SnapChat-

Stacks used:
1. Programming Languages-
   - Java
   - Kotlin
   - Swift
   - Javascript
   - Objective-c
2. Databases:
   - MySQL
   - MongoDB
   - DocumentDB
   - Redis
3. Frameworks/Libraries:
   - Bootstrap
   - React
   - JQurey
   - Cocoa touch
   - Angular js
4. Cloud Computing:
   - Google cloud datastore
   - Google compute Engine
   - Google app engine
5. Others:
   - Terraform
   - Jenkins
   - GitHub
   - BigQuery   (Shah, 2020).
   - TwilioSendGrid

Some of the stacks SnapChat uses are listed above. To write out their code they use Java which is often used for backend, Javascript is usually used for frontend, Kotlin is used for android, and swift is used for iOS. Objective C is a language developed off of C so I would guess they would have some similarities. For their databases, MySQL is used which is a relational DBMS. MongoDB is also used which is non-relational. I hadnt heard of the other two but after looking them up I found out that documentDB is run by amazon, and is no-SQL. It can store query as well as JSON data. Redis stands for Remote Dictionary Servey that works with key/value pairs. Bootstrap is a CSS frame

work which is used for styling and interface I believe, React is a Javascript library used in order to build user interfaces with pieces of code called componets. JQurey I have wired with at my work, it makes writing javascript easier for the programmer. After looking up cocoatouch, I believe it helps software for Iphones to run correctly. AngularJs was a javascript framework for app development that seems to have been sunset. From what I can tell Google cloud datastore allows Snapchat to run their databases on the cloud, so I would assume that they use this may help with their datawearhouse, datalakes, data marts. Googl compute Engine helps with searches and allows for virtual machines. Google app engine helps to develop apps at scale from what I could tell. Terraform, Jenkins and of course gitHub are all for development purposes. BigQuery is what is ued for their data warehouse and Twilio SendGrid is used for email and communication.

NextFlix-

Stacks used:
6. Programming Languages-
   - Java
   - Kotlin
   - Swift
   - Javascript
   - Python
7. Databases:
   - MySQL
   - MongoDB
   - Cassandra
   - Redis
8. Frameworks/Libraries:
   - NodeJs
   - React
   - RxJs
   - Falcor
   - Restify
9. Cloud Computing:
   - Amazon Ec2
   - Amazon S3
   - Amazon RDS

- Amazon DynamoDB
- Amazon EMR
- Amazon SES

10. Others:
- Spinnaker
- Jenkins
- GitHub
- ApacheMesos
- Elastic Search
- Kafka   (Shah, 2020)

Python is the only new language listed for Netflix, it is an easily understood language that has been around for many years but lately gained alot of popularity. It is often used for dealing with data and sometimes backend as well. Cassandra is also used for databases, it is no-SQL and manages large amounts of data across commodity servers.NodeJs is what we have been using in class, its a server environment. Rxjs is a library apart of Angular, Falcor is the data platform that powers the Netflix UIs. Restify is a framework built specifically to build REST web services in Node. js frameworks like Express. Js.

Pintrest-

Stacks used:
11. Programming Languages-
- Java
- Objective-C
- Go
- Javascript
- Python

12. Databases:
- MySQL
- RocksDB
- HBase
- Redis

13. Frameworks/Libraries:
- NodeJs
- React

- Jest
- Django

14. Cloud Computing:
    - Amazon Ec2
    - Amazon S3
    - Amazon Cloud Front
    - Amazon Route 53

15. Others:
    - Docker
    - Amazon ECR
    - Presto
    - Nimble Droid
    - Hadoop
    - Elastic Search   (Shah, 2020)
    - Kafka

Finally for my third example, I will use Pintrest. Afew of the programming languages that Pintrest uses that havent been previously discussed are React and Go. Go was created at Google and is a statically typed language. RocksDb is written in C++ and had key/value pairs. HBase is a non-relational database that is column oriented. I found Jest interesting, it is used to test the correctness of Javascript code.Django is written in python and follows the model–template–views architectural pattern.

Reference-

Shah, H. (2020, July 24). *Tech Stack of 5 Popular Billion Dollar Companies*. Simform - Product Engineering Company; https://www.facebook.com/simform. https://www.simform.com/blog/tech-stack-billion-dollar-companies/