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Group 5

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Project Design Briefing

Our group has decided to create a Python side-scroller game designed to teach players simple but essential finance topics. We plan on implementing a few libraries including PyGame, NumPy, Random, and possible Pandas, Matplotlib, and SQLite. PyGame will be the main library as it is the core library for creating 2D games in python and allows us functionality for graphics, sounds, and user input. NumPy will be used for numerical operations and whatever financial calculations and data manipulation we do, Random will be used for random events such as market fluctuations we program in game. Pandas may be utilized depending on how extensively we decide to use financial data as it helps with analysis and manipulation. Matplotlib may be used as well if we decide to implement charting of financial data in the game. SQLite will be necessary if we are able to add game saving functionality. Implementation of Matplotlib and SQLite will allow us to have live charts and data saves which is a goal of ours, but it is also something that will be quite difficult to implement for beginner programmers. As far as artwork is concerned, we plan on making simple sprites for characters and the overall game design will be 16 bit art style. There are plenty of websites and tools that can help us create this art and plenty of games already created we can take inspiration from.

The primary aim of the game is to improve financial literacy among players. By the end of the game players will be able to understand the basics of budgeting and how to manage

expenses, understand various investment strategies including stock trading and understanding risk. Make informed decisions on saving for future goals and investments as well as knowing the impact of credit, debt and taxes has on their financial situation. The target audience includes almost everyone wanting to know finance. It is good for young students as an engaging game will make it much easier to learn with the use of a game. It can also be used in financial literacy classes in higher levels of education to get students engaged.

The gameplay players can expect is a story-based side scrolling game that focuses on the character starting their financial journey to build wealth and make informed decisions. Players will start with a limited budget and the goal of the game is to navigate the world as various financial challenges and opportunities arise. They will need to make strategic decisions, manage budget, invest smartly, set financial goals, and be prepared for unexpected scenarios that might get in their way. They will be able to partake in various investments such as purchasing stocks and other physical investments to learn how to balance risk and rewards. Random events such as market fluctuations, economic downturns, and unexpected expenses will keep the player engaged and questioning every decision they make. Quizzes and other mini games and challenges will periodically assess topics that the player has learned and will be rewarded with in game currency to ensure the concepts being taught are grasped.