

ÇANKAYA UNIVERSITY
FACULTY OF ENGINEERING
COMPUTER ENGINEERING DEPARTMENT



PROJECT REPORT
CENG 407 INNOVATIVE SYSTEM DESIGN AND DEVELOPMENT I
CRYPTOCURRENCY PORTFOLIO TRACKER

Advisor: Prof. Dr. Ahmet Coşar

TEAM ID : 2021-23

Sanberk ZÜLFİKAR 201711402

Buğra ÜNALTAY 201311058

Atilla Alperen İMAMOĞLU 201511031

Mustafa Mert YAVAŞ 201511065

Dorukhan TANRIVERDİ 201811054

LITERATURE REVIEW

Abstract

Cryptocurrency technology is one of the most exciting technologies of today's world. There are more than 10.000 different coins with different technologies and purposes, so we wanted to build an application that easy to use yet effective to provide keeping track of multiple cryptocurrency assets. System will be a web application that gathers data from the third-party price monitoring systems and our application will make the user owned coins and their amounts are trackable in real-time with many useful insights.

1.Introduction

Since the introduction of Bitcoin in early 2010's, cryptocurrencies emerged as a different approach for financial situations and many different purposes. Today, they used in many areas and purposes including transferring money, accepting money, financial investment assets and more. Our Project, Cryptocurrency Portfolio Tracker, aims to give users an easy yet effective platform for tracking multiple cryptocurrencies. So an user can see their asset performance, along with many insights.

History of bitcoin

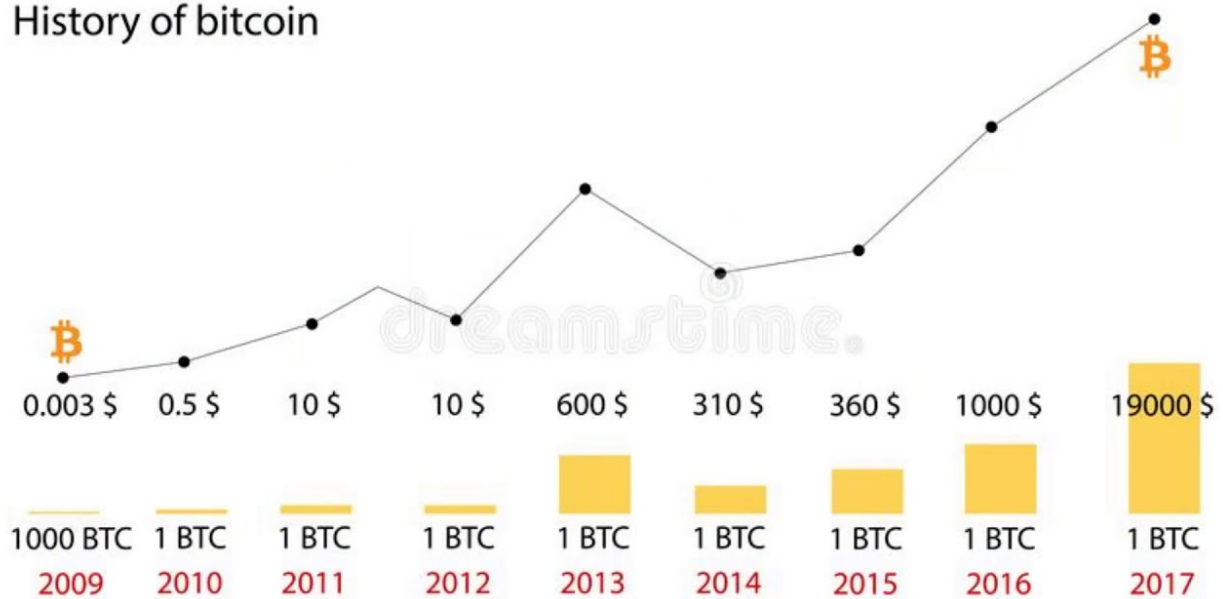


Figure 1

2. What is a Cryptocurrency Portfolio?

An individual, can have multiple coins and they may exist in different platforms. Some coins may available to buy/sell in Binance while some others in crypto.com. All of your holdings make your Cryptocurrency Portfolio and since there's many different exchanges and wallets, sometimes it's get harder to keeping track of your assets in one place. In this situations, Portfolio applications come to the stage. They includes your asset data (all of them) in one platform so you don't need to keep track them one by one in every exchange or wallet. You just simply enter your coin type and your holdings and the application shows all of your holdings in one place. Along with useful insights and calculations.

Existing Cryptocurrency Portfolio Solutions

Today there are some of applications for tracking cryptocurrency portfolios in one platform. Some popular ones are below;

- CoinMarketCap

- CoinGecko
- TradingView

What Do We Aim With Our Project

Existing applications mentioned above usually become hard to use and we aim to give a more user-friendly approach this by eliminating unnecessary steps and maket this an easy yet effective tool for users.



Figure 2

SOFTWARE REQUIREMENTS SPECIFICATION

1.INTRODUCTION

1.1 Purpose

There are more than 10.000 different coins with different technologies and purposes. We wanted to build an application that easy to use yet effective to provide keeping track of multiple cryptocurrency assets. System will be a web application that gathers data from the third-party price monitoring systems and our application will make the user owned coins and their amounts are trackable in real-time with many useful insights.

1.2 Scope

The purpose of this application is to make it easier to follow the coins that change quickly. Our application is easy to use and will allow you to monitor the entire coin market in real time. Thus, instead of having to follow it manually, you can reach

what you want by using this application. For example, users can follow the coins they want by opening a membership.

2. Overall Description

2.1 Glossary

| Term | Definition |
|-----------------------|--|
| Bitcoin | The first global, decentralized currency. |
| Bits | A sub-unit of one bitcoin. There are 1,000,000 bits in one bitcoin. |
| Blockchain | The authoritative record of every Bitcoin transaction that has ever occurred. |
| BTC | An abbreviation for the bitcoin currency. |
| Cold Wallet | A Bitcoin wallet that is in cold storage (not connected to the internet). |
| Cryptocurrency | A type of currency that uses cryptography instead of a central bank to provide security and verify transactions. Bitcoin is the first cryptocurrency. |
| Sitemap | A sitemap is an outline of all the pages on a website. There are three different types of sitemaps: those used by web designers when planning a website, hierarchical listings intended for the human user, and structured listings intended for search engines. |
| Web app | It's important to distinguish between mobile apps and web apps, as they are built differently. Native mobile apps are built for a specific platform, such as iOS for iPhone, and are installed and run on the device itself. Web apps, on the other hand, are accessed via the internet browser and will adapt to whichever device you're viewing them. They're not native to a specific system, nor do they need to be downloaded or installed. |

2.2 User Characteristics

2.2.1 User

- User must be login.
- The user must have a phone with IOS and Android operating system.
- The user can see the coin changes in a certain time period.
- The user can enter portfolio in his/her membership and follow his/her portfolio.
- User should be able to understand the English language.

2.2.2 Admin

- Admin can add/delete users.
- Admin can add/delete coins.

3. Specific Requirements

3.1 External Interface Requirement

3.1.1 User Interfaces

The user interface will work on mobile and PC.

3.1.2 Hardware Interfaces

It has not been decided yet that it will work on specific hardware.

3.1.3 Software Interfaces

It has not been decided yet that it will work on specific software.

3.2 Functional Requirements

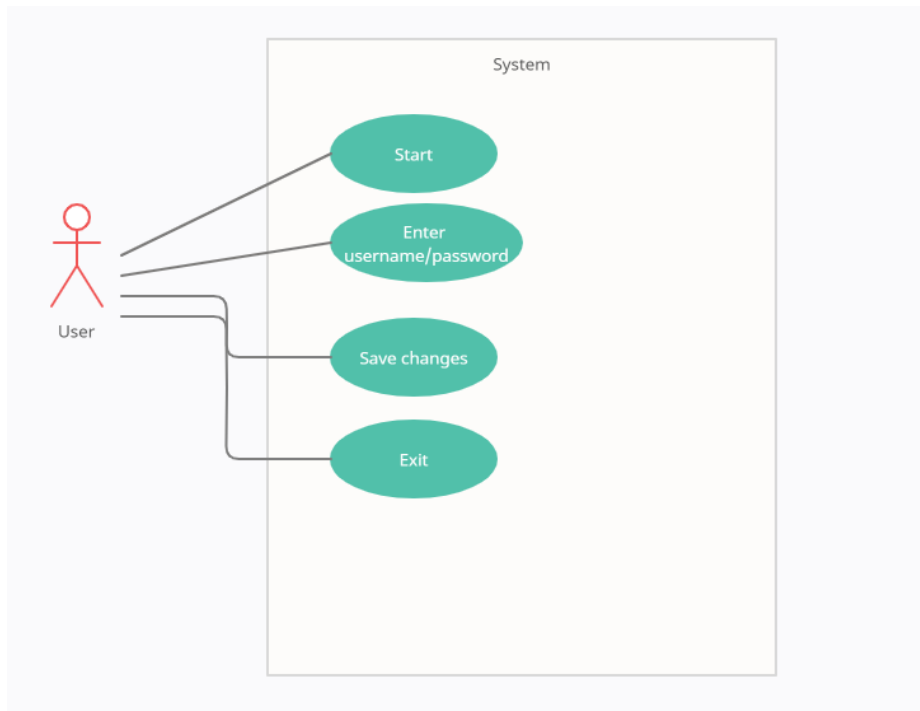
3.2.1. Profile Management Use Case

Use Case

- Start
- Enter username / password
- Save changes

- Exit

Diagram



SOFTWARE DESIGN DOCUMENT

1. INTRODUCTION

1.1 Purpose

There are more than 10,000 different coins with different technologies and purposes. We wanted to build an application that is easy to use yet effective to provide keeping track of multiple cryptocurrency assets. System will be a web application that gathers data from the third-party price monitoring systems and our application will make the user owned coins and their amounts are trackable in real-time with many useful insights.

1.2 Scope

The purpose of this application is to make it easier to follow the coins that change quickly. Our application is easy to use and will allow you to monitor the entire coin market in real time. Thus, instead of having to follow it manually, you can reach what you want by using this application. For example, users can follow the coins they want by opening a membership.

1.3 Glossary

| Term | Definition |
|-----------------------|---|
| Bitcoin | The first global, decentralized currency. |
| Bits | A sub-unit of one bitcoin. There are 1,000,000 bits in one bitcoin. |
| Blockchain | The authoritative record of every Bitcoin transaction that has ever occurred. |
| BTC | An abbreviation for the bitcoin currency. |
| Cold Wallet | A Bitcoin wallet that is in cold storage (not connected to the internet). |
| Cryptocurrency | A type of currency that uses cryptography instead of a central bank to provide security and verify transactions. Bitcoin is the first cryptocurrency. |
| Sitemap | A sitemap is an outline of all the pages on a website. There are three different types of sitemaps: |

| | |
|----------------|--|
| | those used by web designers when planning a website, hierarchical listings intended for the human user, and structured listings intended for search engines. |
| Web app | It's important to distinguish between mobile apps and web apps, as they are built differently. Native mobile apps are built for a specific platform, such as iOS for iPhone, and are installed and run on the device itself. Web apps, on the other hand, are accessed via the internet browser and will adapt to whichever device you're viewing them. They're not native to a specific system, nor do they need to be downloaded or installed. |

2. Software Architecture

2.1. Architecture Design Approach



Figure 1

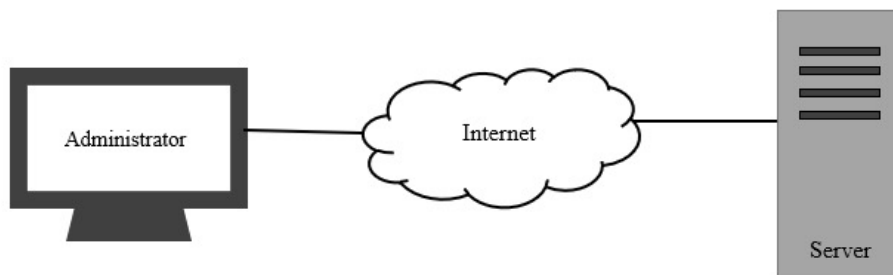


Figure 2



Figure 3

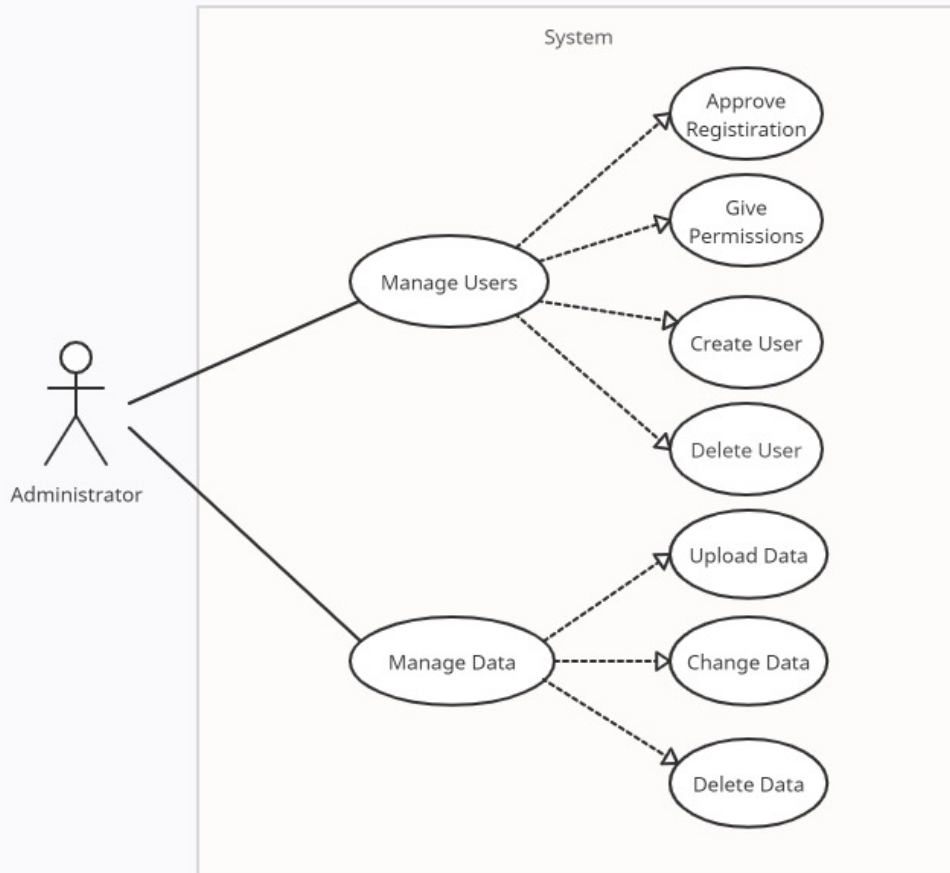


Figure 4

3. User Interface Design

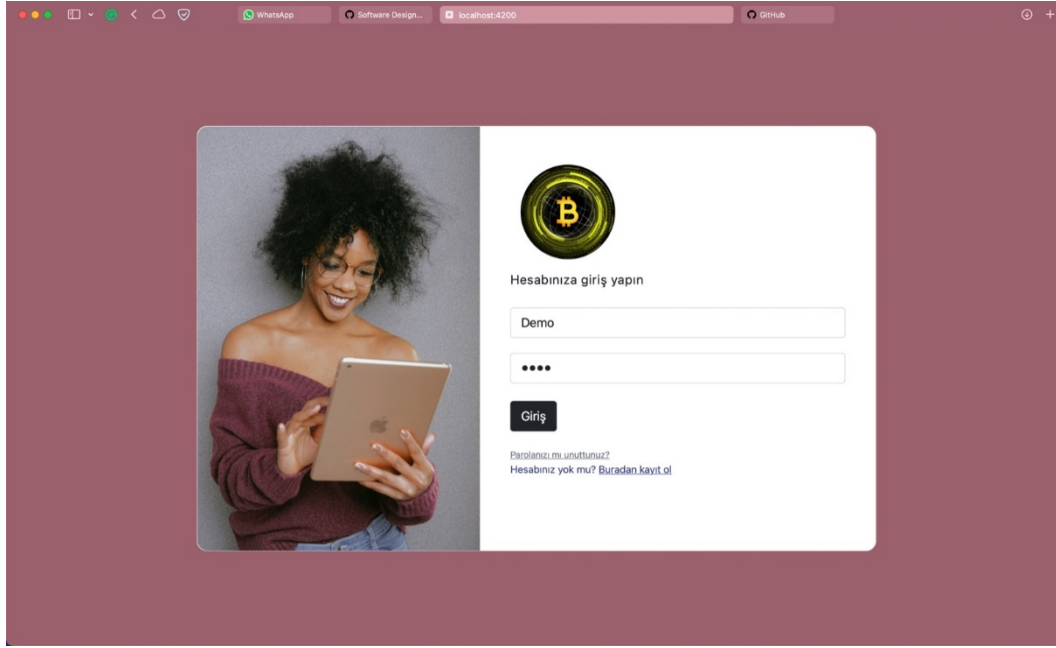


Figure 5: Login Page

| # | İsim | Fiyat |
|---|----------|-------------|
| | BTC | \$43,914.42 |
| | BTC/TRY | ₺595,716.81 |
| | AAVE | \$219.18 |
| | AAVE/TRY | ₺2,974.16 |
| | ADA | \$1.30 |
| | ADA/TRY | ₺17.67 |
| | ANKR | \$0.10 |
| | ANKR/TRY | ₺1.31 |
| | ATOM | \$40.88 |
| | ATOM/TRY | ₺554.84 |
| | AVAX | \$95.01 |
| | AVAX/TRY | ₺1,289.42 |
| | AXS | \$77.37 |
| | AXS/TRY | ₺1,050.68 |
| | BAT | \$1.11 |
| | BAT/TRY | ₺15.06 |
| | CHZ | \$0.28 |
| | CHZ/TRY | ₺3.78 |
| | COMP | \$198.09 |

Figure 6: Coin Prices List Page

Conclusion & Discussion

Cryptocurrency or in general the blockchain technology is a very promising and a ground breaking field. It will help financial institutions limits lessened and more secure. Our goal is to provide a user friendly portfolio tracker. Considering many people buy and hold their assets in multiple places, not in one platform, a tool something like this is much needed.

There are already numerous solutions for this purpose but they fail to deliver a user experience that easy yet effective. This is where our goal comes to place. Easy yet effective cryptocurrency portfolio tracker for anyone.

References

- [1] <https://help.coinbase.com/en/coinbase/getting-started/crypto-education/bitcoin-glossary>
- [2] <https://www.kubera.com/blog/how-to-track-your-cryptocurrency-portfolio>
- [3] <https://help.coinbase.com/en/coinbase/getting-started/crypto-education/bitcoin-glossary>
- [4] <https://careerfoundry.com/en/blog/web-development/50-web-development-buzzwords-that-all-new-programmers-should-learn/>
- [5] <https://creately.com/>

PROJECT WORK PLAN

1st Semester Work Plan

- 26 October 2021 - Project Proposal Form (Done)
- 26 October 2021 - Team Setup (Done)
- 26 October 2021 - Project Selection Form (Done)
- 5 November 2021 - GitHub Repository (Done)
- 12 November 2021 - Project Work Plan (Done)
- 12 November 2021 - Literature Review (Done)
- 10 December 2021 - Software Requirements Specification (Done)
- 17 December 2021 - Project Webpage (Done)
- 31 December 2021 - Software Design Description (Done)
- 7 January 2021 - Project Report / Project Tracking Form (Done)
- 24-25 January 2021 – Presentation (In Progress)