Programming Project / C++ – Console Game Management System

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I. Task Description

Student 1 is responsible for managing consoles and games:
- Adding, deleting, modifying consoles (console name, total storage space)
- Adding, deleting, modifying available games (game name, space required, console it is for)
Student 2 is responsible for interacting with their own consoles and games:
- Acquiring consoles
- Installing and uninstalling games and managing storage space

II. Data Structures Used by the Team

The following classes will be used:
- Serializable
- Game: int id, string name, int consoleId, int spaceRequired
- Console: int id, string name, int storageSpace, std::unordered_map<int, Game> games
- User:std::unordered_map<int, Console> availableConsoles, vector<int> ownedConsoleIds, vector<std::pair<int, int>> ownedGameIds

III. File Structure

The following files will be used:

user.txt
A file where available consoles, available games are stored:
<number of consoles> <number of owned consoles> <number of owned games>
<console1 id> <console1 name> <console1 storageSpace> <number of games>
<game1 id> <game1 name> <game1 console id> <game 1 total space>
<game2 id> <game2 name> <game2 console id> <game 2 total space>
………
<console2 id> <console2 name> <console2 storageSpace>
……..

user2.txt
A file where user details (owned consoles, owned games) are stored:
<owned console 1 id> <owned console 2 id> …
<owned game console id> <owned game id> …
……..

IV. Interacting with Executables

Application 1 will offer the following options:

./app_1.exe view_consoles
To view all available consoles

./app_1.exe add_console <id> <name> <storage space>
To add a console

./app_1.exe delete_console <id>
To delete a console

./app_1.exe modify_console <id> <new name> <new storage space>
To modify the name or storage space of a console

./app_1.exe view_games <console id>
To view games available for a certain console

./app_1.exe add_game <console id> <game id> <game name> <required space>
To add a new available game to a console

./app_1.exe delete_game <console id> <game id>
To delete an available game from a console

Application 2 will offer the following options:

./app_2.exe view_consoles
To view the consoles owned by the user

./app_2.exe view_catalog
To view the catalog of the user

./app_2.exe view_consoles
To view the consoles owned by the user

./app_2.exe acquire_console <console id>
To acquire a new console

./app_2.exe install_game <console id> <game id>
To install a new space to a certain console

./app_2.exe uninstall_game <console id> <game id>
To uninstall a game from a certain console

./app_2.exe view_games <console id>
To view installed games for a console and the space taken