Fintech Hiring trends of Discover Financial and SunTrust Bank in the US

Summary	Our goal in this case study is to analyze the job openings in the top US Banks and hiring trends in the industry, particularly in the area of Fintech.
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Overview

The ever-changing business model and technological revolution have driven the growth of a new generation of financial products and services, collectively known as financial technology.

What is Financial technology?

Financial technology, often shortened to **FinTech** or **fintech**, is the new technology and innovation that aims to compete with traditional financial methods in the delivery of financial services. It is an emerging industry that uses technology to improve activities in finance.

What we will do?

Our goal in this case is to conduct a study on the job openings in Discover Financials and Suntrust Bank to analyze the data and draw insights on hiring patterns and trends in the area of Fintech.

Why are we doing this?

Many existing financial institutions are implementing Fintech solutions and technologies in order to improve and develop their services, as well as gaining an improved competitive stance.

The use of smartphones for mobile banking, investing services and cryptocurrency are examples of technologies aiming to make financial services more accessible to the general public.

In a 2017 CB Insights report, more than 46% of vacancies were in the technical department. Things are growing rapidly, and as we enter 2019, it is necessary to understand the recruitment trends of top US financial institutions.

What we'll need(the tools we used)

- Pycharm
- Data Studio
- GitHub
- Google Extensions

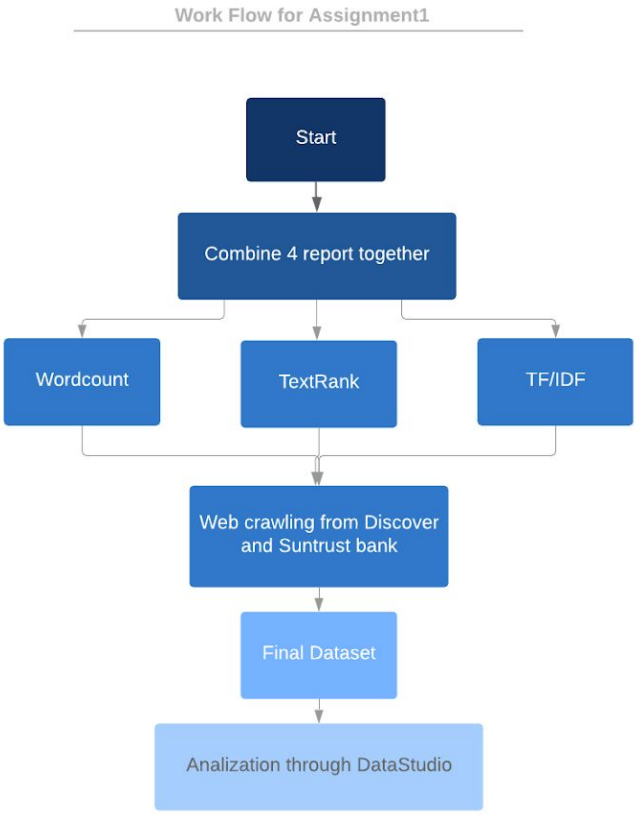
Our Workflow

First, we collaborated the research work of WEF and created a resultant pdf which was converted into text to further remove all the stopwords and special characters. Then we created three csv lists based on the research of 'The World Economic forum' (WEF) to find the top 100 keywords based on 3 different approaches to describe fintech.

Secondly, we built a scraper to parse the data from the career site of Discover Financials and Suntrust Bank to do keyword extraction so that we can analyse the frequency of top 100 keywords extracted from part 1.After this, we built a concatenated dataframe using pandas to visualise the hiring pattern graphically.

Finally, we collected additional data according to the requirement such as Job ID, location and Job Title and then analyzed the data set to see how hiring trends emphasize the institution's focus on key areas of financial technology.

The flow chart



PART 1

- WordCount

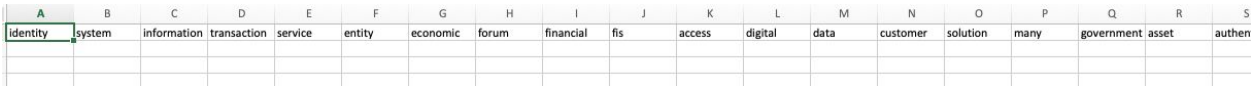
Output csv file

customer	financial	bank	market	payment	institution	product	system	new	investor	state	information	investment	traditional	transaction	world	insurance	finding	asset
1004	939	653	638	579	575	477	453	437	424	379	373	370	370	369	358	343	304	

Extraction of top 100 keywords according to the number of occurrences in the resultant research pdf.

- TF/IDF

Output csv file



identity	system	information	transaction	service	entity	economic	forum	financial	fis	access	digital	data	customer	solution	many	government	asset	authen

Extraction of top 100 keywords according to the tf-idf weightage of each word. The tf-idf weight is composed by two terms: the first computes the normalized Term Frequency (TF), the number of times a word appears in a document, divided by the total number of words in that document; the second term is the Inverse Document Frequency (IDF), computed as the logarithm of the number of the documents in the corpus divided by the number of documents where the specific term appears.

- TextRank

Output csv file

network	single	new	rp	group	idp	different	deloitte	product	technology	bank	users	physical	public	project	services	implement

The textrank is an algorithm that compares the words in the file before and after the given words. It makes a comparison tables. If the word is repeated it creates a specific

meaning that's why textrank is able to pick phrases and text that can give a summary of the given text

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PART 2

In this part, we web scraped the career site of Discover Financials and Suntrust Bank using Selenium and BeautifulSoup respectively, to extract the Job Title, Job ID , job description, location of job, and URL of the job post.
After this, we extracted the occurrences of top 100 keywords from rach approach from part 1 in the job description of both the banks.
After obtaining the data, we used pandas library to build a data frame to get a concatenated result of all the data obtained previously.

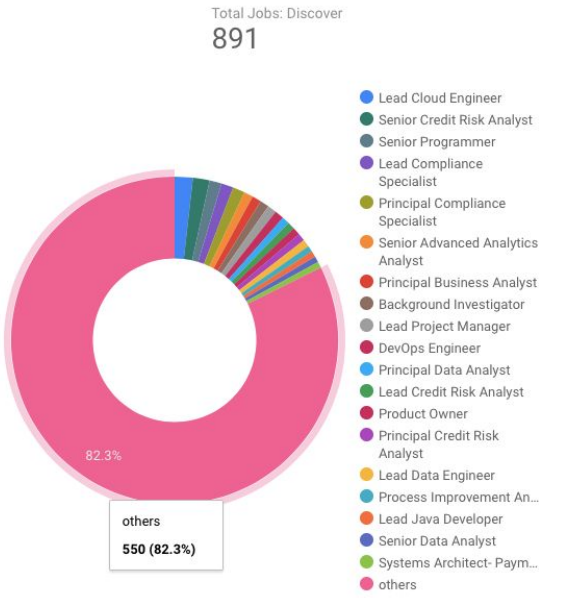
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1		Job ID	Institution	URL	list id	location	Job Title	ability	able	access	additional	asset	assurance	attribute	authentica	bank	being	building	business	card	case
2	0	P116554_5	Discover Fi	https://job:	1	Riverwood:	Principal Data Analyst												7	2	
3	1	P126325_5	Discover Fi	https://job:	1	Riverwood:	Lead Credit Bureau Data Analyst												6		
4	2	P135276_5	Discover Fi	https://job:	1	Riverwood:	Associate A	1		1									12		
5	3	P198841	Discover Fi	https://job:	1	Riverwood:	Principal Sc	3	1						1			1	1		
6	4	P199060	Discover Fi	https://job:	1	Riverwood:	Lead Project Manager												3		
7	5	P100242_5	Discover Fi	https://job:	1	Remote	Senior Exec	4										1	6		
8	6	P134994_5	Discover Fi	https://job:	1	Riverwood:	Senior Manager Compliance Programs														
9	7	P198209	Discover Fi	https://job:	1	Riverwood:	Lead Business Analyst												7		
10	8	P199059	Discover Fi	https://job:	1	Riverwood:	Lead Project Manager												3		
11	9	P199146	Discover Fi	https://job:	1	Riverwood:	Lead Recovery Strategy Specialist												6		
12	10	P192700	Discover Fi	https://job:	1	Riverwood:	Senior Prin	3											3		
13	11	P199196	Discover Fi	https://job:	1	Phoenix, A	Customer Service Representative												1		
14	12	P198696_5	Discover Fi	https://job:	1	Riverwood:	DMS Agile (	1			1								4		
15	13	P199213	Discover Fi	https://job:	1	New Alban	Fraud Specialist														
16	14	P138441_5	Discover Fi	https://job:	1	West Valle	Talent Acquisition HR Recruiter												7		
17	15	P195606_5	Discover Fi	https://job:	1	Riverwood:	Sr. Manage	2				1							4		
18	16	P198731	Discover Fi	https://job:	1	Riverwood:	Senior Quality Engineer														
19	17	P120907_5	Discover Fi	https://job:	1	Riverwood:	Senior Principal Cybersecurity Architect						1		1				8		
20	18	P138762_5	Discover Fi	https://job:	1	Riverwood:	Senior AML Investigator				1					1					
21	19	P198882	Discover Fi	https://job:	1	Riverwood:	Senior Crec	1											7	1	
22	20	P199063	Discover Fi	https://job:	1	Phoenix, A	Fraud Specialist														
23	21	P199195	Discover Fi	https://job:	1	Phoenix, A	Entry Level, Fraud Representative (Evening)														2
24	22	P178256_5	Discover Fi	https://job:	1	Riverwood:	Senior Manager Information Security Governance												3		
25	23	P198883	Discover Fi	https://job:	1	Riverwood:	Principal Cr	2											11	3	
26	24	P199138	Discover Fi	https://job:	1	New Castle	Principal Ce	1								1			4		
27	25	P199153	Discover Fi	https://job:	1	Phoenix, A	Account Representative		1												
28	26	P158184_5	Discover Fi	https://job:	1	Phoenix, A	Lead Progra	2											7		
29	27	b ID: 45760	Discover Fi	https://job:	1	West Valle	Discover Bank – Inbound Sales														
30	28	P102799	Discover Fi	https://job:	1	Riverwood:	Senior Consultant Behavioral Insights												8		

This is the raw data we have based on the research from the four pdf and the websites of the two banks.

Part 3

Finally, we use the data frame obtained from Part 2 to visualize the hiring trends and pattern in the banks.
We used a data studio for graphical data visualization.

Job Openings for Discover Financial and SunTrust



Discover Financials

	Job Title	Sr No.
1.	Lead Cloud Engineer	12
2.	Senior Credit Risk Analyst	11
3.	Senior Programmer	8
4.	Lead Compliance Specialist	8
5.	Principal Compliance Specialist	8
6.	Senior Advanced Analytics Analyst	6
7.	Principal Business Analyst	6
8.	Background Investigator	6
9.	Lead Project Manager	6
10.	DevOps Engineer	6
11.	Principal Data Analyst	5
12.	Lead Credit Risk Analyst	5
13.	Product Owner	5
14.	Principal Credit Risk Analyst	5
15.	Lead Data Engineer	5
16.	Process Improvement Analyst	4
17.	Lead Java Developer	4
18.	Senior Data Analyst	4
19.	Systems Architect- Payments (ApplePay,...	4
20.	Senior Manager Compliance Programs	4
21.	Lead Software Developer	4
22.	Account Representative	4
23.	Lead Scrum Master	4
24.	Fraud Specialist	4
25.	Lead Risk Operations Program Managem...	4

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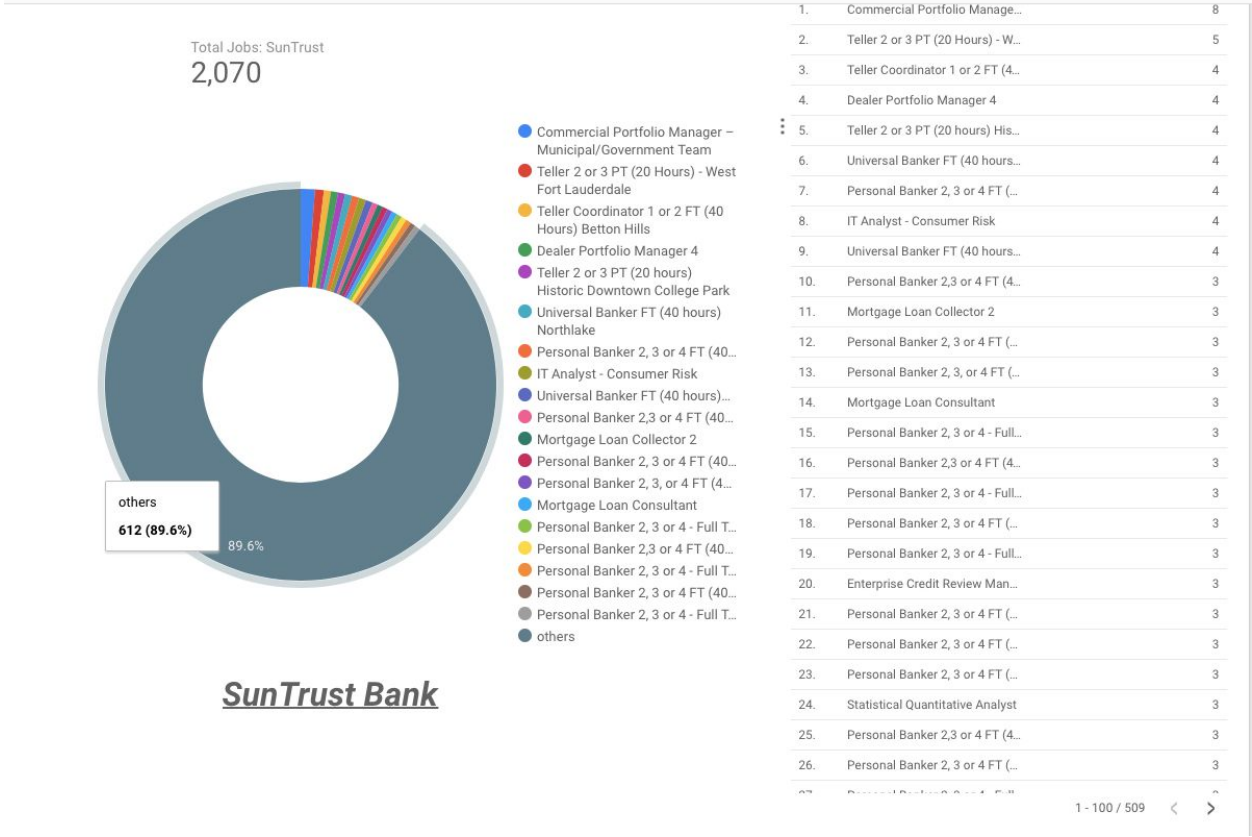
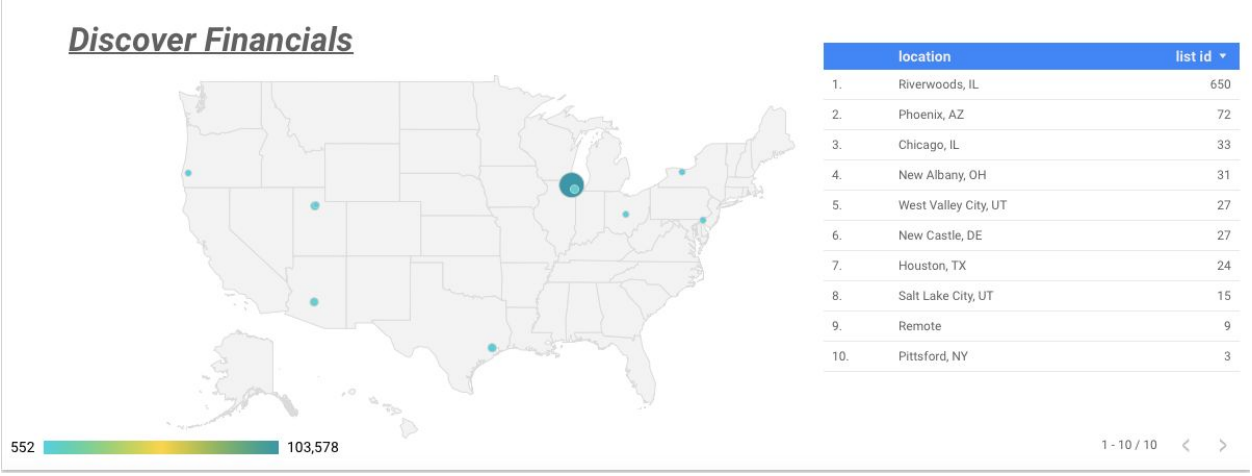
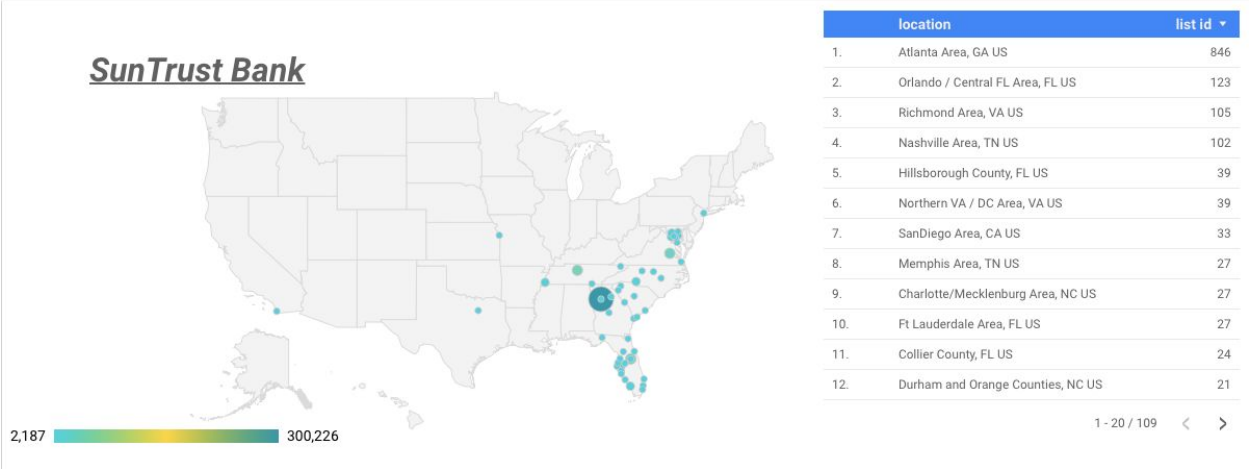
The above pie chart is used to visualize the percentage of job openings in Discover Financials. From this chart, we can analyze the number of job openings for each job post. For example, the above bank has the maximum job openings for Lead Cloud Engineer.



The above pie chart is used to visualize the percentage of job openings in Suntrust bank. From this chart, we can analyze that the maximum number of job openings are for Commercial Portfolio Manager.

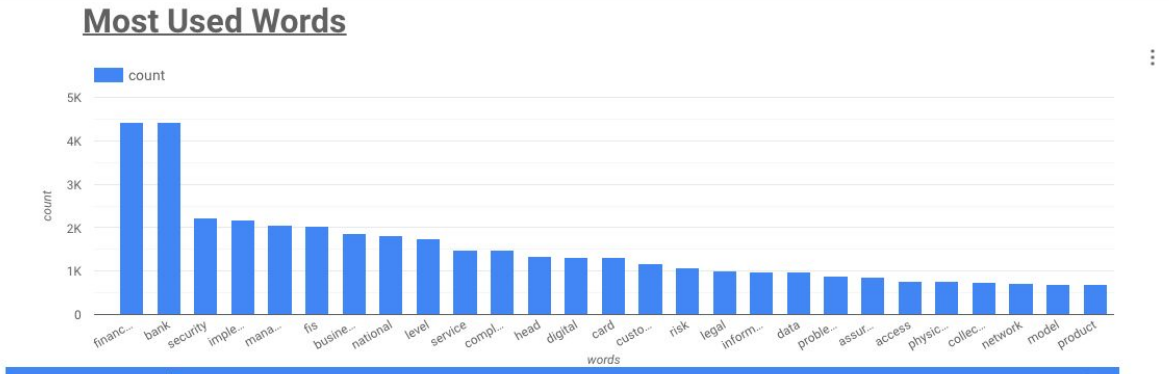
Job locations of Discover Financial and SunTrust





The above Geo maps are used to analyze the job openings at different locations. According to the Discover Geo map, we can say that the maximum job openings are in Illinois, Chicago and fewer job openings in the rest of the US.
Whereas for Suntrust Bank, we can see that the maximum job openings are in the east coast.

Word frequency bar graph:



	words	count
1.	financial	4,420
2.	bank	4,417
3.	security	2,233
4.	implementation	2,166
5.	management	2,057
6.	fis	2,027
7.	business	1,867
8.	national	1,809
9.	level	1,752

The above graph can be used to analyze the keywords that are important to the bank for hiring. We can analyze that financial, security, management are some of the important keywords that are most used by banks.

Conclusion

From this study, we can conclude that:

- SunTrust has more job openings than Discover Financials.
- Discover Financials has more job openings for Analyst and Developers while SunTrust has more job openings for bankers.
- Discover Financials has openings all over the country with most of it in Illinois, Chicago whereas Suntrust has openings mainly in the east coast.
- Both the banks are mainly interested in key skills like finance, security, management, FIS(Fidelity Information Services) for hiring employees.

Citations

https://github.com/
https://stackoverflow.com/
https://www.csdn.net