

Project Engineering

BEng(H) Software & Electronic Engineering

Ciarán Slattery – G00373551
Niall O’Keeffe - Project Supervisor











Coin A-Z 

Coin A-Z

Coins: Exchanges: Market Cap: 24h Vol: Dominance:

Features Coins Portfolio About Us Login Sign Up

Top 10 Cryptocurrency Prices by Market Cap

	Bitcoin	BTC	\$4101	\$26,038,330,134	3.29%	Mkt Cap: \$780,494,087,911
	Ethereum	ETH	\$3086.41	\$15,883,997,592	2.15%	Mkt Cap: \$371,439,836,026
	Tether	USDT	\$1.001	\$51,659,096,313	0.05%	Mkt Cap: \$82,696,481,686
	BNB	BNB	\$419.49	\$1,698,300,869	1.16%	Mkt Cap: \$70,587,109,493
	USD Coin	USDC	\$1	\$6,220,211,575	0.77%	Mkt Cap: \$50,287,015,894
	XRP	XRP	\$0.728047	\$2,960,545,153	2.82%	Mkt Cap: \$34,996,282,734
	Solana	SOL	\$104.53	\$1,625,953,313	3.07%	Mkt Cap: \$34,194,210,379
	Terra	LLUNA	\$86.08	\$1,954,315,842	2.78%	Mkt Cap: \$31,186,093,094
	Cardano	ADA	\$0.961283	\$773,269,805	2.28%	Mkt Cap: \$30,804,331,135
	Avalanche	AVAX	\$79.84	\$745,871,156	4.27%	Mkt Cap: \$21,366,327,614

[Click here to view all coins: Coins List](#)

What is market cap?
Market cap is one of the most popular metrics in the industry that is used to gauge the value of an asset. The market cap of a cryptocurrency is calculated based on the coin's total circulating supply multiplied by the current price. For detailed examples on how the market capitalization of a coin is calculated, please view our methodology page.





Project Summary

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.

Coin A-Z uses microservices to deliver any price request that the user might input. It includes Spring Boot REST applications and uses Docker to wrap these applications in containers. The containers will simplify the delivery and management of these microservices while also making the applications scalable.

- Allow user to search for coins
- Allow user to create a custom portfolio
- Allow user to look at coin data and historical charts

Coin A-Z

Full-Stack cryptocurrency tracking and portfolio manager webapp - coina-z.com



Oilescail
Teicneolaíochta
an Atlantaigh
Atlantic
Technological
University

Ciarán Slattery

BEng (H) Software and Electronic Engineering 2021/22

Supervisor: Niall O'Keeffe

Project Engineering

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:

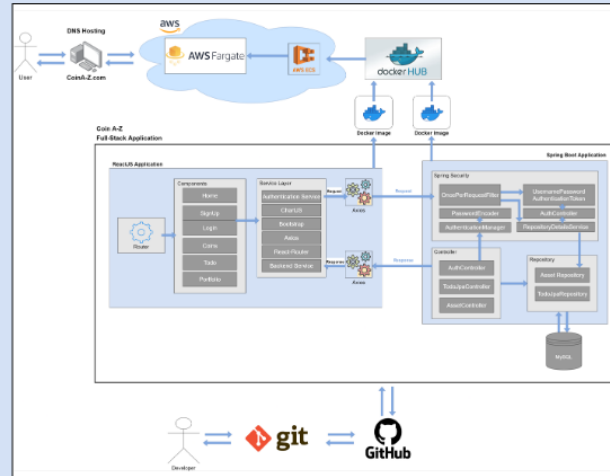
- A scalable micro-service based web application hosted on AWS.
- Fast and responsive web-app.
- User has an easy-to-use user interface where they can have all their analytic needs in one site.
- User is able to register an account.
- User is able to create a portfolio of coins which will allow them 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

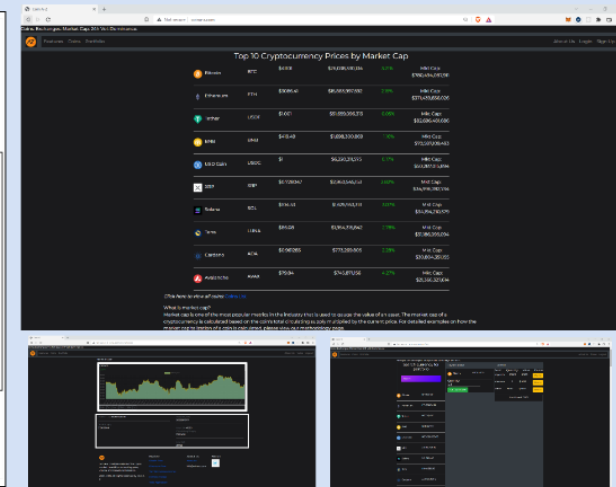


- Coin A-Z uses microservices to deliver any coin request that the user might input. It includes Spring Boot REST applications, ReactJS UI and MySQL, it uses Docker to wrap the applications in containers. The containers will simplify the delivery and management of these microservices while also making 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 incorporates and builds 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.

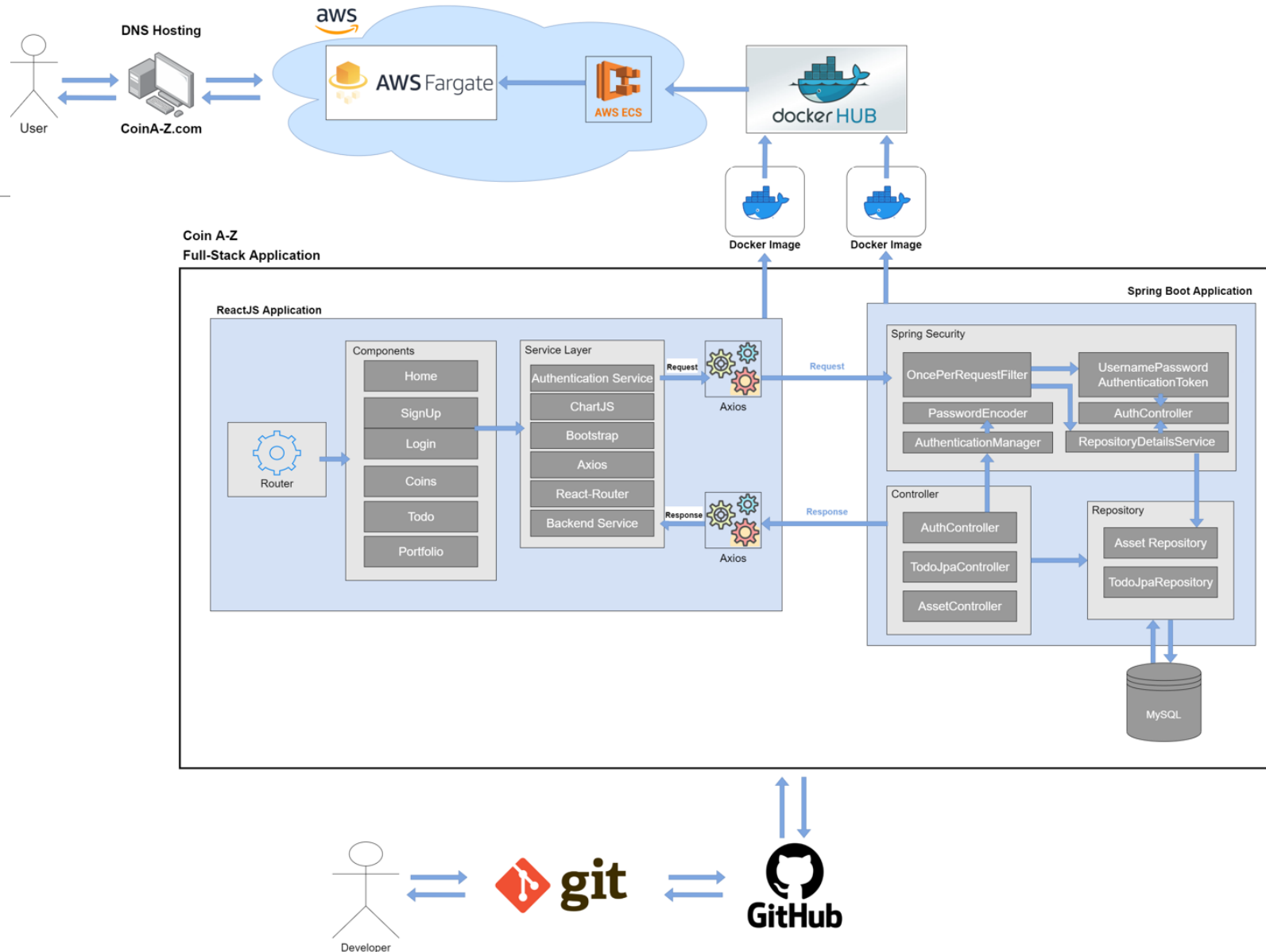
<https://github.com/CiaranSlattery/CoinA-Z>



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

Architecture Diagram



Project Planning

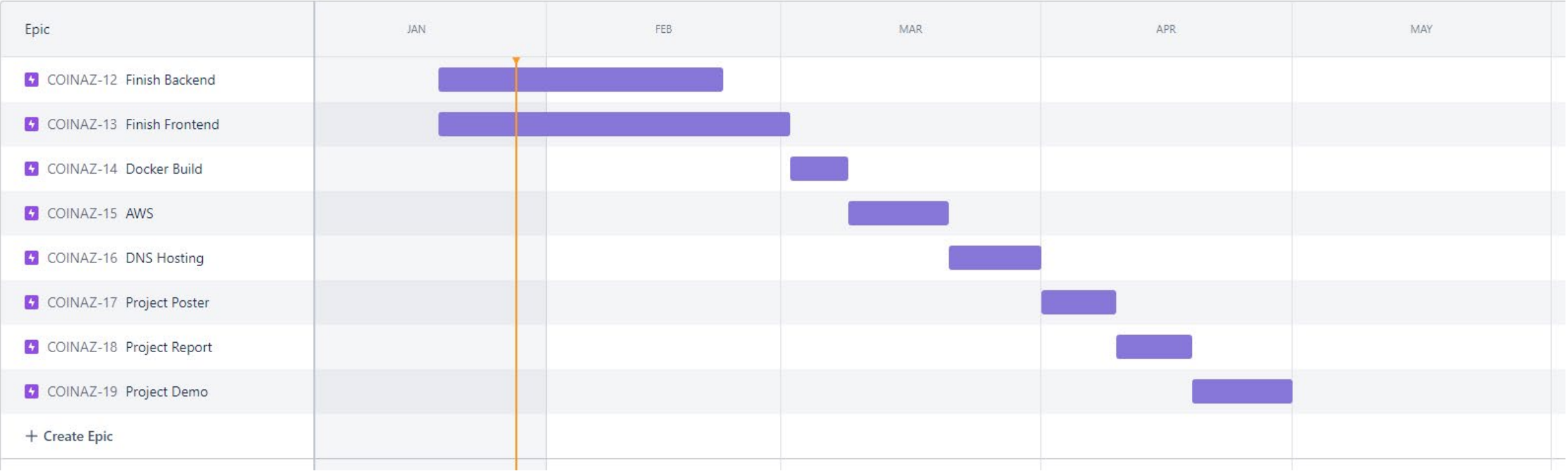
Roadmap

Give feedback Share Export

CS

Status category

Today View settings



Conclusion

For my final year project, I set out to design a cryptocurrency tracking application and website using React, Spring Boot, MySQL, Docker, 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 have achieved everything I set out to develop and complete in my time frame.

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)

The process has given me an understanding of the challenging 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.

With further development of Coin A-Z I believe it can be a product with lots of potential and I plan to further develop this site as a hobby and to further enhance my understanding and skills.