Computer Programming and Application Final Project Report

Turn-Based Strategy Role-Playing Game

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Abstract—In the proposal, I enumerated several RPG (Role-Playing Games) and said that I'd like to make one.

After I constructed the rundown framework, I found that I have some dilemma about the motion issues. One is that if a game is lack of motion (or say, animations), it will seem a bit boring; another point is that, I have some difficulties to make motions. Thus, I decided to make a Turn-Based Strategy Role-Playing Game, which allows me to use less motion without losing the visual effect.

I. INTRODUCTION

Development Environment:

- OS: Windows 11
- IDE: Visual Studio 2022
- Language: C++
- Framework: .NET, Windows Form, C++/CLI

The Windows Form, or abbreviated as WinForms, allowed us to design the Graphix user interface, this is the framework which also be used on the midterm, I have tried not to call any exterior libraries or functions to build my project, only focus on what can WinForms do.

My working phase can be separated to several parts: Basic constructing, system designing, first UI designing, battle system designing, construction rearranging, second UI designing and over Implementation.

(a) Basic Constructing:

In this phase, I build up the base of this game, that is, the parameters including the player attack, defense, health, equipment, coin…etc.

The source code of classes I used is on above.

The character class is the player, and the equipment and accessory belong to player, they can upgrade them by spending coins.

The attack point class contains the parameter of action point, including the limitation, the recovering, and the initial point.

The enemy class contains the basic structure of an enemy, the attack point, defense point, heal point and the cooling duration. The boss class inherits the enemy class, then appends some special effects that only the bosses have, such as direct attack, additional turn, change attack or defense point.

The Item class contains the coin and the upgrading props, though at last I did not use the upgrading props since I want to simplify the growing route of this game.

The potion class contains the name, the holding number, and the price of each potion.

(b) System Designing:

In this phase, I designed the functions I need.