



## Introduction - Coin A-Z

### Description:

Coin A-Z is a cryptocurrency tracking application that allows users to monitor coins of interest on the market. The user can search specific coins and get all the historical data along with the current data about the coin including charts. The user can create a custom portfolio to track their entire portfolio value in one place along with tracking of individual assets.

### Goals:

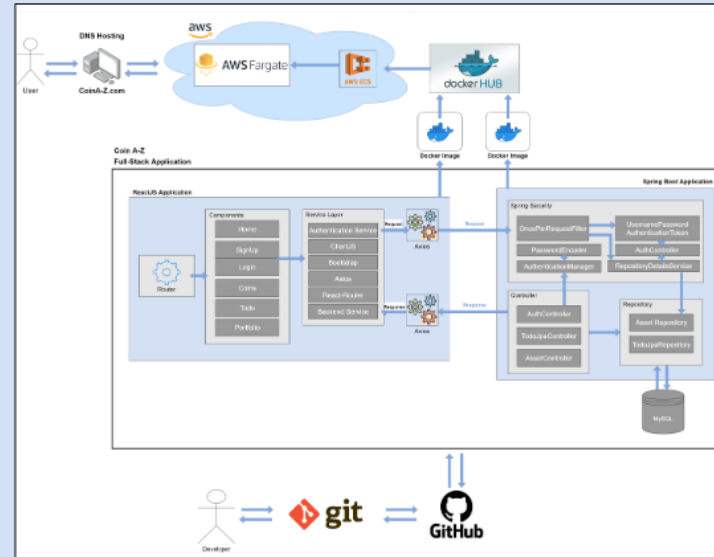
- A scalable micro-service based web application hosted on AWS.
- Fast and responsive web-app.
- User has an easy-to-use user interface where they can have all their analytic needs in one site.
- User is able to register an account
- User is able to create a portfolio of coins which will allow them to track the price of their entire portfolio and individual assets.
- User will have access to historical data on coins along with charts.
- Secure login for users using JWT (Jason Web Token).

## Technologies

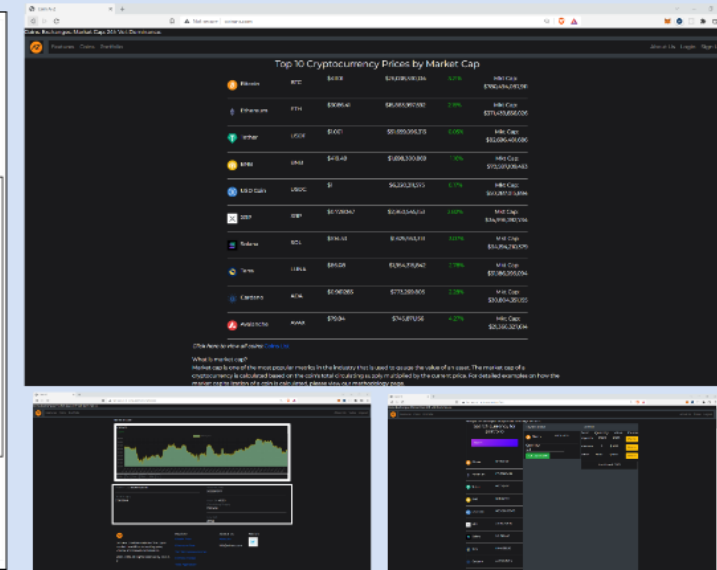


- Coin A-Z uses microservices to deliver any coin request that the user might input. It includes Spring Boot REST applications, ReactJS UI and MySQL, it uses Docker to wrap the applications while also making the applications scalable.
- The project/app retrieves the cryptocurrency data and analytics using the CoinGeckoAPI.
- The front-end is developed with React and JavaScript to display the User Interface and handle the user's inputs. It uses many different React libraries such as Chart.js to chart the coin graphs, Axios for URL requests and Bootstrap. Coin A-Z has an easy-to-use user interface with useful features.
- The project uses MySQL for storing user's data such as their information and their personal portfolio.
- The entire application is hosted by Amazon Web Services using ECS. Using ECS makes it easy to deploy my docker images directly without any configuration on a virtual EC2.
- The site itself uses DNS on a domain from godaddy.com.

## Architecture Diagram



## Results



## Conclusion

For my final year project, I set out to design a cryptocurrency tracking application and website using React, Springboot, MySQL, Docker and AWS. The website would allow a user to create an account, build a custom portfolio of coins and track their asset value. Users will also be able to look at coin data and graphs. I designed and built from scratch a fully functional full-stack website which met the requirements I originally set out to complete. Using languages such as Java, JavaScript, HTML, CSS, Bootstrap, SQL allowed me to develop Coin A-Z, which allows users to easily understand and use the system without having ever used it before, with ease and efficiency. Using AWS, I hosted my frontend and backend applications, I also used DNS to host my website on a domain I acquired.

Having gone through the process of developing a software project from start to finish, I have enhanced my overall knowledge of each area SDLC (Software Design Life Cycle), which also incorporating and building on elements of modules that I have studied in my undergraduate course. The process has given me an understanding of the all hard work and planning that goes into software development projects and has allowed me to learn how to develop a full-stack application, which is valuable knowledge I will be taking with me further in my software career moving forward.

## Functionalities & Features

- Full-Stack functionality
- Micro-serviced based
- ChartJS (Coin Charts)
- Axios (URL Requests)
- API Requests (CoinGeckoApi)
- User registration
- User portfolio tracker
- Individual asset tracking
- User task creator
- JWT
- Dockerized
- AWS Hosted (ECS/EC2)
- DNS

