

### Project Abstract

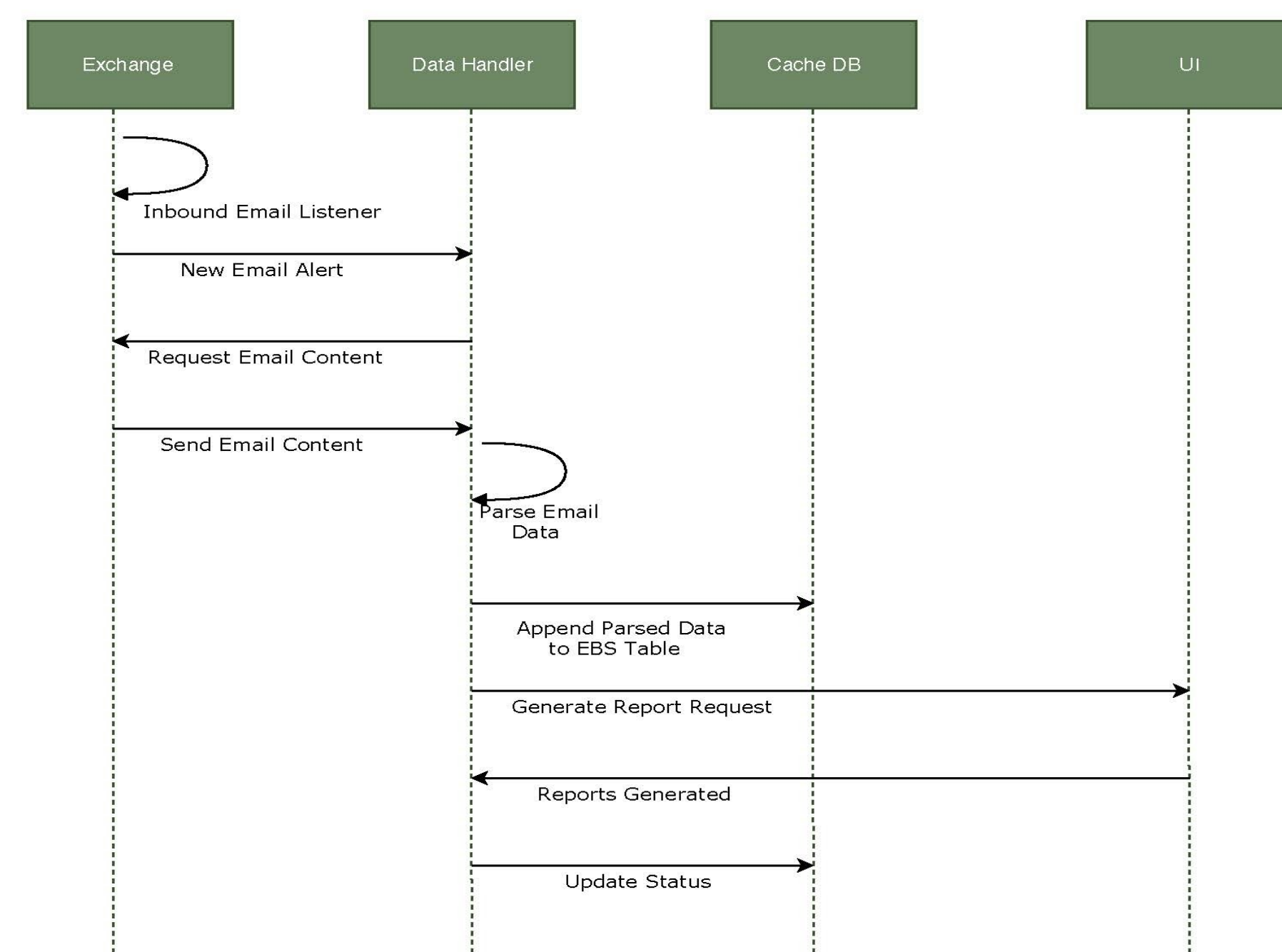
Ameritrade are a broker who offer an electronic trading platform for the trade of financial assets. Regulators such as the SEC send TD Ameritrade petitions for information via Electronic Blue Sheets (EBS). As required by law, TD Ameritrade are required by law to process the EBS requests accurately and within a specific time frame. Firms that do not fully comply with the rules and regulations that surround EBS can be issued substantial fines.

The current process that is used is heavily dependent on personal. Data is copied and pasted into a database query. The human interaction that is currently needed increases the risks of error that could result in heavy fines.

The purpose of this project was to create a fully functioning system that can handle EBS requests with little to no interaction by personal. The system will reduce the risk to the firm by improving the ability to accurately report trade data in a timely manner and increase the firm's competitive advantage by enhancing efficiency.

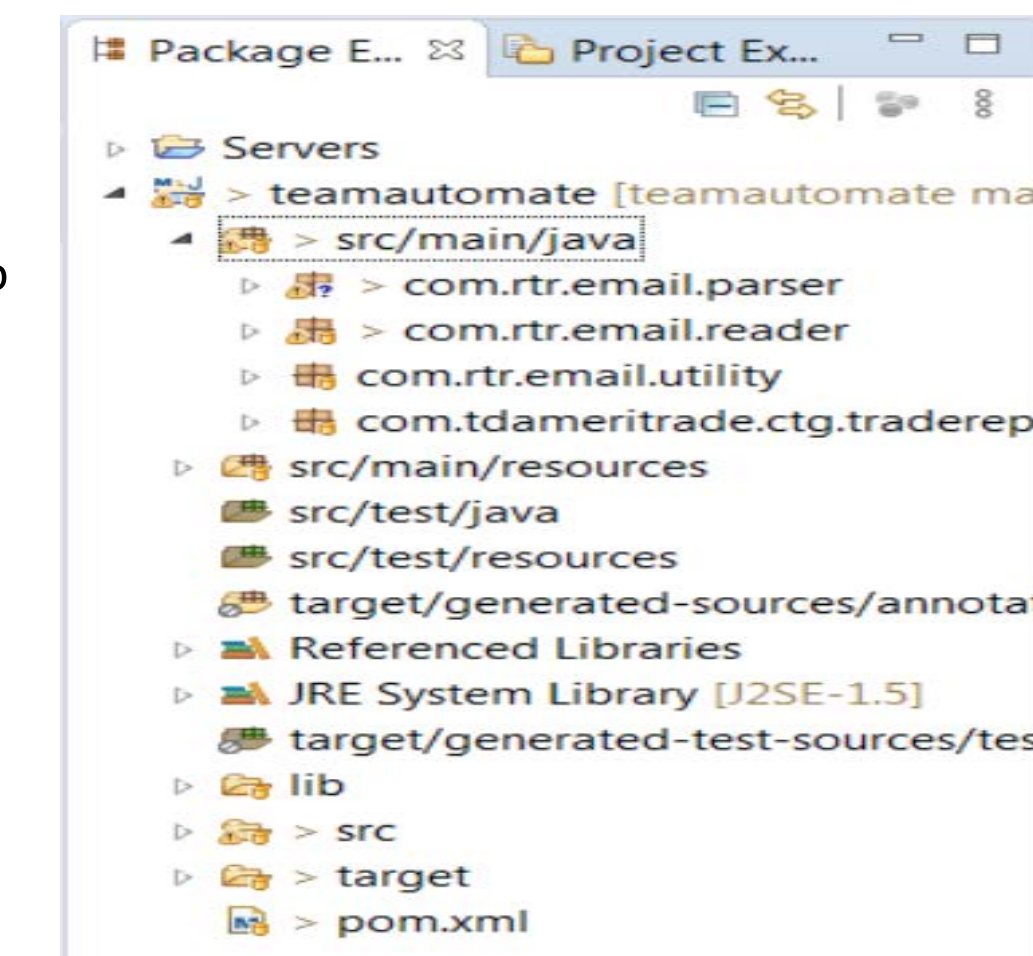
### Project Design Structure

#### Sequence Diagram



#### Code Structure

The code is split into three main function. **Email.reader** uses Java Mail to look at a dedicated email server to search for unread emails with attachments. The attachments are then saved into a folder on the C drive. **Email.parser** looks in the C drive for the attachments and then parses the necessary information and saves them into an object. **Email.Utility** calls a function to inset the data in the object into the database.



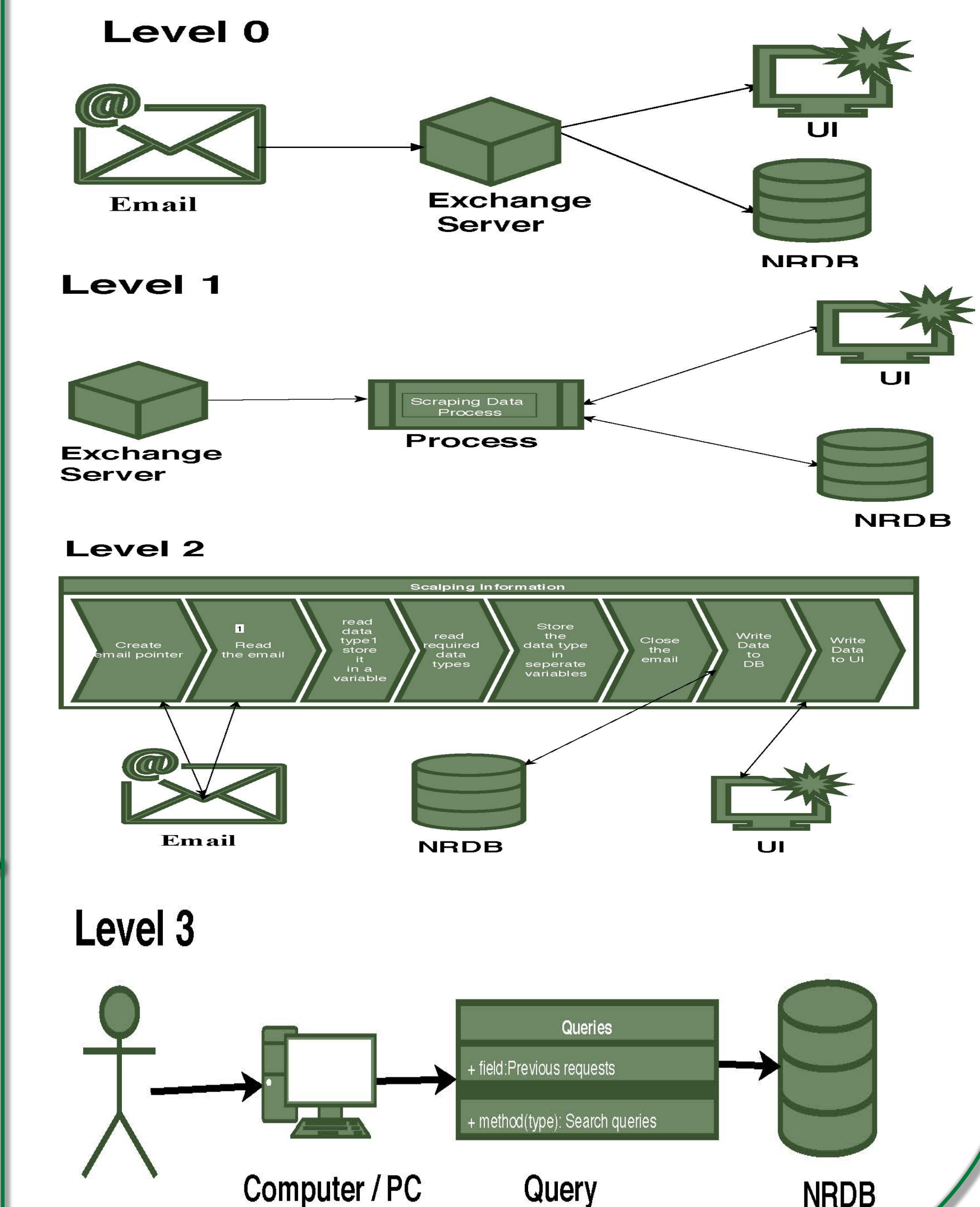
#### EBS Example



The Electronic Blue sheet request comes as a PDF attached to an email. The PDF file is a minimum of 3 pages and the data that we needed to parse is:  
 CUSIP Number: 02356B156  
 Clearing MPID / CM #: 0188  
 Trade Dates: 01/06/2017 - 02/24/2017  
 Requesting Org. #: SEC000000023659  
 Requestor Code: X  
 Due Date: October 17, 2019

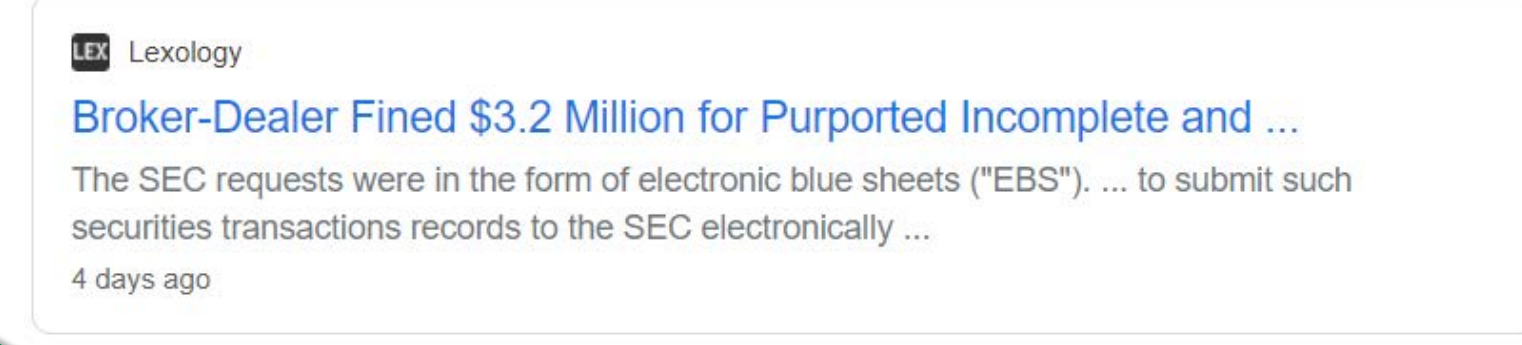
NOTE: Pictures are not a true representation of the final code and some functionality and classes have not been included due to data security issues.

#### Use Cases



#### Recent EBS News

A Brokers have been fined Millions of Dollars for inaccurate EBS requests. It's imperative that we developed a reliable system so that TD Ameritrade does not get into this same situation.



#### Software Used



### Future improvements

Version 2.0 of this software should include a GUI for the benefit of usability. This system should be maintained by TD Ameritrade regularly to ensure that it is kept up to date with any regulation changes.

### Challenges:

- Environment Set-up on VM.
- Access issues (Admin Rights on C: , server)
- Maven Project Set up
- Scope Changes, change from outlook API to Jaimail.
- Security obligations
- Understanding the EBS Request Process

### Skills developed:

- Java - REST API - PDFbox, troubleshooting, Software development, Agile, Cache database, Spring framework, process automation project planning, flow charts, UML diagrams

### Other experience gained:

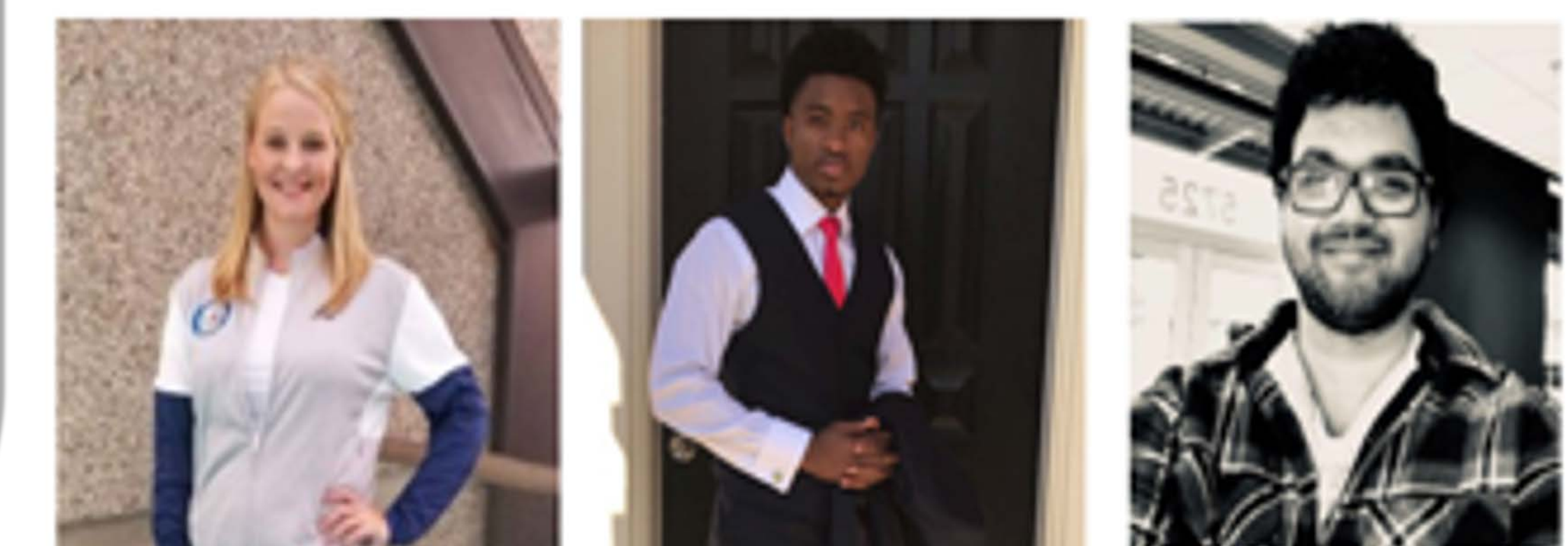
- Working and navigating in a large corporation, collaboration with TD Ameritrade Team to automate EBS Process.
- Creative Project Management during COVID-19 Pandemic.

### Work to complete:

- Test Cases
- Merging Git branch to Master
- Deployment



**Company:** TD Ameritrade  
**Department:** The Regulatory Trade Reporting Team  
**Internal Sponsor:** Professor David Keathly



Victoria Brookes      Caleb Agbey      Loksubhash Pulivarthi