**ARTIFICIAL INTELLIGENCE DEPARTMENT**

# Total Marks: 7.5

**Obtained Marks:**

**PROJECT NO#2**

FUNDAMENTAL OF PROGRAMMING

(LAB)

**Text-Based Adventure Game**

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**Introduction: -**

In this immersive text-based adventure, you will find yourself in the midst of a mysterious forest, unsure of how you arrived there. Your ultimate objective is to unearth a hidden treasure and successfully make your way out of this enigmatic wilderness. However, be cautious, for lurking within the depths of the forest are dangerous creatures awaiting unsuspecting travelers like yourself.

To navigate this perilous landscape, you will need to make strategic decisions at every turn. As you progress through the game, you will be faced with multiple options, each leading you down a different path. Will you choose to venture north, where a treacherous river awaits? Or will you opt to explore the mysterious cave to the east, braving the unknown dangers within? The choice is yours, and every decision you make will shape the outcome of your adventure.

Remember, the forest holds many secrets. Along your journey, you may stumble upon hidden clues, encounter ancient temples, or catch glimpses of towering mountains that beckon you towards their lofty peaks. Stay vigilant, for the forest's inhabitants may hold the key to unlocking the secrets that lie ahead.

Your fate rests in your hands. Will you emerge victorious, finding the coveted treasure and escaping the clutches of the forest? Or will you succumb to the perils that await within? The answers lie within "The Adventure Game," and only your choices will determine the outcome.

Are you ready to embark on this thrilling and mysterious journey? Step into the unknown, and may fortune favor the brave. Good luck!

**Procedure: -**

Procedure for "Text-Based Adventure Game":

1. Start the program.
2. Display the introduction to the game:

a. Print the welcome message.

b. Describe the player's current situation: waking up in a mysterious forest.

c. State the objective: find the treasure and safely escape the forest.

d. Warn the player about dangerous creatures lurking in the forest.

e. Wish the player good luck.

1. Enter a while loop that continues until the game is exited:
2. Print the available options for the player:
   * Going North
   * Going East
   * Going South
   * Going West
   * Quitting the game
3. Prompt the player to enter their choice (1-5).
4. Handle the player's choice:

a. Use a switch statement to check the chosen option.

b. For option 1, display a message indicating the player goes North and encounters a river.

c. For option 2, display a message indicating the player goes East and stumbles upon a cave.

d. For option 3, display a message indicating the player goes South and sees a towering mountain.

e. For option 4, display a message indicating the player goes West and finds an ancient temple.

f. For option 5, display a farewell message and exit the program.

g. For any other input, display an error message and prompt the player to try again.

1. End the loop.
2. Exit the program.

**Objective: -**

The objective of the text-based adventure game is to provide an interactive and engaging experience for the player. The game aims to immerse the player in a mysterious forest setting and present them with choices and challenges as they navigate through the game world.

The primary objective of the game is for the player to find the hidden treasure within the forest and successfully escape, ultimately completing their adventure. To achieve this objective, the player must carefully consider their choices, overcome obstacles, and strategically explore different paths.

Along the way, the player should exercise caution and be aware of the dangerous creatures lurking in the forest. The objective is to make it out alive, ensuring the player remains alert and attentive to the potential threats and dangers that lie in wait.

The game encourages the player to engage their decision-making skills, problem-solving abilities, and sense of adventure as they progress through the forest and discover new areas. The objective is to provide an entertaining and thrilling experience where the player's choices directly impact the outcome of their adventure.

Ultimately, the objective is to captivate and challenge the player, creating an enjoyable text-based adventure filled with suspense, discovery, and the satisfaction of overcoming obstacles to reach the treasure and emerge victorious.

**Scope of Text-Based Adventure Game: -**

The scope of this program is limited to the basic functionality of presenting options to the player, handling their choices, and displaying corresponding messages. Additional features, game mechanics, and complexity can be added to expand the game and enhance the player's experience.

**Features of Text-Based Adventure Game: -**

Here are some features of text-based adventure game: -

1. *Interactive Gameplay:* The game provides an interactive text-based experience where players can make choices to navigate through the game world.
2. *Introduction:* At the beginning of the game, a captivating introduction is displayed, setting the mood and providing essential information about the game's objective and setting.
3. *Player Options:* The game presents the player with multiple options to choose from, allowing them to decide their next course of action. The options include going North, East, South, or West, as well as quitting the game.
4. *Dynamic Output:* Depending on the player's choice, the game generates dynamic output, providing feedback and descriptions of the player's actions and encounters.
5. *Randomized Elements:* The game incorporates randomized elements to introduce variety and unpredictability, making each playthrough unique.
6. *Quitting the Game:* The game allows players to choose the option to quit at any time, providing a means to exit the game gracefully.
7. *Error Handling:* If the player enters an invalid choice, the game handles the error by displaying an appropriate message and prompts the player to try again.
8. *Looping Gameplay:* The game is designed with a loop that allows for continuous gameplay until the player decides to quit.
9. *Persistence:* The game retains the player's progress and choices as long as the program is running, providing a seamless gaming experience.
10. *Goodbye Message:* When the player decides to quit the game, a farewell message is displayed, providing a proper conclusion to the gaming session.

These features combine to create an engaging text-based adventure game that immerses players in an intriguing storyline and challenges them to make strategic decisions to progress through the game.

**Disadvantages of Text-Based Adventure Game: -**

Disadvantages of the given program for the text-based adventure game:

1. *Lack of Game Progression:* The current program does not include any mechanism for tracking the player's progress or providing a sense of accomplishment. It focuses solely on the player's choices without incorporating elements like levels, quests, or a storyline, which could make the game more engaging and immersive.
2. *Limited Gameplay Options:* The program only offers four directional choices (North, East, South, West) and quitting the game. This simplicity may result in a repetitive and predictable gameplay experience, reducing the overall excitement and variety for the player.
3. *Lack of Interactivity:* The program does not allow for interactions with objects, characters, or the environment. Incorporating puzzles to solve, items to collect, or non-player characters to interact with would enhance the depth and engagement of the game.
4. *Absence of Random Events:* The game does not include any random events or encounters, making each playthrough identical. Introducing unpredictable elements would add replay value and increase the sense of discovery and surprise.
5. *Limited User Feedback:* The program provides minimal feedback to the player, primarily limited to textual descriptions of the chosen direction. Including more descriptive feedback, such as visuals, sounds, or additional narrative details, would enhance the player's immersion and overall experience.
6. *Lack of Error Handling*: The program assumes that the user will always input a valid choice. However, if the user enters an invalid input, such as a character or a number outside the given range, the program simply displays an error message without providing guidance on how to proceed.
7. *Lack of Scalability:* The program is designed as a single-file script, which may make it difficult to extend or modify as the complexity of the game increases. Separating the functionality into distinct modules or using object-oriented programming principles would enhance the program's flexibility and maintainability.
8. *Minimal Game Ending:* The game does not have a defined win condition or alternate endings. Adding different outcomes based on the player's progress, achievements, or choices would provide a more satisfying conclusion to the game.

To create a more comprehensive and engaging text-based adventure game, consider addressing these limitations and expanding the program to include more features, gameplay mechanics, and player interaction.

**Requirements: -**

Requirements for "The Text-Based Adventure Game":

1. The program should be written in C++.
2. The program should provide an introduction to the game, setting the scene for the adventure:

a. Display a welcome message.

b. Describe the player's initial location: waking up in a mysterious forest.

c. Clearly state the objective of the game: finding the treasure and safely escaping the forest.

d. Warn the player about the presence of dangerous creatures in the forest.

e. Wish the player good luck.

1. The program should present the player with a set of options to choose from:

a. Going North

b. Going East

c. Going South

d. Going West

e. Quitting the game

1. The program should handle the player's choice and respond accordingly:

a. If the player chooses to go North, display a message indicating their encounter with a river.

b. If the player chooses to go East, display a message indicating their discovery of a cave.

c. If the player chooses to go South, display a message indicating their sighting of a towering mountain.

d. If the player chooses to go West, display a message indicating their finding of an ancient temple.

e. If the player chooses to quit the game, display a farewell message and terminate the program.

f. If the player enters an invalid choice, display an error message and allow them to try again.

1. The program should loop continuously, allowing the player to make multiple choices until they decide to quit.
2. The program should handle input validation to ensure the player enters a valid choice.
3. The program should provide appropriate spacing and formatting of the text to enhance readability.
4. The program should exit gracefully when the player decides to quit the game.
5. The program should compile and run without errors.

*Note:* These requirements define the expected behavior and functionality of the text-based adventure game program.

**Summary: -**

Summary of "The Text-Based Adventure Game":

"The Adventure Game" is a text-based game where players find themselves waking up in a mysterious forest, tasked with finding a hidden treasure and escaping the forest safely. They are warned about the presence of dangerous creatures lurking in the forest.

The program utilizes functions to print the introduction, display available options, and handle the player's choice. The main loop allows players to make choices continuously until they decide to quit the game.

Players are presented with four directional options: going North, East, South, or West. Each option triggers a specific outcome. Going North leads to an encounter with a river, going East leads to stumbling upon a cave, going South reveals a towering mountain, and going West leads to the discovery of an ancient temple. Choosing option 5 allows players to quit the game.

The program implements a switch statement to handle the player's choice and provides feedback accordingly. If an invalid choice is entered, an error message is displayed, prompting the player to try again.

"The Adventure Game" offers an immersive and interactive experience, allowing players to explore the mysterious forest, face various challenges, and shape the outcome of their adventure based on their decisions. Good luck on your quest to find the treasure and make it out alive!

1. The program includes the necessary header files, such as <iostream> and <string>, for input/output operations and string handling.
2. The program defines three functions:

a. printIntro(): Displays the introduction to the game, including the objective, setting, and a good luck message.

b. printOptions(): Prints the available choices for the player.

c. handleChoice(int choice): Handles the player's input and performs actions based on the chosen option.

1. The main function:

a. Calls the printIntro() function to display the game's introduction.

b. Enters a While loop that continues until the game is exited.

c. Inside the loop, calls the printOptions() function to present the available choices. d. Reads the player's input using cin and stores it in the choice variable.

e. Calls the handleChoice(int choice) function, passing the player's choice as an argument.

f. The handleChoice(int choice) function uses a switch statement to perform actions based on the chosen option.

g. If the player selects option 5, the program displays a goodbye message and exits using the exit(0) function.

h. For any other input, an error message is displayed, and the loop continues.

i. The loop repeats, allowing the player to make new choices until they decide to quit.

1. The program ends when the loop is exited, and the main function returns 0.

**Code: -**

#include <iostream>

#include <string>

using namespace std;

void printIntro() {

cout << "Welcome to the Adventure Game!" << endl;

cout << "You wake up in a mysterious forest." << endl;

cout << "Your goal is to find the treasure and make it out alive." << endl;

cout << "Be careful of dangerous creatures lurking in the forest." << endl;

cout << "Good luck!" << endl;

cout << endl;

}

void printOptions() {

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

cout << "1. Go North" << endl;

cout << "2. Go East" << endl;

cout << "3. Go South" << endl;

cout << "4. Go West" << endl;

cout << "5. Quit the game" << endl;

cout << "Enter your choice (1-5): ";

}

void handleChoice(int choice) {

switch (choice) {

case 1:

cout << "You go North and encounter a river." << endl;

break;

case 2:

cout << "You go East and stumble upon a cave." << endl;

break;

case 3:

cout << "You go South and see a towering mountain." << endl;

break;

case 4:

cout << "You go West and find an ancient temple." << endl;

break;

case 5:

cout << "You decide to quit the game. Goodbye!" << endl;

exit(0);

default:

cout << "Invalid choice. Please try again." << endl;

break;

}

cout << endl;

}

int main() {

printIntro();

while (true) {

printOptions();

int choice;

cin >> choice;

handleChoice(choice);

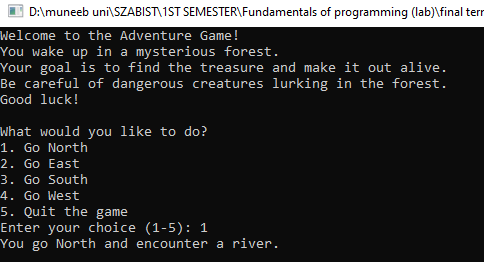
}

return 0;

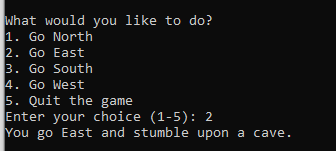
}

**Output: -**

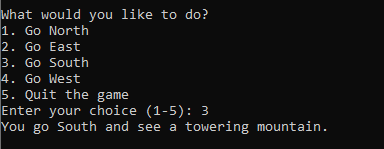
1. **North**

****

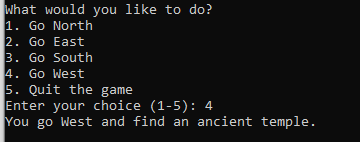
1. **East**

****

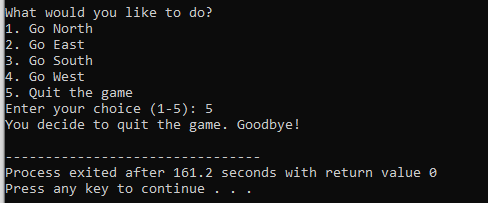
1. **South**

****

1. **West**

****

1. **Quit**

****