl;

cout << "You look through the window." << endl;

cout << "It is too dark to see anything. It may actually look like it's deliberately dark." << endl;

cout << "You turn back and think for your next choice." << endl;

cout << setfill('-') << setw(120) << "-" << endl;

}//Output for attempting to open the door

else if (choice1 == 2) {

cout << setfill('-') << setw(120) << "-" << endl;

cout << "You attempt to open the door." << endl;

cout << "The door is locked tight. There appears to be a keypad next to it." << endl;

keypad();

cout << "You inputted random numbers, but none of them worked." << endl;

cout << "You take note that it requires a four digit code." << endl;

cout << "You turn back and think for your next choice." << endl;

cout << setfill('-') << setw(120) << "-" << endl;

}//Output for examining the room

else if (choice1 == 3) {

path2();

}//Output for incorrect input

else {

cout << endl;

cout << "Error! Invalid input. Game terminating..." << endl;

cout << endl;

}

} while (choice1 >= 1 && choice1 <= 3);

exit(0);

}

}

//Examine room

void path2() {

//Declare choice variable

int choice2; //Integer for 2nd choice

//Prompt player for choice with a do-while loop.

do {

//Give choices for player

cout << setfill('-') << setw(120) << "-" << endl;

cout << "You examine the room." << endl;

cout << setfill('-') << setw(120) << "-" << endl;

cout << "What would you like to examine?" << endl;

cout << "Type '1' to examine the bed." << endl;

cout << "Type '2' to examine the drawer." << endl;

cout << "Type '3' to examine the lamp." << endl;

cout << "Type '4' to examine the room itself." << endl;

cout << "Otherwise, type '5' to quit investigating the room." << endl;

cout << endl;

//Assign choice2 for upcoming if-else statement

cin >> choice2;

//Code to avoid infinite loop after a character is introduced

cin.clear();

cin.ignore();

//Output for examining the bed

if (choice2 == 1) {

cout << setfill('-') << setw(120) << "-" << endl;

cout << "You examine the bed." << endl;

cout << "It looks like it hasn't been used for a while." << endl;

cout << "There doesn't seem to be anything of interest. You examine other objects." << endl;

}//Output for examining the drawer

else if (choice2 == 2) {

path3();

}//Output for examining the lamp

else if (choice2 == 3) {

cout << setfill('-') << setw(120) << "-" << endl;

cout << "You examine the lamp." << endl;

cout << "It was turned on when you first woke up." << endl;

cout << "Nothing seems to be off. You examine other objects." << endl;

}//Output for examining the room

else if (choice2 == 4) {

cout << setfill('-') << setw(120) << "-" << endl;

cout << "You examine the room itself." << endl;

cout << "The room is rather small and only accommodates for one person." << endl;

cout << "It feels as though it was meant for a crew member of some sort." << endl;

cout << "Nothing seems to catch your eye. You examine other objects." << endl;

}//Output for stopping the search

else if (choice2 == 5) {

cout << setfill('-') << setw(120) << "-" << endl;

cout << "You decide not to investigate the room." << endl;

cout << setfill('-') << setw(120) << "-" << endl;

return path1();

}//Output for incorrect input

else {

cout << endl;

cout << "Error! Invalid input. Game terminating..." << endl;

cout << endl;

}

} while (choice2 >= 1 && choice2 <= 5);

exit(0);

}

//Examine drawer

void path3() {

//Declare choice variable

int choice3; //Integer for 3rd choice

//Examining the drawer

cout << setfill('-') << setw(120) << "-" << endl;

cout << "You examine the drawer." << endl;

cout << "There appears to be a note." << endl;

cout << setfill('-') << setw(120) << "-" << endl;

cout << "Read the note?" << endl;

cout << "Type '1' to read. Otherwise, input any other key to leave it." << endl;

cout << endl;

//Prompt player for choice

cin >> choice3;

//Code to avoid infinite loop after a character is introduced

cin.clear();

cin.ignore();

//Output for reading the note

if (choice3 == 1) {

path4();

}//Output for leaving the note

else {

cout << setfill('-') << setw(120) << "-" << endl;

cout << "You decide not to read the note." << endl;

cout << "With that in mind, you decide to examine other objects." << endl;

return path2();

}

}

//Reading the note

void path4() {

//Declare choice variable

int choice4; //Integer for 4th choice

//Reading the note

cout << setfill('-') << setw(120) << "-" << endl;

cout << "You read the note." << endl;

cout << "The note reads:" << endl;

cout << endl;

cout << "<----" << endl;

cout << "'5812'." << endl;

cout << endl;

cout << "You remember the sequence of numbers just in case." << endl;

cout << setfill('-') << setw(120) << "-" << endl;

cout << "Suddenly, a loud rush of water can be heard from the outside." << endl;

cout << "The rushing water gets louder and louder and suddenly..." << endl;

cout << endl;

cout << "CRASH!" << endl;

cout << endl;

cout << "The water crashes through the small window." << endl;

cout << "The room begins to flood with water." << endl;

cout << "You panic, but you try to stay calm at the same time." << endl;

cout << setfill('-') << setw(120) << "-" << endl;

//Prompt player for choice with a while loop

do {

//Give choices for player

cout << "Seek a way out! What is your next course of action?" << endl;

cout << "Type '1' to close the rushing water." << endl;

cout << "Type '2' to approach the door." << endl;

cout << "Type '3' to do nothing." << endl;

cout << endl;

//Prompt player for choice

cin >> choice4;

//Code to avoid infinite loop after a character is introduced

cin.clear();

cin.ignore();

//Output for plugging the rushing water

if (choice4 == 1) {

cout << setfill('-') << setw(120) << "-" << endl;

cout << "You attempt to close the rushing water." << endl;

cout << "You try to use the bed as a blockade, however the bed is too heavy for you to lift." << endl;

cout << "You try to use your body, however the water pressure is too powerful." << endl;

cout << "The water fills up the room completely." << endl;

cout << "You are completely submerged in the water." << endl;

cout << "You start to lose air and begin drowning." << endl;

cout << "You hear a faint voice." << endl;

cout << "'Don't fight it, avoid it...' said the faint voice." << endl;

cout << "You lose consciousness due to lack of air." << endl;

cout << setfill('-') << setw(120) << "-" << endl;

cout << endl;

cout << "GAME OVER." << endl;

cout << endl;

exit(0);

}//Output for approaching the door

else if (choice4 == 2) {

path5();

}//Output for doing nothing

else if (choice4 == 3) {

cout << setfill('-') << setw(120) << "-" << endl;

cout << "You do nothing. You sit on the bed and wait for death." << endl;

cout << "The water fills up the room completely." << endl;

cout << "You are completely submerged in the water." << endl;

cout << "You start to lose air and begin drowning." << endl;

cout << "You hear a faint voice." << endl;

cout << "'Believe in yourself...' said the faint voice." << endl;

cout << "You lose consciousness due to lack of air." << endl;

cout << setfill('-') << setw(120) << "-" << endl;

cout << endl;

cout << "GAME OVER." << endl;

cout << endl;

exit(0);

} else {

cout << endl;

cout << "Error! Invalid input. Game terminating..." << endl;

cout << endl;

}

} while (choice4 >= 1 && choice4 <= 3);

exit(0);

}

//Code for keypad

void path5() {

//Assign code for 1D array

int code[3];

//Approaching the door

cout << setfill('-') << setw(120) << "-" << endl;

cout << "You approach the door." << endl;

cout << "The door is still locked tight." << endl;

cout << "You see the keypad next to the door." << endl;

keypad();

cout << "You attempt to input a four digit code." << endl;

cout << setfill('-') << setw(120) << "-" << endl;

cout << "What four digit code do you input?" << endl;

cout << endl;

//Prompt player for choice via array

cout << "Enter the first digit." << endl;

cin >> code[0];

cin.clear();

cin.ignore();

cout << "Enter the second digit." << endl;

cin >> code[1];

cin.clear();

cin.ignore();

cout << "Enter the third digit." << endl;

cin >> code[2];

cin.clear();

cin.ignore();

cout << "Enter the last digit." << endl;

cin >> code[3];

cin.clear();

cin.ignore();

//Display array

cout << "The code you have inputted is:" << endl;

cout << code[0] << code[1] << code[2] << code[3] << endl;

//Output for correct code

if (code[0] == 2 && code[1] == 1 && code[2] == 8 && code[3] == 5) {

cout << setfill('-') << setw(120) << "-" << endl;

cout << "ACCEPTED" << endl;

cout << "A click can be heard from the door." << endl;

cout << "The door is now unlocked and you open the door." << endl;

cout << "You escape the room along with the rushing water behind you." << endl;

cout << "You continue to run through the hall and approach some stairs going up." << endl;

cout << "You climb the stairs in attempt to escape the rushing water." << endl;

cout << "You stop on what appears to be the second floor." << endl;

cout << "You check behind you to see if the water is still flowing." << endl;

cout << "The water stops on the brim of the last stair approaching the second floor." << endl;

cout << "You sigh in relief and lay down." << endl;

cout << setfill('-') << setw(120) << "-" << endl << endl;

cout << "YOU FOUND IT!" << endl << endl;

cout << setfill('-') << setw(120) << "-" << endl;

cout << "Congratulations! You've completed the game!" << endl;

cout << "Once again, this was a cut-down version of the game so it's not fully complete." << endl;

cout << "Please check out the full game of 999 by purchasing it for the Nintendo DS or iOS." << endl;

cout << "Thank you for playing this game!" << endl;

exit(0);

}//Output for incorrect code

else {

cout << setfill('-') << setw(120) << "-" << endl;

cout << "DENIED" << endl;

cout << "The water rushes to the keypad and shorts it out." << endl;

cout << "You push the numbers, but no response." << endl;

cout << "The water fills up the room completely." << endl;

cout << "You are completely submerged in the water." << endl;

cout << "You start to lose air and begin drowning." << endl;

cout << "You hear a faint voice." << endl;

cout << "'Enter in reverse order...' said the faint voice." << endl;

cout << "You lose consciousness due to lack of air." << endl;

cout << setfill('-') << setw(120) << "-";

cout << endl << endl;

cout << "GAME OVER." << endl;

exit(0);

}

}

void keypad() {

//Fill array

int matrix[3][3] = {

{1, 2, 3},

{4, 5, 6},

{7, 8, 9}

};

//Produce a 2D array with bubble sorting

for (int x = 0; x < 3; x++) // loop 3 times for three lines

{

for (int y = 0; y < 3; y++) // loop for the three elements on the line

{

cout << matrix[x][y] << " "; // display the current element out of the array

}

cout << endl; // when the inner loop is done, go to a new line

}

}