

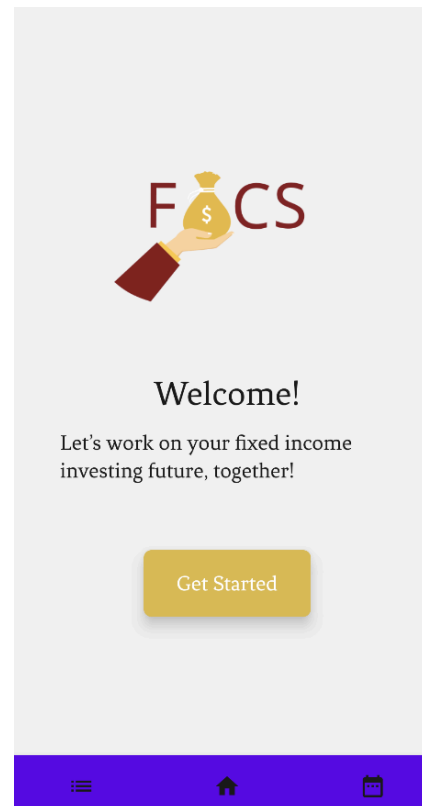
# FICS: Fixed Income for College Students

## Requirements Document

### Capstone 499

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# Glossary

**FICS** - FICS is the name of our Fixed Income interactive app to educate young adults about fixed income investing.

**Fixed Income** - are fixed income securities that are issued by a government or corporation in order to generate funds and are paid back to the investor at a specific maturity date as principal and interest.

**Bond** - In finance, a bond is a type of security under which the issuer owes the holder a debt, and is obliged – depending on the terms – to provide cash flow to the creditor.

**Roth IRA** - A Roth IRA is an individual retirement account under United States law that is generally not taxed upon distribution, provided certain conditions are met.

**Android Studio** - The official integrated development environment for Google's Android operating system, built on JetBrains' IntelliJ IDEA software and designed specifically for Android development.

**Kotlin** - Kotlin is a cross-platform, statically typed, general-purpose high-level programming language with type inference.

# Introduction

FICS is an interactive Android app that functions as an investment simulation platform for the fixed income market. Our target audience consists of young adults with a basic understanding of investing, as well as financial educators looking for engaging resources for their students.

We aim to replicate the world of fixed income investing in order to fill in a large gap in financial education. Users of our app will first walk through key financial terms/concepts that are important for them to know. Once they've read through these key terms, they will be given a brief explanation of how to use our simulation, and then they will be prompted to start their investment simulation. They will have one year to invest \$10,000 in the fixed income market. Our simulation will include four major asset types for investing: treasuries, corporate bonds, municipal bonds, TIPS (treasury inflation protected securities), and securitized (asset-backed) bonds. The vehicles we will provide are mutual funds and EFTs.

In the simulation, we will go step-by-step, introducing each asset type and vehicle so that the user has the chance to understand them all and invest in all of them. The first five screens of their simulation will be more of a tutorial, where we will introduce each asset/vehicle per month. After the introductions to new assets, our users can invest their money freely while keeping in mind economic situations such as default, interest rates, and inflation. Our simulation will also address economic conditions that can affect these investments. For our purposes, we will focus on inflation, interest rates, and the business cycle (expansion, peak, recession, depression).

# Domain Analysis

## Why is it Important for young people to learn about Fixed Income?

The fixed income market is actually a third bigger than the global stock market, which is at around 98 trillion dollars globally. However, it is still an untapped market due to two critical variables.

1. Firstly, there is a pervasive lack of awareness surrounding fixed income. Many young adults have not heard of it, even though it is such a large financial market with tons of potential for income generation.
2. Secondly, even if people have heard of fixed income, there's a notable lack of educational resources tailored to younger individuals. Most available materials cater to older demographics or institutional audiences.

These two factors added together result in young adults losing out on a huge opportunity to build out their investment portfolio for retirement.

## Why FICS?

FICS is an app that will be interactive and engaging enough to attract young adults who have some interest in investing already - learn about fixed income investing.

To understand its importance let's consider its competition:

1. [BuildYourStax.com](https://www.buildyourstax.com/) is a platform that functions as an investment simulator, allowing users to experiment with virtual currency and track their portfolio's performance as they go along. However, this competitor also embodies many of the issues we are looking to address because:
  - a. **It can be overwhelming for beginners:** It offers an extensive array of asset types, including stocks, money markets, and savings accounts, and it has a timer that goes at a very fast pace.
  - b. **It lacks a comprehensive glossary of essential terms** that users can revisit to clarify concepts.

At the end of their journey with our simulation, users will emerge more informed and more knowledgeable about fixed income investing. Our ultimate goal is for our users to leverage this newfound knowledge to incorporate fixed income strategies into their own investment portfolios.

## User Requirements and System Requirements

| A. Glossary  |   |  |
|--|---|--|
| Description: List of terms and definitions necessary to making educated investment decisions |   |  |
| User Requirement   | System Requirement  | Rationale  |
| Users can search the Glossary for key terms.   | <ul style="list-style-type: none"> <li>System searches for that word in the list of key terms stored in the Glossary database to show the user the word the user is looking for.</li> </ul> | It allows the user to save time so that they do not have to go through all of the financial jargon before the word they want to understand.  |
| Users can navigate to the glossary of key terms as needed.                                   | <ul style="list-style-type: none"> <li>System allows users to navigate to the Glossary if they click on the "Glossary" tab on the bottom navigation bar.</li> </ul>                         | It allows them to reinforce and review key financial concepts they have learned from previous simulations and can be a useful guide for them to leverage when they start investing in their own fixed income portfolios. |

| B. Simulation   |                    |           |
|---|--------------------|-----------|
| Description: A simulation will introduce key financial terms and give the user a starting sum of \$10,000 in virtual money that they can choose to invest in different fixed income securities. |                    |           |
| User Requirement  | System Requirement | Rationale |

|  |   |  |
|--|---|--|
| Users can view slides with definitions and examples of key financial terms relevant to the investment opportunities in the simulation before they begin. | <ul style="list-style-type: none"> <li>• Functional Requirement</li> <li>• Based on key words within the simulation scenarios, the system can display key words or concepts in the slides for the user to read through that can help understand the scenarios.</li> </ul>   | Understanding these financial concepts is important for our users to learn how to make smart investment decisions in the simulation.                                     |
| Users can skip the slideshow with key terms before the start of their simulation.  | <ul style="list-style-type: none"> <li>• Non-functional Requirement</li> <li>• The system can take the user to the Task portion of the simulation if the user presses the "Skip" button to save time.</li> </ul>  | Since our users can redo the simulation many times, they will not need to go through the key terms slideshow each time they restart the simulation.                      |
| Users can skip an investment opportunity by selecting yes or no on if they want to invest.   | <ul style="list-style-type: none"> <li>• Functional Requirement</li> <li>• Selection is needed so that the system knows if that investment should be added to the user's records.</li> <li>• If the user selects "No" the system can provide another investment opportunity for the user to invest in.</li> </ul> | If the user does not think that investing in a security will be profitable or they do not have enough funds to invest in the opportunity they should be able to skip it. |
| Users can go back to the Glossary from the bottom navigation bar.  | <ul style="list-style-type: none"> <li>• System can save the user's progress in the simulation even if the user changes the tab by storing the "Q" into the database.</li> <li>• Unless the user has pressed</li> </ul>   | If the user wants to revisit the glossary of terms, they must be able to pause their simulation and save their progress so that they can                                 |

|  |   |  |
|--|---|--|
|  | “Submit” the system will not change the content displayed on the Simulation tab so whenever the user returns to the Simulation they will be where they left off.  | return back to it and continue without restarting.   |
| Users can choose to invest in an asset | <ul style="list-style-type: none"> <li>The system will keep track of the investments the user has made through the “Submit” button. Once the user presses “Submit” the details of the investment opportunity and the amount invested will be saved to the database so that they can be displayed on the Records tab.</li> </ul> | If a user thinks an investment will benefit their portfolio they can invest in the security. |

### C. Record of Past Simulations

**Description:** In order to keep track of the user’s investments, once users have finished their simulation, the results will be saved into their local persistent database, and they can revisit these results.

| User Requirement   | System Requirement  | Rationale   |
|--|---|---|
| Users can view their past simulation results, which includes their net gain/loss at the end of the simulation, specific asset types they invested in, etc. | <ul style="list-style-type: none"> <li>System must update the records with each investment that the user makes.</li> <li>System actively calculates the amount earned from each investment, allowing for the user to see how their investment did.</li> <li>System must actively calculate and</li> </ul> | The user will be able to see their previous plays to understand how their investment decisions have influenced their results. |



|  |                           |  |
|--|---------------------------|--|
|  | update the current assets |  |
|--|---------------------------|--|

# Use Cases

## **Use Case:** View the Glossary Tab

- Actors: Young People Interested in Fixed Income Investing
- Goal: To view/review a list of key financial terms/concepts.
- Related Use case: Search Glossary based on Word
- Steps:
  - Actor: Click on the Glossary button in the Bottom Navigation Bar.
  - System: Open up the Glossary tab where users can view the financial jargon.
  - Actor: View the words the Glossary.

## **Use Case:** View Sample Simulation

- Actors: Young People Interested in Fixed Income Investing
- Goal: To learn how to navigate the simulation
- Related Use case: Use FICS simulation
- Steps:
  - Actor: Open the FICS app
  - System: Show logo and “Lets Get It” Button
  - Actor: Click “Lets Get It” Button
  - Start Simulation

# FICS UI Guide

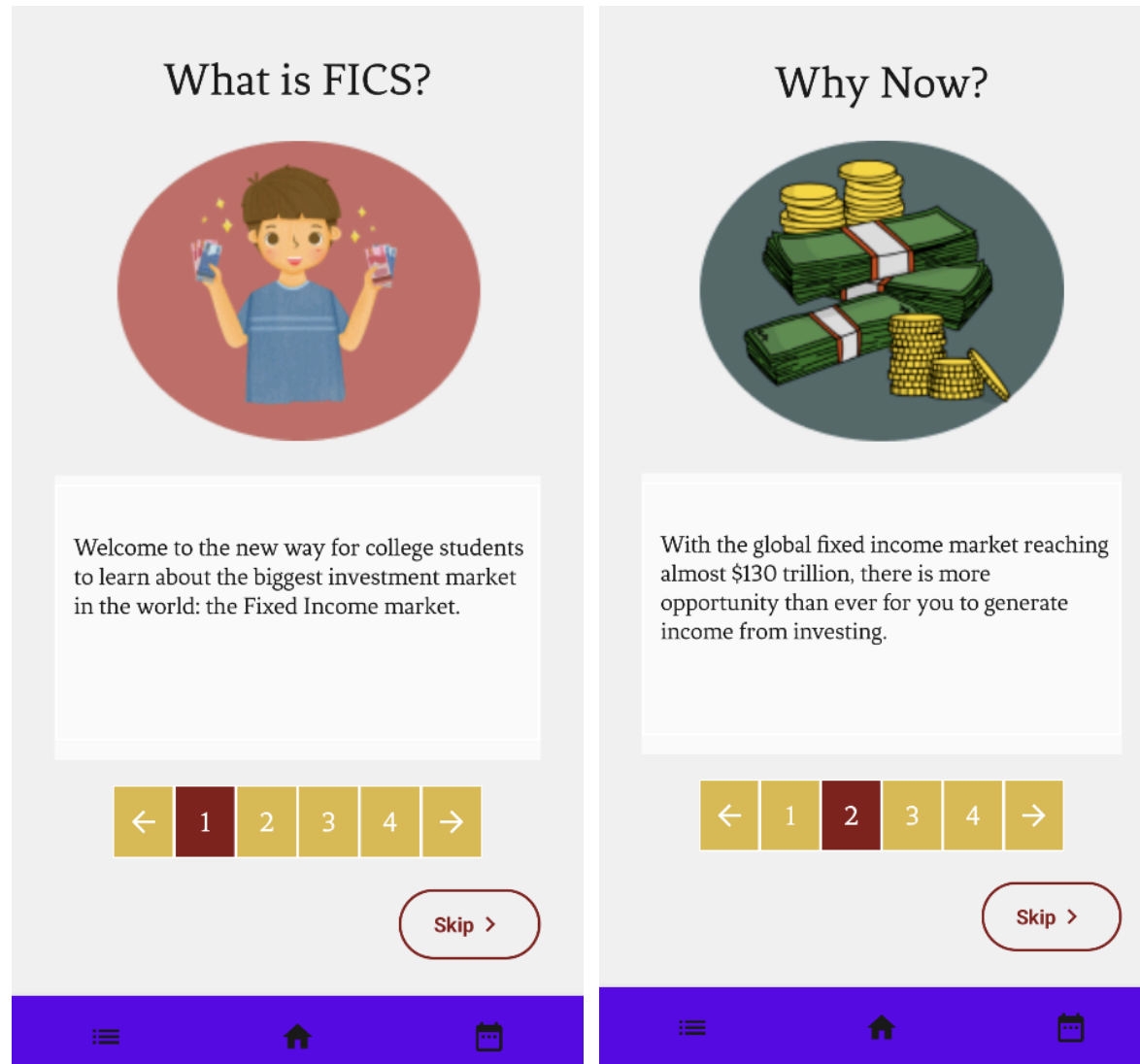
## Welcome Page

The user is greeted with the title page while the app loads up.



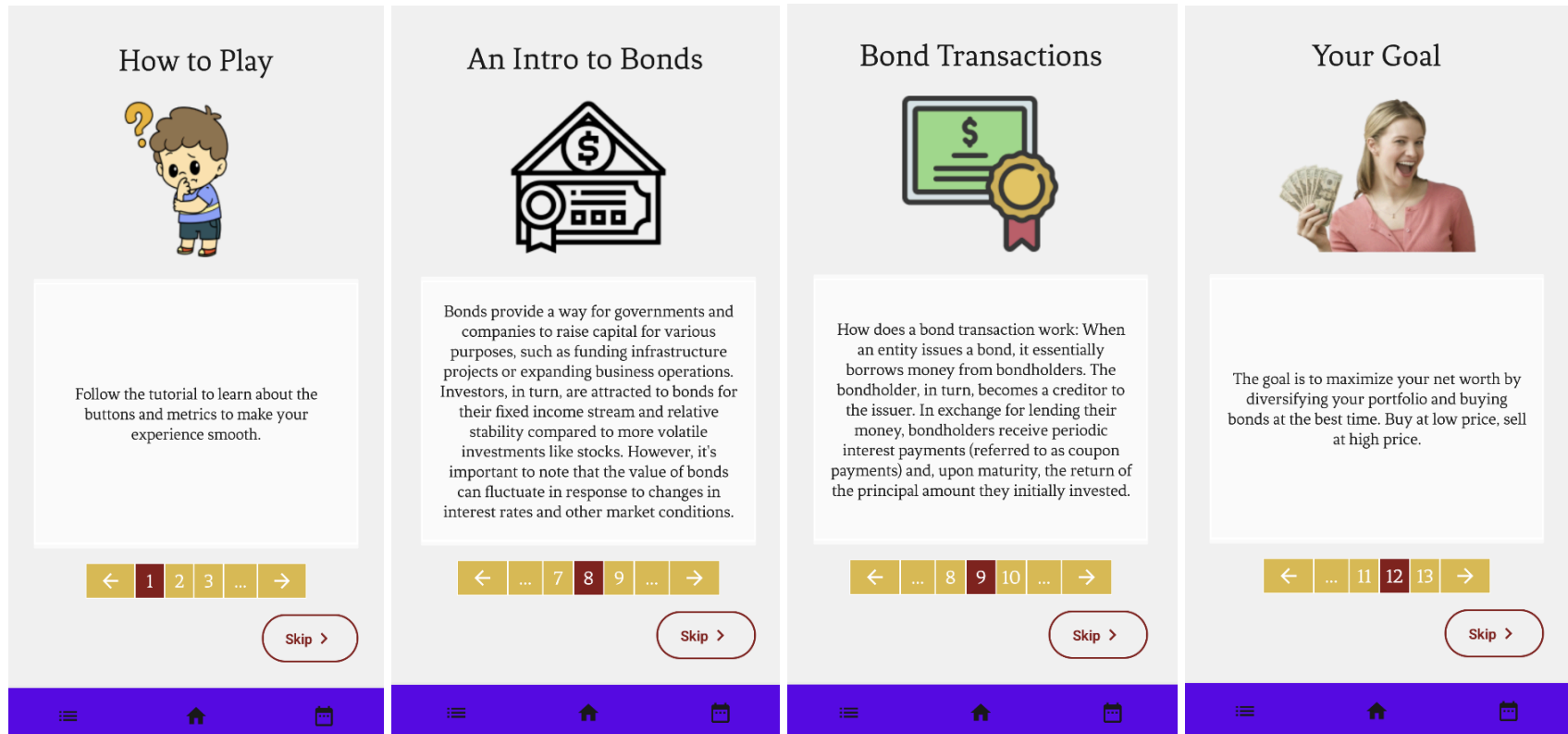
### Why FICS Slideshow

The user is introduced to key terms that will be useful in making smart investment decisions in the provided hypothetical investment scenarios in the simulation. The user can choose to skip this.



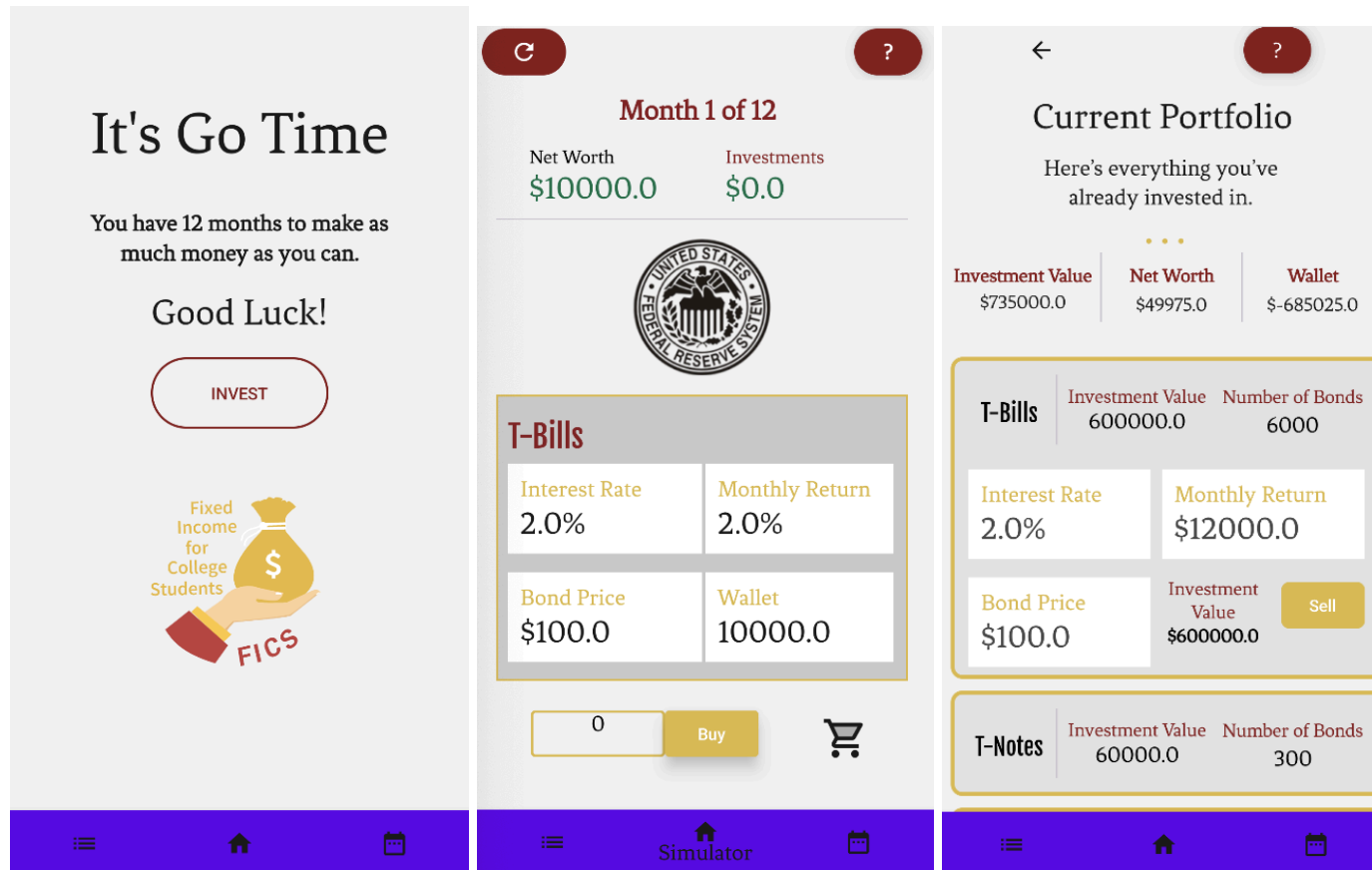
## Tutorial Page

This page informs the user of what they are expected to do during the simulation.



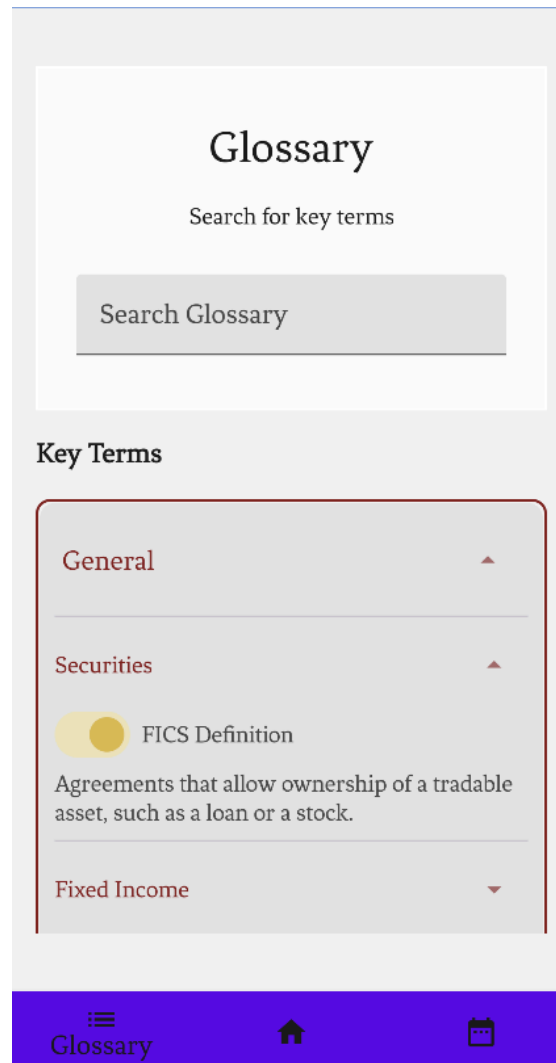
## Simulation

This is where the user can choose to invest in a certain security/asset. The user will see all of the essential information about the specific bond, their wallet, investment value, and monthly returns. They can even reset their progress by pressing the button on the top left, sell a bond by going to the shopping a cart, or ask for help on the top right.



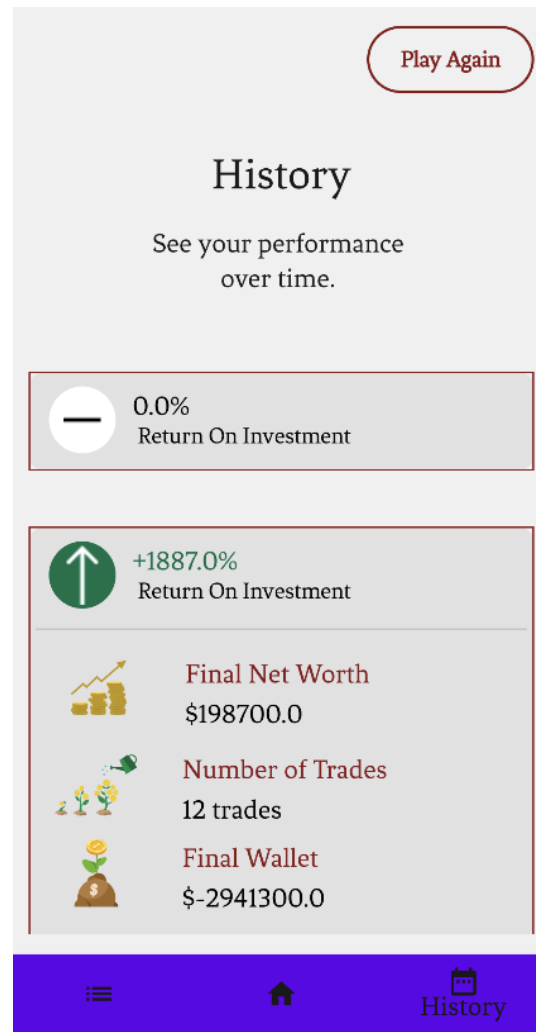
## Glossary

The user can access a comprehensive list of key financial jargon with a clear and easy to understand explanation of each term/concept.



## History

The displays a record of your previous plays with useful information such as your current assets, the date you invest, how much you earned from the investment to see how your investment decisions have influenced your results.





# System Design

## Major Design Considerations

Our first major consideration was to have an easy to use Interface for our app. This is what makes FICS unique to our competitors. FICS aims to provide a beginner friendly investing simulation tailored specifically for the fixed income market, a sector that already demands quite a learning curve. By making the user interface simple and easy to navigate we prevent the user from getting overwhelmed with all of the complicated financial concepts.

Next, speed must be taken into consideration. We want to be able to quickly populate the Records tab with the previous investments that the user is made so that they can view their progress in the Records tab once they are finished with the simulation. The speed should be independent of how many users are using the application or accessing the database.

Lastly, we considered the scalability of the app. As the app grows, we want to add a number of additional features. For instance, we want to include a leaderboard for users to play with friends or to use in classrooms to stimulate competitive finance spirit. For users who want to save this progress across devices, we will have a login function so that they can access it anytime. When the application requires new features or expansions of already existing features, the architecture should be able to handle the implementation.

# Architecture Design

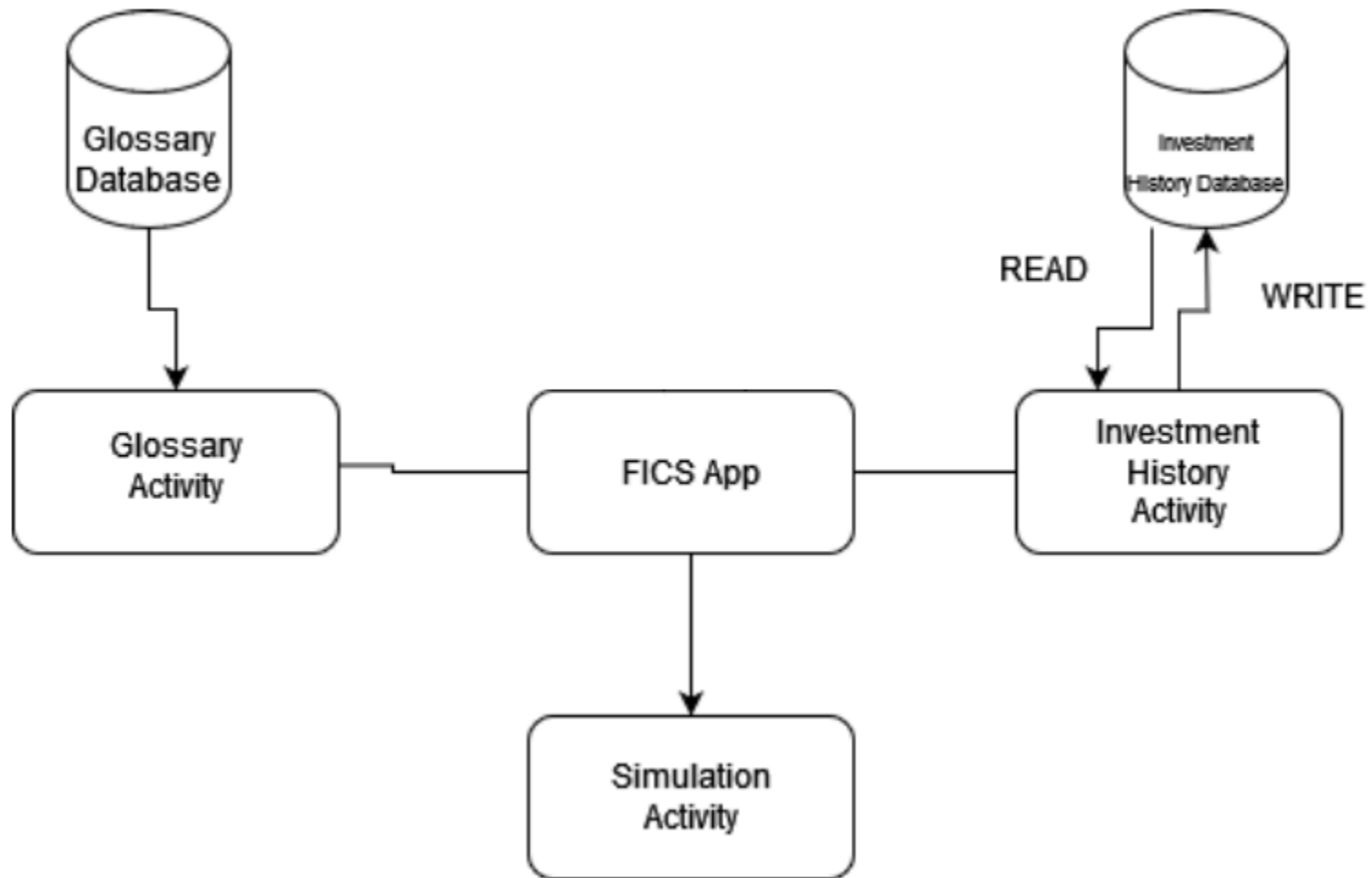
## Event Driven Architecture

From the user features discussed above, we decided that FICS will be designed using Event Driven Architecture. Our app will incorporate three screens (**Activity**) for the user to navigate between using a bottom navigation bar.

First time users will start the simulation from the **Home Screen** and be guided through the key terms of Fixed Income investing as well as how to navigate the simulation and app itself. The key terms will be generated from a glossary database that will be created by us, and will be hosted on the app persistently. The user can restart the simulation at any time and access the **Glossary** via the left icon on bottom Navigation Bar. The user can return to the **Simulation** using the middle icon on the Navigation Bar.

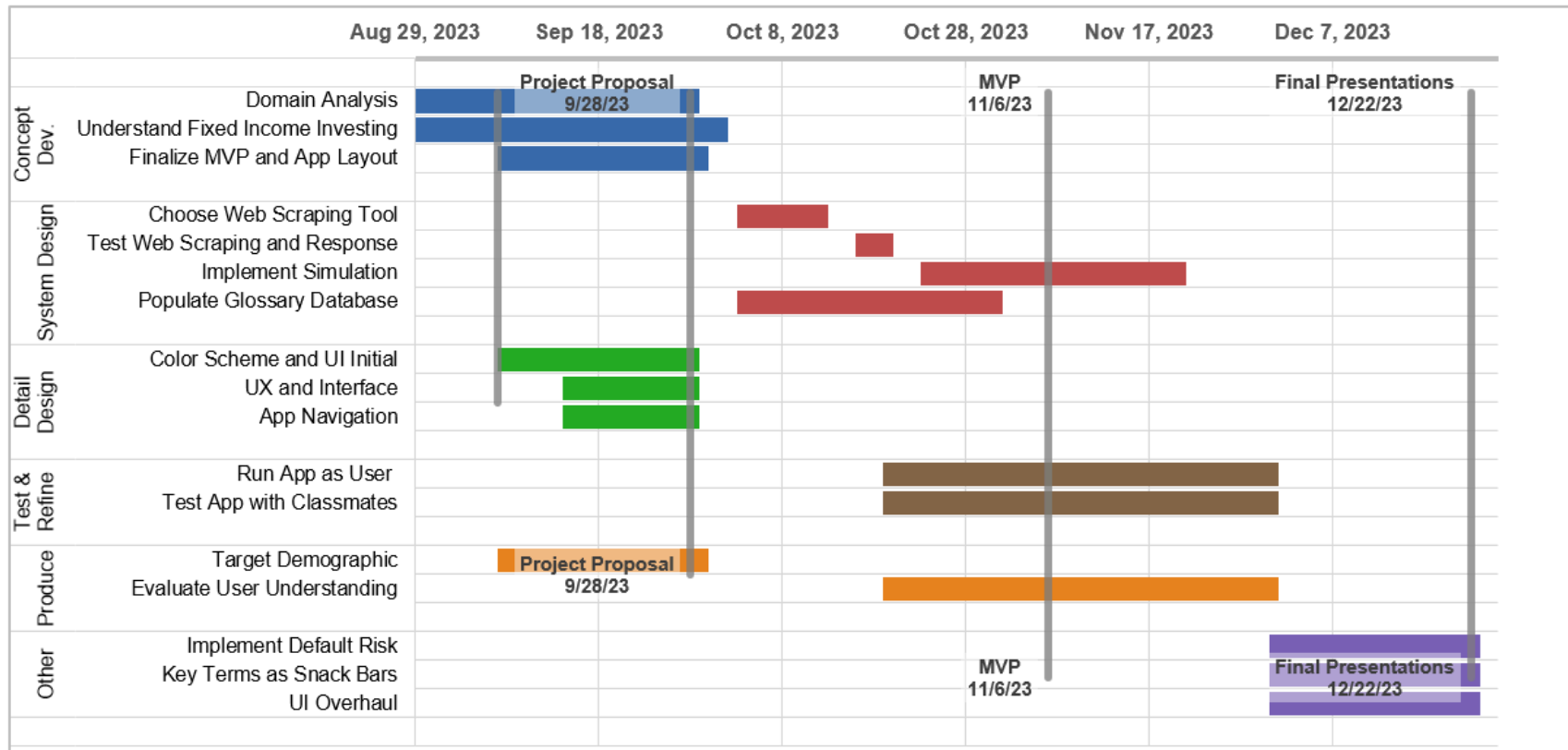
The results of each simulation will be recorded and stored in a separate persistent database implemented locally that users can access on the **History Screen**. Navigation to the **Glossary Activity** and **History Screen** will be Event Drive; with reading from and writing to the **Investment History** database functionality implemented.

### Architecture Layout



# Project Timeline

## PROJECT TIMELINE



| Project Start |                                   | 8/29/23               | columns used to create the chart |        |          |      |     |       |       |        |        |
|---------------|-----------------------------------|-----------------------|----------------------------------|--------|----------|------|-----|-------|-------|--------|--------|
| CATEGORY      | TASK                              | START                 | END                              | COLOR  | Start    | Blue | Red | Green | Brown | Orange | Purple |
| Concept Dev.  | Domain Analysis                   | 8/29/23               | 9/28/23                          | Blue   | 8/29/23  | 31   | 0   | 0     | 0     | 0      | 0      |
|               | Understand Fixed Income Investing | 8/29/23               | 10/1/23                          | Blue   | 8/29/23  | 34   | 0   | 0     | 0     | 0      | 0      |
|               | Finalize MVP and App Layout       | 9/7/23                | 9/29/23                          | Blue   | 9/7/23   | 23   | 0   | 0     | 0     | 0      | 0      |
| System Design | Choose Web Scraping Tool          | 10/3/23               | 10/12/23                         | Red    | 10/3/23  | 0    | 10  | 0     | 0     | 0      | 0      |
|               | Test Web Scraping and Respons     | 10/16/23              | 10/19/23                         | Red    | 10/16/23 | 0    | 4   | 0     | 0     | 0      | 0      |
|               | Implement Simulation              | 10/23/23              | 11/20/23                         | Red    | 10/23/23 | 0    | 29  | 0     | 0     | 0      | 0      |
|               | Populate Glossary Database        | 10/3/23               | 10/31/23                         | Red    | 10/3/23  | 0    | 29  | 0     | 0     | 0      | 0      |
| Detail Design | Color Scheme and UI Initial       | 9/7/23                | 9/28/23                          | Green  | 9/7/23   | 0    | 0   | 22    | 0     | 0      | 0      |
|               | UX and Interface                  | 9/14/23               | 9/28/23                          | Green  | 9/14/23  | 0    | 0   | 15    | 0     | 0      | 0      |
|               | App Navigation                    | 9/14/23               | 9/28/23                          | Green  | 9/14/23  | 0    | 0   | 15    | 0     | 0      | 0      |
| Test & Refine | Run App as User                   | 10/19/23              | 11/30/23                         | Brown  | 10/19/23 | 0    | 0   | 0     | 43    | 0      | 0      |
|               | Test App with Classmates          | 10/19/23              | 11/30/23                         | Brown  | 10/19/23 | 0    | 0   | 0     | 43    | 0      | 0      |
| Produce       | Target Demographic                | 9/7/23                | 9/29/23                          | Orange | 9/7/23   | 0    | 0   | 0     | 0     | 23     | 0      |
|               | Evaluate User Understanding       | 10/19/23              | 11/30/23                         | Orange | 10/19/23 | 0    | 0   | 0     | 0     | 43     | 0      |
| Other         | Implement Default Risk            | 11/30/23              | 12/22/23                         | Purple | 11/30/23 | 0    | 0   | 0     | 0     | 0      | 23     |
|               | Key Terms as Snack Bars           | 11/30/23              | 12/22/23                         | Purple | 11/30/23 | 0    | 0   | 0     | 0     | 0      | 23     |
|               | UI Overhaul                       | 11/30/23              | 12/22/23                         | Purple | 11/30/23 | 0    | 0   | 0     | 0     | 0      | 23     |
| A             |                                   | v rows above this one |                                  |        |          |      |     |       |       |        |        |

## Task Allocation

|             |   |
|-------------|---|
| Anling Chen | For Anling, she has finance knowledge and will be helping the team understand the field in order to make this app as concise as possible. She was responsible for the web scraping using BeautifulSoup4 to find the live interest rates of all assets and vehicles. After the initial UI/UX draft, she created the entire mock UI and user flow using Figma. She also took the lead on multiple administrative tasks such as slide creation, scriptwriting, and editing the requirements document to make it clear and helpful for users. |
| Sowjanya    | Sowjanya has lots of experience in Android Studio and developed several components of the backend, including the search bar, dialogue boxes, help button, default risk, and implementing much of the simulation buttons. She was highly skilled in creating a strong user experience on the backend, including implementing functionality that explains how to play the simulation and accessing the glossary.  |
| Fatima      | Fatima is the mastermind behind the mockups at the first stage of the MVP and led extensively on the glossary page and final UI. She took the lead on implementing the UI overhaul, including taking the backend functionality and integrating it with new buttons layouts, “next” slideshow buttons, creating the logo, implementing the toggle, and adding new colors to get a user refresh.  |
| Muhammad    | Muhammad is talented in the design code, backend functionality, and project management. He was mainly in charge of the web-scraped data implementation, creating the history page for all   |

|  |   |
|--|---|
|  | <p>past investments, managing the Github repository, creating a line graph for the performance flux during the simulation, and implementing the sell button. He spearheaded the app architecture and determined the structure for the database and app framework.</p> |
|--|---|

# Testing Strategy

Once FICS is launched and the final product is pushed out, our testing strategy to see if the app fulfills a user need is as the following:

- Interest rate data should be updated through web scraping and automatically update the app's simulation
- App should be tested for accuracy according to the market conditions by comparing the metrics and ensuring that it is a real time product
- We assign beta testers to try the app. Beta testers should be from low-to-medium knowledge literacy and be in an educational institution. They will tell us if they think the app is helpful, confusing, or frustrating to use.
- We check in with beta testers after a period of time to see if the material has settled in and if playing it a second time is helpful
- Launch app on app store and promote among financial literacy classes, economics classes in high schools, and fixed income investing beginner classes in colleges. Our hope is that those classes will encourage students to play it on its own to try investing for themselves or for the teacher to assign it as a class task, where students will be able to talk and invest with each other at the same time.
- Send out surveys for continual improvement.



## Ethical considerations

Our app has to ethically store user's data pertaining to their devices, ensuring that the app has strong security that prevents hackers from entering through our app from any holes that may exist and attack their devices. Our app currently does not have any cybersecurity prevention measures but we would like to include security later on that prevents ads, the Google Play store, and other applications from entering into the app unwarranted.

In addition, the app addresses problems in the finance/investment sector itself in that it may expose users to a risky way of investing their money. Poor investment decisions may cascade into bankruptcy or loss of capital that may propel users in dire financial situations. Users must use the app responsibly with the consideration that this app uses fake money to simulate investing, but it is not risk-free or restart-able in the real world. They must invest responsibly in order to actually generate a profit. In addition, fixed income investing is mostly a long-term investing strategy, and users must be aware that timing is paramount when putting large sums of money into a market they are not familiar with. Our app only covers very baseline terminology present in the real investing world and it is not meant for a well-rounded, in-depth education to the fixed income market.

## Planning for Version 2.0

In the future, we plan to expand the app to cover a wider range of fixed income securities such as mortgage backed securities and hedge funds, as well as add in new risk assessments necessary to a broad investment portfolio. This includes interest rate risk, which signifies how an economy is performing in the world and in the US in order to make timely decisions. In addition, there are other types of vehicles such as derivative instruments that can be implemented into the simulation as a “next step” addition after all essential terms have been listed and learned by the user.

We also have high aspirations for the login function, where users will be able to track their progress for the simulation across devices in different locations, or from the Android app to a web app. We plan to expand to iOS to cover a bigger usage base, especially young people, who are proven to majority prefer to use Apple devices.

We want to animate as much as we can as well to make the app more interactive and pleasing to play. This includes having dancing coins, dollar signs flash when they collect a profit, an animated logo spark when the user opens the app, and more.

# Appendix

## User Interviews

**Interviewer: Sowjanya Sritharasarma Interviewee: Sowjanya's Dad**

### Summary:

This interviewee was chosen because he has experience teaching financial concepts to young adults. He satisfies our target audience of educators looking for engaging resources for their students. The interviewee has personal investment experience and is familiar with financial concepts, including mutual funds, retirement funds, and the rule of 72, with a preference for medium-risk, traditional investments like mutual funds. While less acquainted with fixed income, he views it as a specific return based on interest rates. The primary challenge he highlighted in personal investing is the lack of initial funds to invest with, especially for low-income individuals. He stressed the scarcity of educational resources on personal investing and financial literacy, particularly for immigrants and South Asian communities, whose first language is not English. His teaching approach advocates visual aids, personalized instruction, and emphasizing the long-term nature of investments. He values accessible resources and has found investing simulators helpful in understanding investment concepts, despite their lack of complete accuracy. Lastly, he emphasizes thorough understanding through study and experience, underscoring the importance of early financial education in high school, covering topics like retirement funds and stocks.

### Script:

- What do you know about investing? Do you invest yourself?
  - He invests. He knows rule of 72, mutual funds, IRA
  - Medium risk, traditional investments – mutual fund,
  - Familiar with mutual funds
  - Assets familiar with – common stocks, money market funds, bonds
- What do you know about fixed income?

- You receive a specific rate of return depending on interest rate. Believes it to be a money market fund.
- Banks gives fixed interest rate but they're too low, so no possibility to grow
- What do you think is the hardest part about personal investing?
  - No money to invest → low income means no opportunity to save money
  - In order to invest you should have extra money, which people don't have □ no means to invest
  - Hardest part about learning
    - People learn by experience so they lose money while learning
    - No one is there to teach them before they do an investment
    - Nowhere to learn, not a lot of resources to teach them about personal finance, specifically for South Asian
    - South Asians – no prior knowledge, no spare money, no way to get information, they believe in hard work only – you need to teach them, not just give them a book
- How would you teach about fixed income to someone who has no knowledge of it?
  - Showing them tables, graphs of investment growth → visual learning
  - Person to person teaching – you can't apply one system for everybody
  - Need to make them understand that investments are long-term – make them understand long-term vs short term, risk, etc.
- What more information/resources do you wish was available?
  - How money works
  - Rule of 72
  - Visual displays → shows you growth, easier to understand when we can visualize
  - Personal finance, self help books → introduce stories, new mindsets, ways of thinking he hasn't encountered before (ex. South Asian mindset of working hard instead of working smart)
- Have you used an investing simulator before?
  - Yes, gives you an idea of what would happen when you invest
  - Not super accurate but gives you a better idea and helps you understand concepts better
- What tools/features do you think would be helpful to your own portfolio management?
  - Comparisons from MorningStar Access → you can see company's standard growth, can help you understand what's going on in the money market
  - Comparisons of company's stock market growth, stuff like that I guess, etc.
- What is the best way for YOU to learn complicated jargon/finance terminology?

- You have to understand the concepts thoroughly → you have to study thoroughly or else you will not remember it
- Learn by experience, constant exposure
- Last comments
  - Money market info should be taught in at least high school
  - We should learn about these finance things early on in high school (Roth IRA, stocks, etc.)

**Interviewer: Fatima Javid Interviewee: Christiane Campbell**

**Summary:**

This interviewee was chosen because she is majoring in Economics and wants to start investing in fixed income but would love to do more research before she begins. She has an interest in investing but does not currently invest. She likes to keep up with investment vocabulary and news, and is aware of the complexities of fixed income. However, she finds fixed income investing challenging due to its over-the-counter nature for trading bonds, as opposed to the electronic platforms commonly used for equities like stocks. Additionally, she believes that conducting research and gaining enough confidence to invest can be difficult. She also relies on financial dictionaries, the Wall Street Journal, and apps like Lia to learn complex financial terminology. When teaching someone with no knowledge of fixed income, they would start with the basics, explaining concepts like bond prices and their inverse relationship with yield and then would also cover attribution as a difficult concept and provide insights into measuring performance against a benchmark in fixed income trading.

- What do you know about investing? Do you invest yourself?
  - She does not invest at all but is interested in doing so.
  - She learned about the instruments (bonds, stocks) and keeps up to date with the vocabulary and news so she knows about investing.
- What do you know about fixed income?
  - FI, bonds, debt - automatically think debt. FI has a large part to do with debt. That is the basic level.

- Bonds are also Over the counter [you can't get bonds as readily as you would get a stock]. You have to know a person and you can't just go on an electronic platform and buy a bond easily
- Harder to keep track of and difficult to regulate. The exchange of bonds can't be as carefully monitored.
- FI is a way countries massively benefit and hurt themselves.
- Sometime a country will head their currency against another currency
  - A country may have a weak currency and pair it with the US dollar - makes their currency stronger but the country might not be able to pay it back if they have it in a stronger currency.
  - You also have the same strength in your currency and your debt is more expensive, the purchasing power is higher.
  - If you get in a sticky situation it is harder to pay off debt.
    - EX: Argentina & Zimbabwe has done it
- What do you think is the hardest part about personal investing?
  - Fixed Income investing is difficult to get into because it's over the counter trading when trading bonds but with equities you can use an electronic broker like Robinhood to buy and sell stocks.
  - Also she thinks getting the research and enough to be comfortable investing is difficult.
- What more information/resources do you wish was available?
  - She thinks the information is available, its just harder to find, she wishes that there was more transparency with the fixed income markets and it was more readily available.
- Have you used an investing simulator before?
  - On Investopedia, there is an investing simulator that she wants to start using.
  - Used the PORT function on the Bloomberg terminal when she interned there.
- What tools/features do you think would be helpful to your own portfolio management?
  - The PORT function on the Bloomberg terminal and Investopedia because of its useful knowledge and simulator. Also she know people who invest, so her connections can be useful.
- What is the best way for YOU to learn complicated jargon/finance terminology?
  - She uses a financial dictionary on her iphone that includes terminology

- Another primary way she familiarized herself was the WSJ Journal - really useful in keeping up-to-date in news. You can also look up the colloquial slang (street terms) that the WSJ uses. It has both serious/slang terms.
  - But it has a lot of vocab you don't know, you can directly look that up and overtime you develop this wider understanding of finance
- Hunter has an app called Lia - that informs you of different financial concepts. Discovered terms like equity/debt financing.
- How would you teach about fixed income to someone who has no knowledge of it?
  - I would also go over the basics because bond prices such as the higher the bond price, the lower the yield - the inverse relationship is imperative to understand to engage in Fixed income trading.
  - I would start with Attribution, which is to measure performance against a benchmark because i consider that to be a difficult concept.

**Interviewer: Anling Chen Interviewee: Jane Wang (coworker from finance internship, familiar with fixed-income products)**

### **Summary:**

In the interview with Jane, she mentioned that she doesn't personally invest, but college students typically invest in stocks, favoring riskier investments due to their flexibility at a young age. She knows that fixed income involves bonds that provide coupons and set returns over time. Jane finds personal investing challenging because of indecision and uncertainty about where to invest, with fixed income being less liquid. Some educational resources she wishes were available are a summary page on fixed income and understanding the reasons for choosing it over equities. Jane has used an investing simulator, BuildYourStax.com, but found it vague and prefers more context, especially regarding the impact of geopolitical factors. She believes learning involves understanding the relationships between economic trends and investments and appreciates analogies, examples, and visual aids in teaching.

### **Script:**

- What do you know about investing? Do you invest yourself?
  - Does not invest herself
  - College students invest in Tesla.
  - When you are young, you have more flexibility:
    - Should invest in riskier investments.
    - Stocks are favored by most college students over Fixed Income (FI) or Real Estate (RE).
- What do you know about fixed income?
  - Bonds.
  - Bonds provide coupons.
  - They have to return a set amount to you during periods of time.
- What is the hardest part about personal investing?
  - She tends to be indecisive.
  - Struggles with determining where to invest.
  - Notes that fixed income is less liquid.
  - Finds it difficult to predict bond values.
  - Mentions Apple's stock app for tracking stock performance.
- What more information/resources do you wish was available?
  - A summary page of fixed income.
  - A better understanding of why one would invest in fixed income over equities.
  - Information on better liquidity and understanding coupon payments.
- Have you used an investing simulator before?
  - BuildYourStax.com
    - Found it too vague, obscure, and lacking context.
    - Liked it for being a cute game.
    - Wants to see how the geopolitical climate affects the market.
- Terms to learn
  - Relationships between economic trends and investments
  - Both text and simulator shown
- Tools/features



- Investing is complicated and finds the final transaction button intimidating.
- She thinks some investing platforms are too gamelike and unrealistic.
- She mentions Robinhood transactions and the presence of a waiver.
- Learning hardest things
  - Need to take notes.
  - Importance of practice.
  - Have to do the homework.
- How do you teach
  - With analogies, examples
  - Pictures, visualizations are good

**Interviewer: Muhammad Tanveer Interviewee: Hannan Abid (Brother who recently got a SWE Job)**

**Summary:**

Hannan mentioned that he knows about investing but has not has the opportunity to do so yet. He believes that the hardest part of personal investing is identifying safe companies to invest in and understanding investment terminology. He wishes for more accessible information on stocks, bonds, investment strategies, and beginner-friendly investing guidance. He has never used an investing simulator and would find tools/features helpful that provide information on stable companies to invest in and tax-saving strategies. He prefers learning complex finance terminology through a reference guide and practical examples. To teach someone about fixed income with no prior knowledge, he suggests starting with savings accounts, explaining stocks and bonds, and discussing the stability of different stocks.

- What do you know about investing? Do you invest yourself?
  - He knows a little about a 401K but has not started investing in stocks.
- What do you know about fixed income?
  - Nothing.

- What do you think is the hardest part about personal investing?
  - Knowing which companies are safe to invest with and the terminology.
- What more information/resources do you wish was available?
  - Information on stocks, bonds, investment strategies, and how a beginner could start investing safely.
- Have you used an investing simulator before?
  - Never for investing.
- What tools/features do you think would be helpful to your own portfolio management?
  - Access to information on which companies are stable and safe to invest with, and how to save on taxes from the wealth generation.
- What is the best way for YOU to learn complicated jargon/finance terminology?
  - Having a reference guide for all the complex terminology but also being able to see it in action.
- How would you teach about fixed income to someone who has no knowledge of it?
  - Start with saving's accounts, what a stock is, what bonds are, why are some stocks more stable than others.