An-Najah National University

Faculty of Engineering & Information Technology

Computer Engineering Department

Graduation Project 1

Go Coins

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Chapter 1: Introduction

- **Statement of problem**
  With the great development that the world is witnessing in all fields and the digital and financial expansion, it is not common to use old paper patterns to manage financial income and its outputs, so there must be a technological application that helps merchants and people to organize their financial transactions and remind them of the dates of their due payments.

- **Objective and scope of the work**
  Go Coins is a mobile application that allows you to organize your financial transactions and enter the upcoming dates that you have financial dues or financial payments to send a notification in order to remember this and ensure that financial rights are not forgotten or lost.

  You can initially create a new account in the application and enter your basic information in order to have a personal page for you, and once you are logged in, you can take advantage of all the advantages of the application, which are shown as follows:
  You can enter your monthly salary or your income in general (you can enter annual, monthly, or daily income)
  In each money payment process, you can record this process on the application so that you can enter the amount that you spent, followed by the type of spending process (in any field).
  Hence, the application automatically calculates your currently available balance, by subtracting expenses from income.
  You can monitor your balance continuously and this allows you to know where your salary goes in detail through a graph that shows you the percentage on all your spending types (food, medicine, transportation, clothes, etc.)

  The importance of the application is also possible in that it sends you repeated warnings in the event that your expenses are very large compared to your income, for example, if you spend 85% of your salary in the first 4 days of the month, then this is a dangerous situation, which makes the application send you a warning asking you to economize on your expenses in general so that You get to complete the month with the rest of your income.

  Also, you can enter all your financial obligations to the application so that it sends you a notification that you must track and pay or collect these obligations.
  For example, if you bought a car with monthly payments for a certain amount - the application sends you notifications at the beginning of each month reminding you of these payments and this is necessary for a better management of the material income.

- **Significance or importance of your work**
  This application will be available to all users for free, relying on the techniques and logics of this application and feeling the importance of its presence to manage financial transactions, one is very attached to it and finds it very difficult to stay away from it, especially since designed with modern technologies, high speed, and an excellent server. It is also great UI/UX.

  The importance of the application lies in the fact that it is a qualitative leap simultaneous with the digital and technological development that the world is witnessing in the modern era, as you can organize all your physical transactions in an automated manner away from the paper system that was previously adopted

  It also ensures that you always remember the financial dues so that it always alerts you that it is necessary to reap that financial on the date set for its entitlement.

Chapter 2: Constraints and Earlier course work

Constraints

- Having to learn new technologies, languages and frameworks.
- Lack of time due to the huge size of the project.
- The process of creating a mobile application with a configured database linked by backend methodology like Node JS.

In addition to all of what was mentioned, this was the first time that we were required to do a large, complete project from scratch in order to present it well, and we did not have previous experience in managing projects of this size.

In addition to all of what was mentioned, this was the first time that required us to do a huge project complete from scratch to deliver well, and we did not have previous experience in managing projects of this size.

Time was not always on our side, especially with the academic pressures that compelled us to other subjects with their projects and tests. This was a real challenge for us to organize time in working on the project and learning new things at the same time.

Earlier course work

We learned a lot of new technologies, frameworks, and languages to move our project forward. In fact, the strong background absorbed in some of the previous courses helped us to understand many concepts even though we had to learn new things. We also achieved a very important benefit through our practical training and work on real projects with large companies with a wide specialization in the field, but this alone was never enough. Courses that had a good impact and helped us in our work:

- **Database.**
  This course is considered an open window for the world of programming design, we've done our first real project, we learnt about databases and applied the principles and knowledge taken in the former object oriented Programming course.
- **Mobile Programming.**
  It gave us the primary concepts of web programming by learning HTML, CSS and JavaScript. That was our starting point to learn and understand new frameworks and libraries that built on JavaScript like React Native.
- **Backend Programming**
  It was not easy to enter the field of backend, especially since we came from a training environment for the frontend, but it was nothing, and with the continuous pursuit, we were able to develop ourselves very well in the field of backend and we learned excellent and highly demanded language and relied on JavaScript, which is Node JS

Chapter 3: Literature Review

There are many mobile applications that may help people in managing and organizing their lives, especially financial matters.

We have done a lot of research in order to identify the apps that offer like our services and our existence that there are a limited number of apps that are specialized in helping people manage their money, but all of these apps are limited apps and they don't have big advantages and they are also not the most suitable as UIUX

It is very important that the application has clear pages to use in order to facilitate the handling of the application and to ensure the best possible user experience.

Our application was special because it contains an important number of things that facilitate its use, the most important of which are, for example

An internal calculator in the application that facilitates the process of entering information in imports or exports, especially when we are talking about large numbers.

We have also ensured the privacy of each user through a special account through which he can complete all operations through his mobile phone, whether recording imports or exports.

All the features that your application contains are what makes you stand out in the market, especially with the wide spread of mobile applications with different functions.

Taking care of the application is no less important than its function.

Chapter 4: Methodology

Backend:

Now we will talk about the backend development process which is the backbone of our application that organize business life

When we had started, we came across many questions and had many discussions

About which web framework to use? Also, what are the best practices in writing a piece of code?

Framework:

The decision on which web framework to use depends on the following needs:

1- As we in Go Coins support all people to start organizing financial transactions their life.

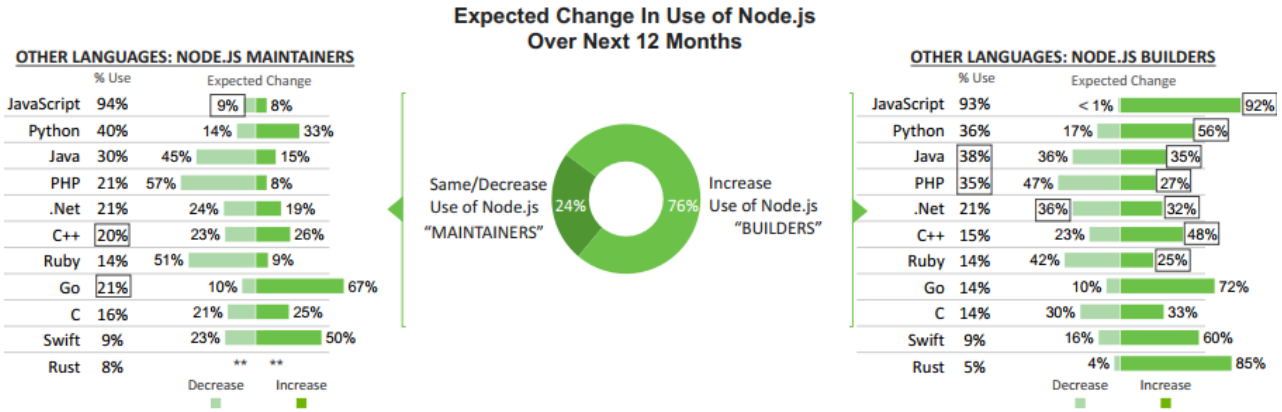
2- We also amid to make people life more easier and to stay tend with all their obligations

3- This is our first time to deal with mobile applications frameworks so we intended to use one which provides much more details about the backend and the whole process.

4- As Go Coins is intended to be an important and indispensable application and we started with this passion we looked for a web framework that is suitable for high performance and scalable systems.

After deep research and a lot of comparisons we decided to use Node JS framework.

Luckily, it provides all the above needs and here is some statistics about Node JS in below Figure.



Frontend:

We looked to the future and tried to identify the languages that open up quickly to the world and we found that there are two very important languages and they have a brilliant future that definitely depends on them

The conflict here is between two languages, React native & Flutter.

Features of each language

REACT NATIVE

1. React Native is Community-driven.
2. Maximum code reuse & cost saving.
3. Live reload.
4. Strong performance for mobile environment.
5. Modular and intuitive architecture similar to React

FLUTTER

1. Same UI and business logic in all platforms
2. Reduced code development time
3. Increased time-to-market speed
4. Similar to native app performance
5. Own rendering engine

After diving into many necks and searching for the advantages and disadvantages of each language, we found in React Native a better way to launch our work.

This was the first time for us to start from scratch towards the completion of a complete integrated project so that it is a young application that benefits users with all the benefits and we ensure that it is an application with an understandable function that can bridge the gap in the electronic applications market and be a competitive application for all applications that may provide similar services.

We came from a background close to React - for programming websites - and this was an important reason for moving towards React nugget and for the ease of learning the language in a short period of time we had it

We immediately started learning this language through the online courses, and little by little we were able to write a simple code in this completely new language for us.

We faced many difficulties, many difficult problems and deaths with patience and continuous learning, little by little we mastered the language and were able to design all the frontends in this application using React Native.

Chapter 5: Project Interface

From the first moment, the goal was to be distinguished in the front-end interfaces to ensure the addition of the aesthetic aspect of the application and also to make it easier for users to use, and all this in order to be a purposeful application and distinguished from other applications.

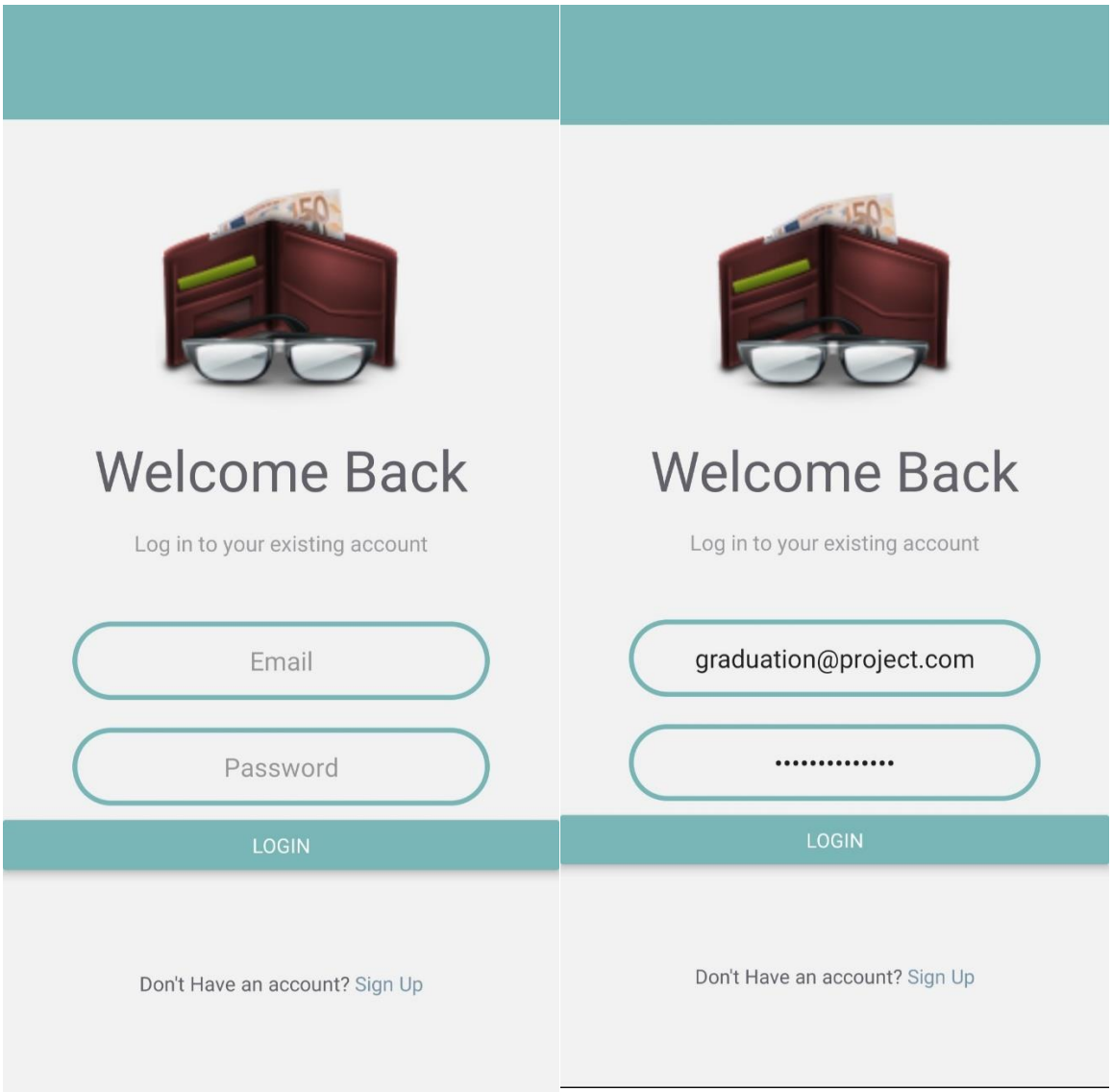
We worked hard in what was required, and excellence was our ally. The following is a complete presentation of the front-facing interfaces that we designed, with a simplified explanation of the service provided by the interface.

Welcome You In Go Coins Application.

Here our fist screen that welcoming you once you enter the applications, you can easily login to the app with your email and password, if it is the first time for you at Go Coins!
You can immediately sign up and create your profile, Welcome you! ☺

We have made sure that each user has a special account and that we do not rely only on mobile phone storage, for the ease of saving user data in the database for reference at any time.

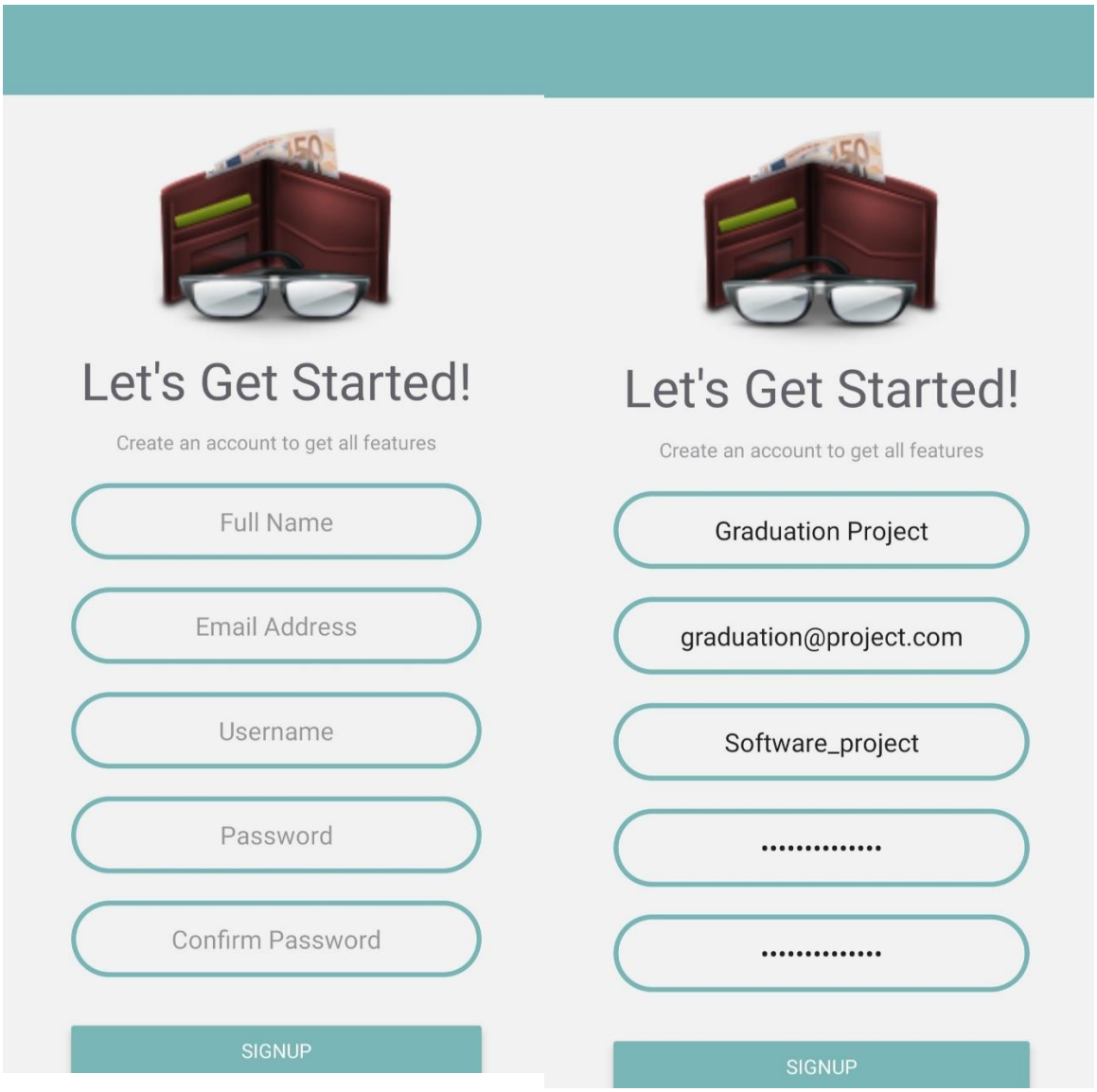
And also another very important case, which is in the event of any malfunction of the user's device and it contains important information, then he is simply able to return to his information through his own e-mail



Let's Get Started!

If it is first time for you in Go Coins, we are welcoming you to be part of our community, Easily, you can register at once, all we need is your full name and your email address the a unique user name for you, type your password and to be sure that you are entering a strong one with at least 8 digits.

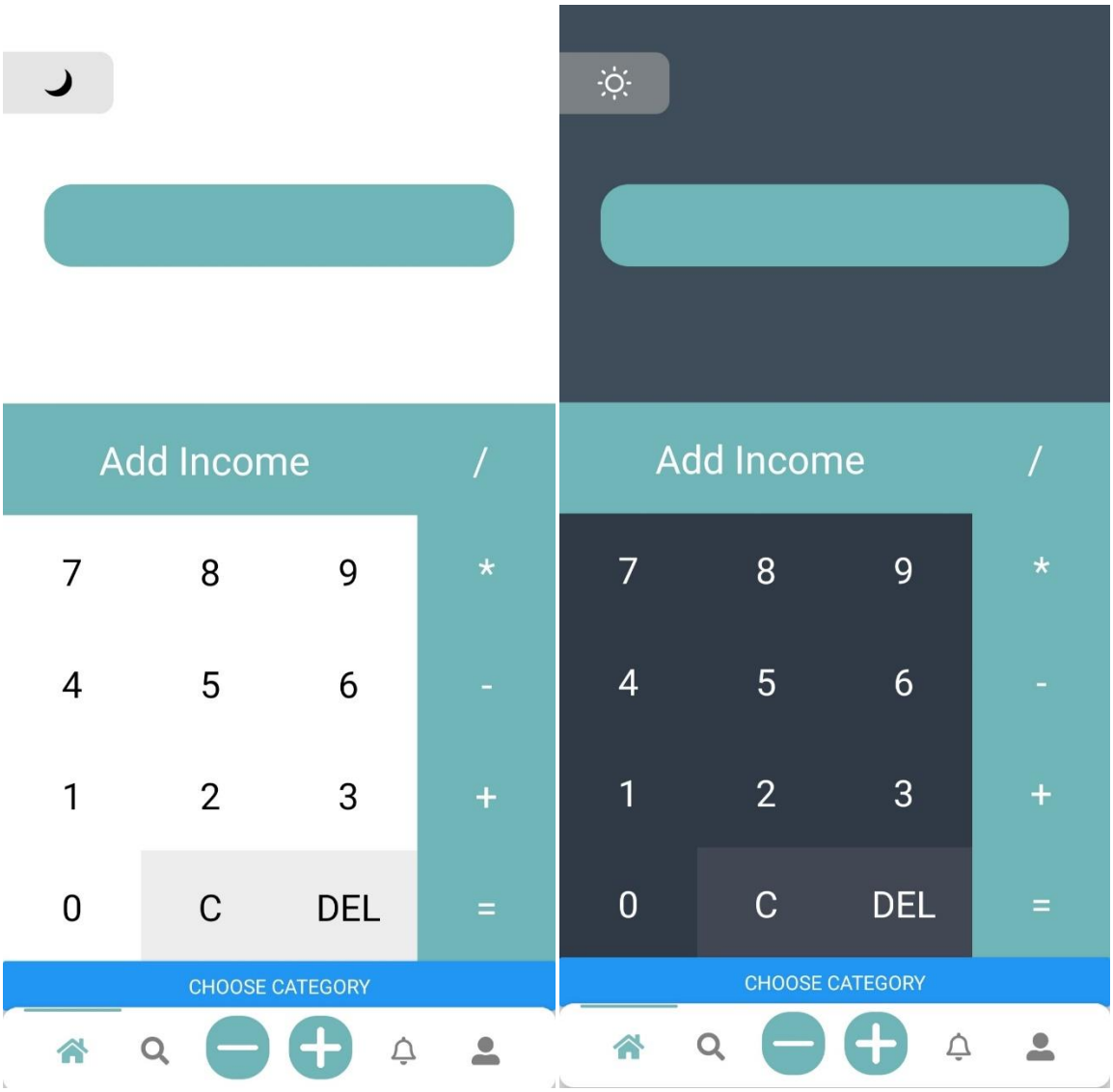
All this information is very important to our database to be able to register and have an account.



Operations Input Screen!

The basic idea screen for our applications is to have simple clever screen to entire your transactions.

- Income such like salary or deposited
- Expense or outcome which is the amount you are paid to buy something or to have a service.



Features of the Screen!

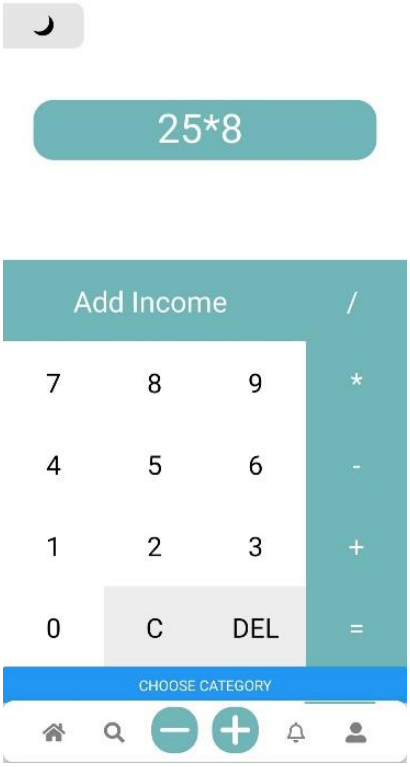
The basic idea screen for our applications is to have simple clever screen to entire your transactions.

- Income such like salary or deposited
- Expense or outcome which is the amount you are paid to buy something or to have a service.

The strong and surprising in this interface is that you can enter all the arithmetic operations simply without the need to exit the application and use an additional calculator. A class of the same product and it needs a process of inserting pieces, so you can include the use of the multiplication process, for example, if you buy, for example, a specific product with a certain number and price, you can use the calculator and so on in complex operations**.**

Dark Mode

The recent addition is actually the Dark Mode feature. Some users have become accustomed to dark colors as a background for them while reading or even using applications and browsers.
Therefore, we thought of adding the dark mode in order to make it easier for people and work to comfort them by providing modes that help them adapt better in use.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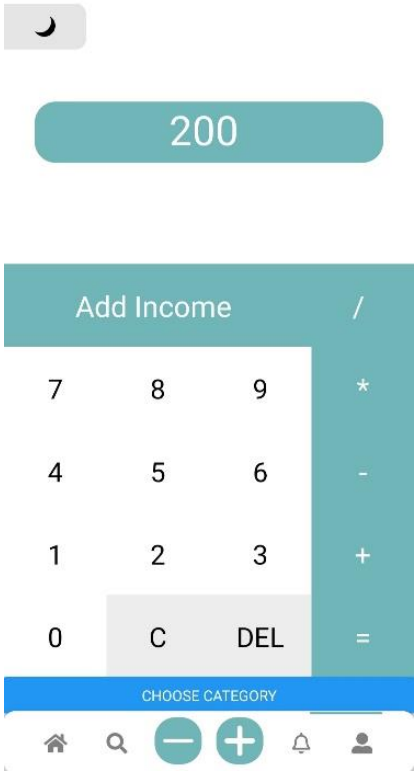
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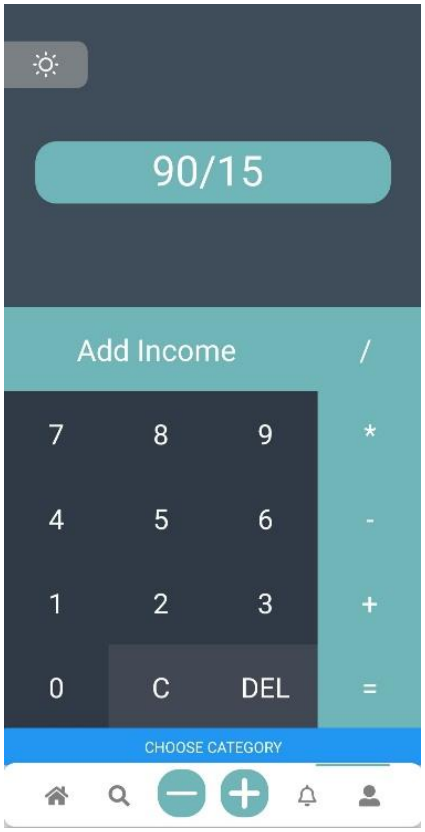
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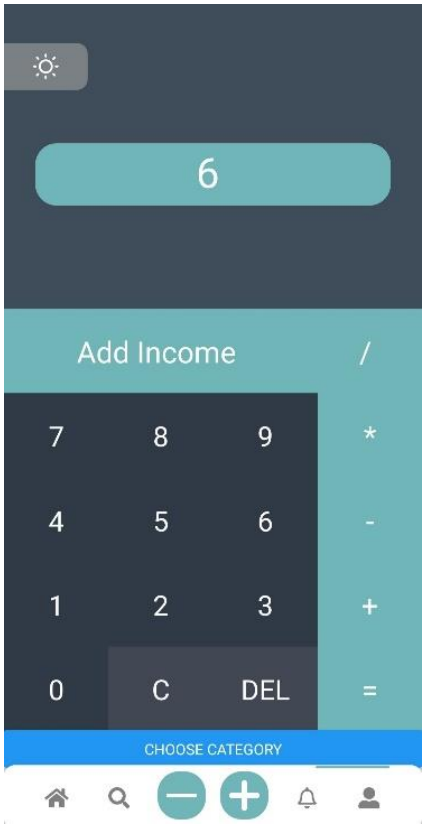
6
Add Income
/
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0 C DEL =
CHOOSE CATEGORY

Categories Screen!

This is the sheep that comes right after you choose the amount spent or the amount earned

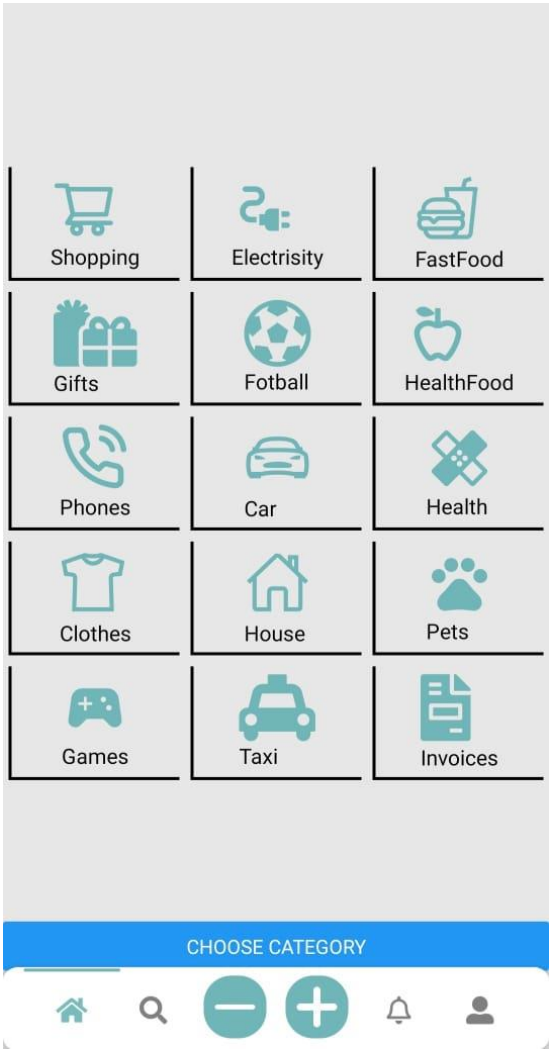
In the case of spending, you can choose many categories that your expenses can be spent on.

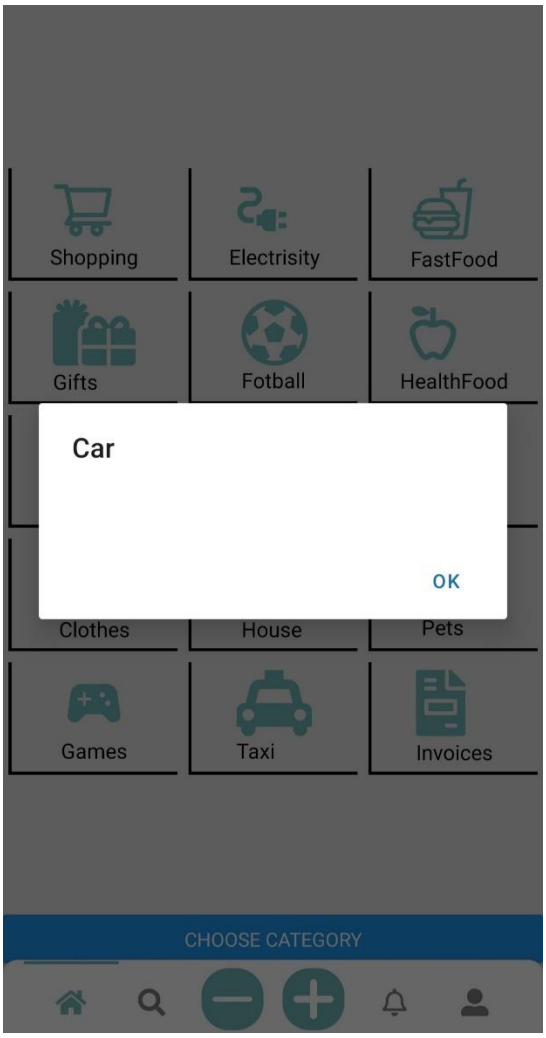
For example, in our daily life, we spend a lot of money on the transportation category. The user chooses the amount spent and chooses the taxi category.

And so in all aspects of his life.

So that all expenditures are in a balanced state, and the person remains constantly aware of the sectors on which he spends his money

In the end, it turns into a graph in the form of any chart showing the percentage of the amount spent on each sector in relation to the total expenditure.





Home Screen!

On the home page the essence of the work, the idea and the content.
We present in it a graph showing all income and expenses in all fields with a percentage so that the user is fully aware of all the details of his financial transactions at all times

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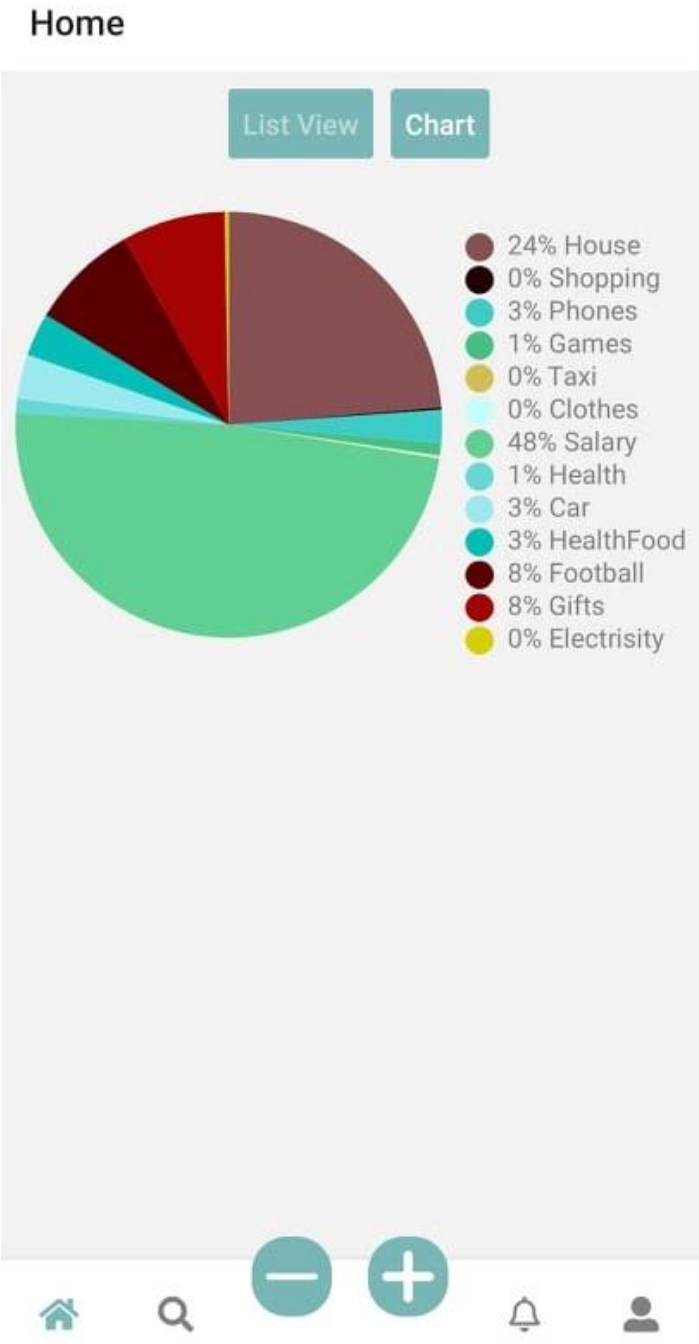


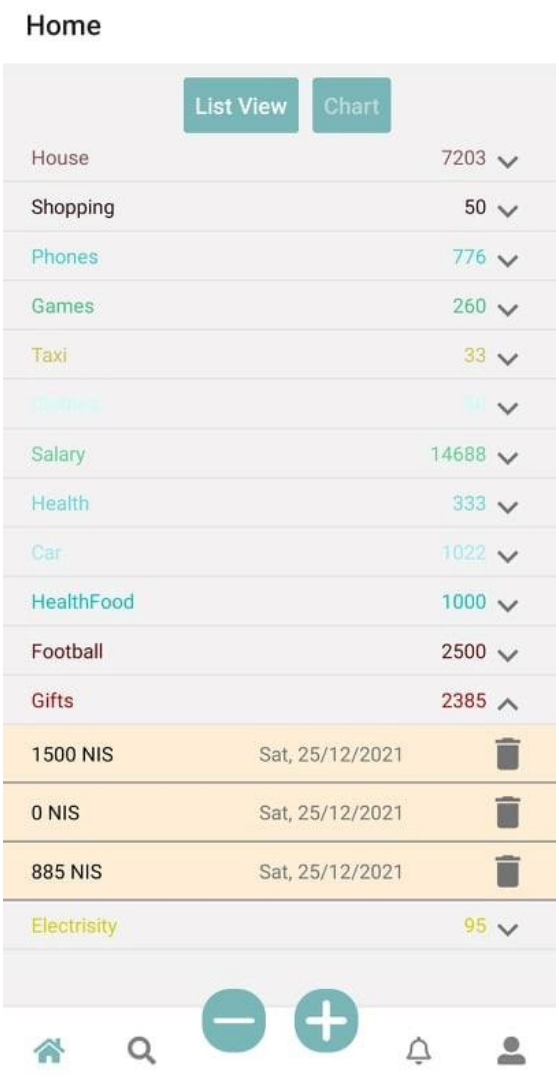
Delete Transaction!

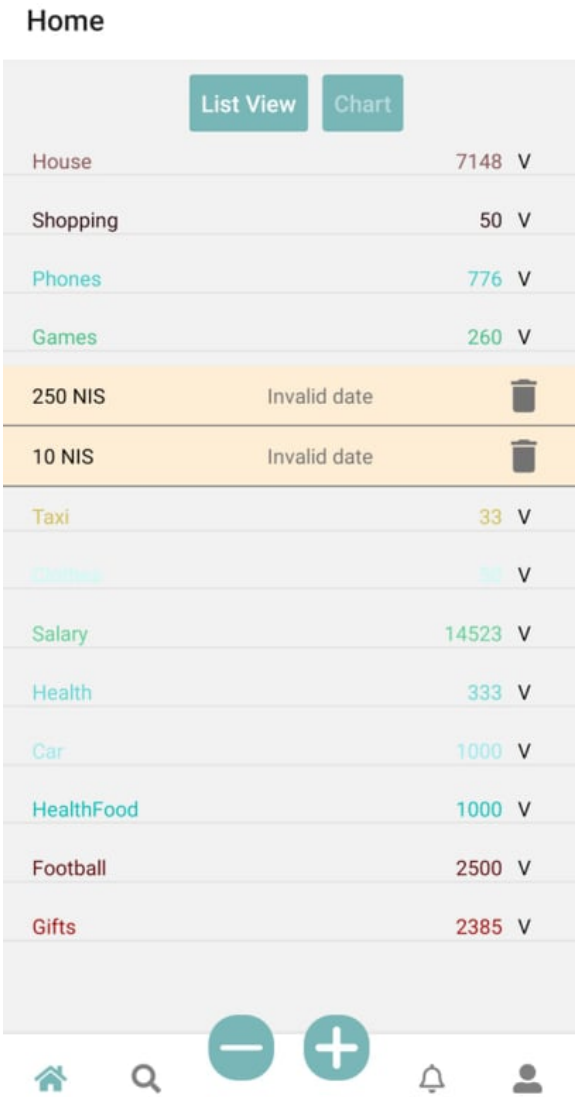
Assuming you entered wrong? What to do?

For example, you entered a number by mistake and this number is different from what you want, what should you do? Can you undo or delete the process?

Here is an important point in the application that we did not overlook, as the error occurs in various fields, and we provided the user with an option that enables him to delete the wrong registration he entered, whether it was in the value of the number entered or its category and to which field it belongs

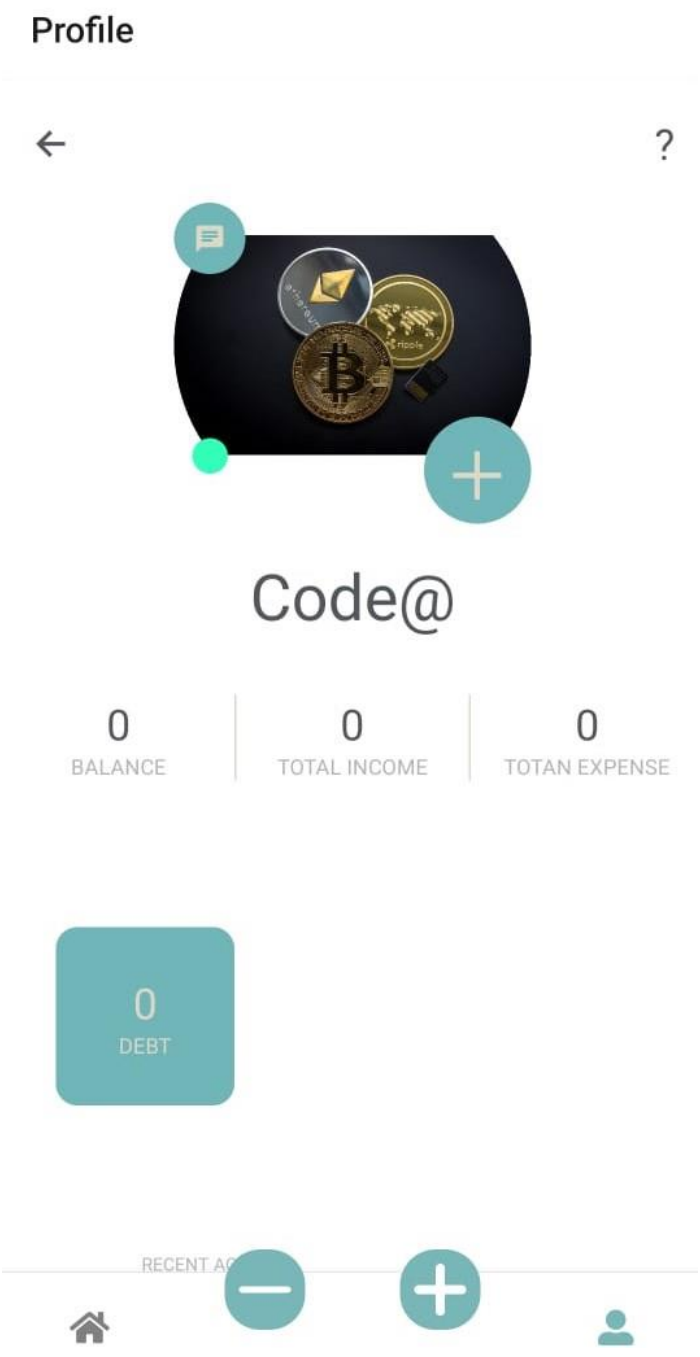
Here, we have provided the user with ease and comfort in use, as they can always undo operations and unused recordings





Profile Screen!

On the personal page, we review a personal profile in a summary of all the details
In terms of the final entrance, the expenses are complete and the balance.
It can show if you have debts or not.



Database

We are using phpMyAdmin to save our database, It was easy and flexible to deal with it.
Here shots of our tables that we build, it is have a testing data to be sure that everything is work and goes ok.

The first shots is contain the users table which contain their names emails usernames, and passwords. While the second table is for user Transaction like amount their spent and field.

Click the drop-down arrow to toggle column's visibility.

				id	fullName	email	username	password
			Delete	1	Ameed Omar	ameed@omar.com	ameedomar	123123
Edit	Copy		Delete	2	Ameeeed	Ameeeed@	Ameeeed	4040
Edit	Copy		Delete	3	AllGood	All@Good	Alll	2040
Edit	Copy		Delete	4	Again	Again@	Ameed	1020
Edit	Copy		Delete	5	Done	Done@	Doine	1020
Edit	Copy		Delete	6	Mob	Mob@ile	Mibule	1020
Edit	Copy		Delete	7	Jo	Jo@	Jo	1234
Edit	Copy		Delete	8	Leb	Leb@	Leb	1020
Edit	Copy		Delete	10	Clean code	Code@	Code	1020
Edit	Copy		Delete	11	All is good	All@is.good	Allgood	1020
Edit	Copy		Delete	12	Weeed	Weeed@	Weeed	1020
Edit	Copy		Delete	14	Tryy	Tryy@	Tryy	1020
Edit	Copy		Delete	16	Graduation Project	graduation@project.com	Software_project	12345678123456

Edit	Copy	Delete	16	All@Good	9000	income	Salary	2021-12-06
Edit	Copy	Delete	17	Mob@ile	500	income	Salary	2021-12-06
Edit	Copy	Delete	18	Mob@ile	60	outcome	Gifts	2021-12-06
Edit	Copy	Delete	19	Code@	21	income	Salary	2021-12-08
Edit	Copy	Delete	20	Code@	0	outcome	Salary	2021-12-08
Edit	Copy	Delete	21	Code@	63	outcome	Health	2021-12-08
Edit	Copy	Delete	22	Code@	666	income	Salary	2021-12-09
Edit	Copy	Delete	23	Code@	333	outcome	Health	2021-12-09

Chapter 6: Result and Dissections

Our application is built with high accuracy with the latest and most advanced technologies to be a competitive platform in the electronic market to help organize transactions and help save

And the matter is not only limited to people, but all companies of all kinds, whether they are start-ups or medium-sized companies, that can benefit from the service provided by our application to computerize all financial transactions and help track all expenditures.

By the end of the day, we've built an app that helps small businesses and

Startups that participate in the business world and also help ordinary people to provide financial regulatory services to organize all matters of their daily lives.

Chapter 7: Conclusions

In this work, we have provided a mobile application that can help companies, institutions and people to track all their expenses and track the groups that drain the bulk of their banks in order to improve exchange in this aspect and balance its expenses so as not to cause them any financial problems.

To accomplish this work, we used React Native as Frontend Language, Node JS as Backend, and phpMyAdmin as Database.

React Native is one of the cross platform languages that can create an application for Android and IOS devices, so that our application works on various operating systems.

Node JS it is based on the JavaScript language that we learned and mastered in order to complete the project. It is considered one of the important languages in the labor market and is widely spread for ease of understanding and working in it.

phpMyAdmin is the language that we use in web course so we have a previous experience to add, delete and modify. In additions we have some experience and resources to deal with this database so it not take a long to decide to use it.

Chapter 8: Future Work

For future work, we are looking for developing the idea in two major aspects; the first one is To add more features to the app like notifications.
The second feature will be integrating a connection between this application and banks to help users to view their Bank accounts.

- Online chat and video calls with Money management specialists.
- Notifications: Sending a notice in the event that there are payments due several days in advance or in the event of certain collections in order to ensure that they are not forgotten or notify him when the percent of his expenses go under a specific range.
- Integration with bank accounts.

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