National Telecommunication Institute

USA JOB MARKET 2025

FINAL PROJECT

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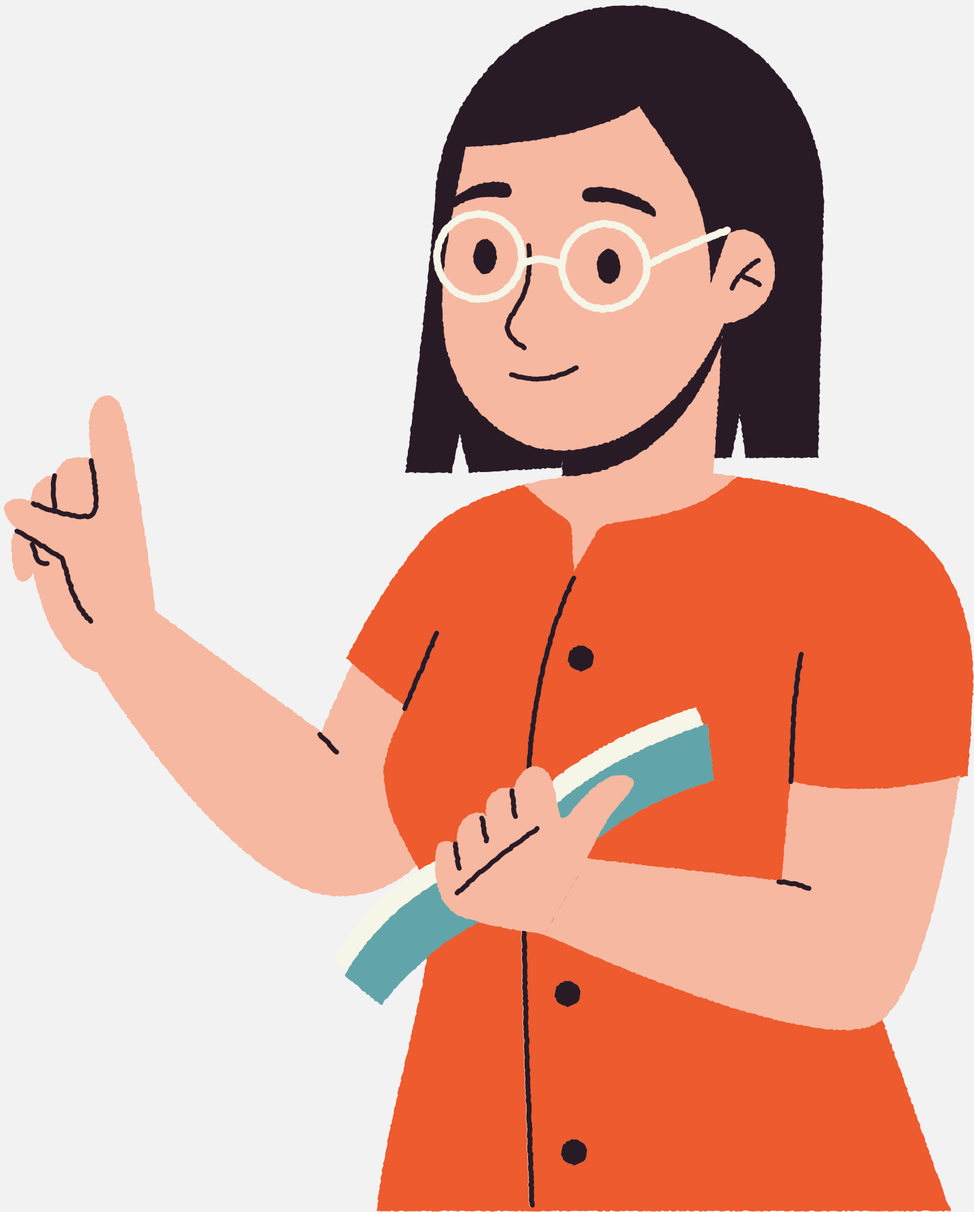
Overview

This dataset represents a modeled snapshot of the United States job market for the year 2025. It includes information related to salaries, hiring frequency, skill requirements, industry patterns, job role demand, and geographic workforce variations across major US states and metropolitan areas.

Overview about Important Columns:

Year	in 2025
month	Month of the year
quarter	Year quarter
season	Hiring season
job_title	Job role
industry	Job sector
experience_level	Required experience
education_requiment	Required education
salary_max_usd	Maximum salary
salary_variability	Salary fluctuation
salary_bracket	Salary range category



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number_of_openings	Job vacancies
hiring_trend	Hiring direction
is_high_demand	High-demand indicator
openings_level	Vacancy level
region	Job region
cost_region	Cost of living level
Remote work option	Remotely or on-site
job_market_pressure	Market pressure
city_salary_adjusted_index	Cost living

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1nd Insight

The U.S. job market in 2025 shows strong demand for skilled roles, with a significant portion of job openings classified as high-demand positions.

Hiring activity demonstrates noticeable seasonal patterns, with increased job openings during specific quarters, reflecting structured recruitment cycles.

In several metropolitan areas, average salaries do not fully align with the local cost of living, suggesting potential financial pressure on employees despite competitive pay levels.

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2nd Insight

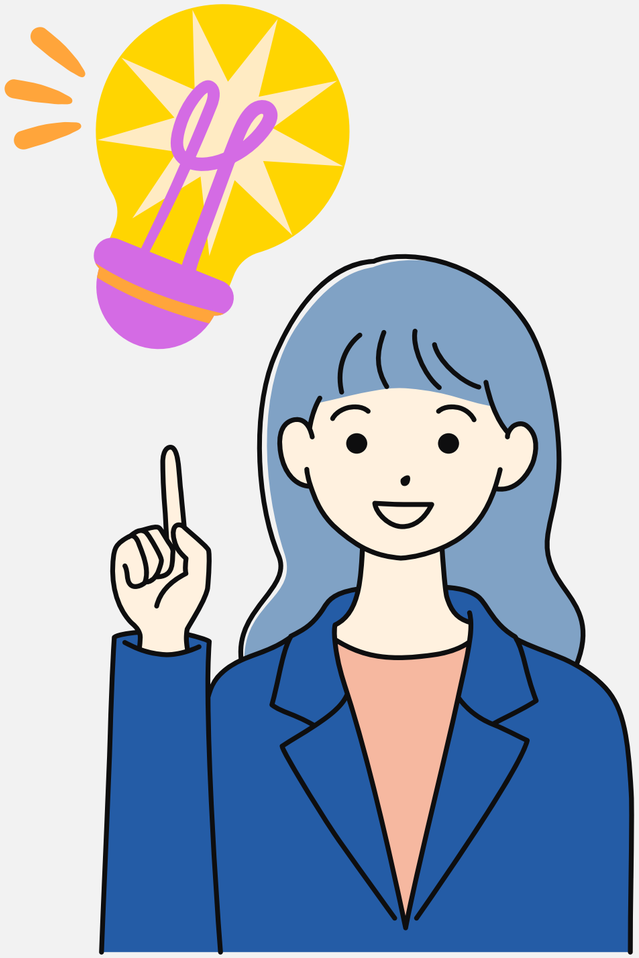
Remote job opportunities remain more prevalent in technology-driven roles, highlighting the continued adoption of flexible work models.

Metropolitan cities exhibit higher salary levels and job demand compared to non-metro regions, emphasizing the concentration of opportunities in urban areas.

3rd Audience

The analysis reveals that job demand, salary levels, and geographic factors are closely interconnected, providing valuable insights for job seekers, HR professionals, and policymakers.

1. HR professionals
2. Job sekkers
3. policymakers



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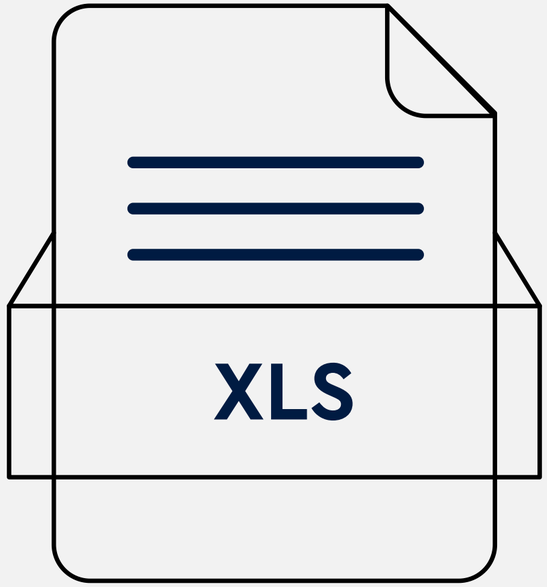

Tools

1. Excel
2. SQL
3. Python
4. Power bi

ExceL

-Delete unneeded Columns

-Check Data Type in power query

SQL

.Select
.agregation function
-Average
.group by
.Case
.Round
.Order by
.Distinct
.Having
.Group by

Data Overview

3	2025	12	Data Scientist	IT	Entry	73147	131711	102429	12	37	Down	Denver	West	Bachelor's	Part-time	Python,ML,Statistics
4	2025	9	Data Scientist	IT	Entry	71604	96352	83978	31	79	Up	Dallas	South	Master's	Contract	Python,ML,Statistics
5	2025	1	Software Engineer	IT	Senior	161155	282233	221694	26	87	Up	Los Angeles	West	Bachelor's	Full-time	Python,Java,SQL
6	2025	4	UX Designer	Design	Entry	51920	77662	64791	52	93	Up	Dallas	South	Bachelor's	Full-time	Figma,User Research
7	2025	9	Nurse	Healthcare	Mid	63204	134824	99014	18	65	Up	Washington DC	Northeast	Bachelor's	Part-time	Patient Care,Clinical
8	2025	12	UX Designer	Design	Mid	79695	154601	117148	56	92	Up	Boston	Northeast	Bachelor's	Full-time	Figma,User Research
9	2025	8	HR Manager	HR	Senior	140198	186434	163316	12	74	Up	San Francisco	West	Bachelor's	Full-time	Hiring,Compliance
10	2025	3	Business Analyst	Business	Mid	100450	162808	131629	12	58	Stable	Boston	Northeast	Master's	Contract	SQL,Modeling
11	2025	5	Accountant	Finance	Mid	53307	79919	66613	6	52	Stable	Houston	South	Bachelor's	Contract	Excel,Tax,GAAP
12	2025	2	Data Scientist	IT	Mid	168534	245828	207181	69	95	Up	Boston	Northeast	PhD	Full-time	Python,ML,Statistics
13	2025	6	DevOps Engineer	IT	Entry	81155	150931	116043	42	69	Up	Seattle	West	High School	Part-time	AWS,Docker,Kubernetes
14	2025	5	Customer Support	Services	Entry	28166	52862	40514	63	91	Up	New York	Northeast	Associate	Part-time	Communication,CRM
15	2025	8	UX Designer	Design	Mid	70452	152632	111542	16	77	Up	Los Angeles	West	Bachelor's	Contract	Figma,User Research
16	2025	2	UX Designer	Design	Mid	90427	173105	131766	25	68	Up	San Francisco	West	High School	Part-time	Figma,User Research
17	2025	10	Civil Engineer	Constructi...	Mid	63715	100279	81997	36	78	Up	Philadelphia	Northeast	Master's	Contract	AutoCAD,Site Management
18	2025	10	Nurse	Healthcare	Mid	64008	124884	94446	22	60	Stable	Washington DC	Northeast	Bachelor's	Full-time	Patient Care,Clinical
19	2025	1	Marketing Manager	Marketing	Senior	90606	206786	148696	12	95	Up	Houston	South	Master's	Contract	SEO,Campaigns
20	2025	2	DevOps Engineer	IT	Senior	118126	273808	195967	18	68	Up	Houston	South	Bachelor's	Full-time	AWS,Docker,Kubernetes
21	2025	7	Mechanical Engin...	Engineeri...	Entry	47661	105025	76343	81	95	Up	Miami	South	Bachelor's	Part-time	CAD,Design,Manufacturing
22	2025	6	Accountant	Finance	Mid	64241	115563	89902	4	56	Stable	Seattle	West	High School	Contract	Excel,Tax,GAAP
23	2025	4	Marketing Manager	Marketing	Mid	108166	200210	154188	41	95	Up	San Francisco	West	Associate	Part-time	SEO,Campaigns
24	2025	11	Marketing Manager	Marketing	Entry	52863	74289	63576	22	79	Up	Los Angeles	West	Master's	Part-time	SEO,Campaigns
25	2025	11	Accountant	Finance	Mid	53140	96820	74980	25	87	Up	Atlanta	South	Bachelor's	Part-time	Excel,Tax,GAAP
26	2025	4	Accountant	Finance	Entry	45629	76499	61064	21	74	Up	Miami	South	High School	Contract	Excel,Tax,GAAP

Data Overview

remote_availability	salary_range_usd	salary_variability	salary_bracket	salary_log_median	quarter	month_name	season	is_high_demand	openings_level	metro_city	cost_region	city_salary_adjuste...	job_market_pressure	competitiveness_score
0	35724	0.327346712350845	Medium	11.6003227233887	4	Nov	Autumn	1	High	1	High	136415	0.479452043771744	47.241096496582
1	46848	0.410371422767639	Medium	11.6453647613525	2	May	Spring	1	Medium	0	Low	102744	0.142857149243355	68.3142852783203
0	58564	0.57175213098526	Medium	11.5369348526001	4	Dec	Winter	0	Medium	0	Medium	112671.8984375	0.315789461135864	26.5684204101563
0	24748	0.294696241617203	Medium	11.338321685791	3	Sep	Autumn	1	High	0	Low	75580.203125	0.387499988079071	51.625
0	121078	0.54614919424057	High	12.3090581893921	1	Jan	Winter	1	High	1	Medium	243863.40625	0.295454531908035	66.6090927124023
1	25742	0.397308260202408	Medium	11.0789375305176	2	Apr	Spring	1	High	0	Low	58311.8984375	0.553191483020782	67.6936187744141
0	71620	0.723332047462463	Medium	11.5030269622803	3	Sep	Autumn	1	Medium	1	High	123767.5	0.272727280855179	48.4545440673828
0	74906	0.639413416385651	Medium	11.6712017059326	4	Dec	Winter	1	High	1	High	146435	0.602150559425354	63.9956970214844
1	46236	0.283107608556747	High	12.0034484863281	3	Aug	Summer	1	Medium	1	High	204145	0.159999996423721	67.0800018310547
0	62358	0.473740577697754	High	11.7877502441406	1	Mar	Spring	0	Medium	1	High	164536.25	0.203389838337898	44.3932189941406
0	26612	0.399501591920853	Medium	11.1066703796387	2	May	Spring	0	Medium	0	Low	59951.69921875	0.113207548856735	40.9735832214355
1	77294	0.373074740171433	High	12.2413530349731	1	Feb	Winter	1	High	1	High	258976.25	0.71875	73.5625
0	69776	0.601294338703156	Medium	11.6617250442505	2	Jun	Summer	1	High	1	High	145053.75	0.600000023841858	45.2000007629395
0	24696	0.609567046165466	Low	10.6094274520874	2	May	Spring	1	High	1	High	50642.5	0.68478262424469	58.2304344177246
1	82180	0.736762821674347	Medium	11.6221656799316	3	Aug	Summer	1	Medium	1	Medium	122696.203125	0.205128207802773	63.7897453308105
1	82678	0.627460777759552	High	11.7887907028198	1	Feb	Winter	1	High	1	High	164707.5	0.362318843603134	58.0753631591797
0	36564	0.445918738842011	Medium	11.3144502639771	4	Oct	Autumn	1	High	0	Low	73797.296875	0.455696195363998	55.8886070251465
0	60876	0.644558787345886	Medium	11.4557943344116	4	Oct	Autumn	1	High	1	High	118057.5	0.360655725002289	45.2786903381348
0	116180	0.78132563829422	High	11.9096660614014	1	Jan	Winter	1	Medium	0	Low	133826.40625	0.125	71.75
0	155682	0.794429659843445	High	12.1857070922852	1	Feb	Winter	1	Medium	0	Low	176370.296875	0.260869562625885	55.2782592773438
0	57364	0.751398265361786	Medium	11.2430047988892	3	Jul	Summer	1	High	0	Medium	83977.296875	0.84375	60.3125
0	51322	0.570866048336029	Medium	11.4064865112305	2	Jun	Summer	0	Low	1	High	112377.5	0.070175439119339	43.4596481323242
0	92044	0.59695953130722	High	11.9459342956543	2	Apr	Spring	1	High	1	High	192735	0.427083343267441	66.1458358764648
0	21426	0.337013959884644	Medium	11.0600070953369	4	Nov	Autumn	1	High	1	Medium	69933.6015625	0.275000005960464	51.8499984741211
0	43680	0.58255535364151	Medium	11.2249898910522	4	Nov	Autumn	1	High	0	Low	67482	0.284090906381607	61.6318168640137
1	30870	0.505535185337067	Medium	11.0196943283081	2	Apr	Spring	1	High	0	Medium	67170.3984375	0.280000001192093	56.8400001525879

Jobs & Industry

```
Select DISTINCT job_title From Job_Market
```

100 %

Results | Messages

	job_title
1	Mechanical Engineer
2	Product Manager
3	Business Analyst
4	Marketing Manager
5	Teacher
6	Sales Manager
7	DevOps Engineer
8	Accountant
9	Nurse
10	UX Designer
11	Customer Support
12	Data Scientist
13	Civil Engineer
14	Software Engineer
15	HR Manager

```
Select DISTINCT industry From Job_Market
```

100 %

Results | Messages

	industry
1	Education
2	Marketing
3	Sales
4	Services
5	Construction
6	Healthcare
7	Engineering
8	IT
9	HR
10	Business
11	Finance
12	Design

Jobs & Industry

```sql
Select job_title ,ROUND(Avg(competitiveness_score),1) as Average_competitive
From Job_Market group by job_title order by  Average_competitive DESC


Select job_title ,industry,ROUND(Avg(job_market_pressure*100),2)
as job_market_pressure From Job_Market group by job_title,industry
```

100 %

Results | Messages

	job_title	Average_competitive
1	Product Manager	58
2	Marketing Manager	57.8
3	Teacher	57.7
4	Nurse	57.7
5	Civil Engineer	57.7
6	HR Manager	57.6
7	Business Analyst	57.6
8	UX Designer	57.5

	job_title	industry	job_market_pressure
1	DevOps Engineer	IT	44.27
2	Civil Engineer	Construction	44.52
3	Sales Manager	Sales	44.34
4	Product Manager	IT	43.92
5	Accountant	Finance	44.84
6	Data Scientist	IT	45.55
7	Teacher	Education	44.35
8	UX Designer	Design	43.9
9	Marketing Man...	Marketing	44.58
10	Nurse	Healthcare	44.47
11	Mechanical Eng...	Engineering	44.74
12	Customer Supp...	Services	45.05
13	HR Manager	HR	45.5

```sql
SELECT
    CASE
        WHEN remote_availability = 0 THEN 'On Site'
        ELSE 'Remotely'
    END AS remote_type,
    ROUND(AVG(job_market_pressure*100), 2) AS job_market_pressure
FROM Job_Market
GROUP BY
    CASE
        WHEN remote_availability = 0 THEN 'On Site'
        ELSE 'Remotely'
    END;
```

100 %

Results | Messages

	remote_type	job_market_pressure
1	On Site	45.4
2	Remotely	43.53

Salary

```sql
Select job_title,ROUND(Avg(salary_max_usd),2) as Average_max_salary From Job_Market group by job_title order by Average_max_salary DESC


Select job_title,ROUND(Avg(salary_min_usd),2) as Average_min_salary From Job_Market group by job_title order by Average_min_salary DESC
```

100 %

Results | Messages

	job_title	Average_max_salary
1	Product Manager	222922
2	DevOps Engineer	189287
3	Data Scientist	185821
4	Software Engineer	179380
5	Marketing Manager	130657
6	Mechanical Engineer	129984
7	UX Designer	129529
8	Business Analyst	129190
9	Sales Manager	127060
10	HR Manager	125612
11	Civil Engineer	123650
12	Nurse	109201

	job_title	Average_min_salary
1	Product Manager	131678
2	DevOps Engineer	111215
3	Data Scientist	109860
4	Software Engineer	105300
5	Marketing Manager	76734
6	Mechanical Engineer	76685
7	UX Designer	76384
8	Business Analyst	76371
9	Sales Manager	74750
10	HR Manager	73394
11	Civil Engineer	72589
12	Nurse	64306

Salary

```sql
SELECT job_title,
       AVG(CAST(salary_max_usd AS DECIMAL(18,2))) AS avg_salary
FROM Job_Market
GROUP BY job_title
HAVING AVG(CAST(salary_max_usd AS DECIMAL(18,2))) <
       (SELECT AVG(CAST(salary_max_usd AS DECIMAL(18,2))) FROM Job_Market);
```

100 %

Results | Messages

	job_title	avg_salary
1	Mechanical Engineer	129984.812883
2	Business Analyst	129190.277114
3	Marketing Manager	130657.389020
4	Teacher	84535.005355
5	Sales Manager	127060.422256
6	Accountant	105218.800309
7	Nurse	109201.415103
8	UX Designer	129529.515625
9	Customer Support	61335.444172
10	Civil Engineer	123650.218063
11	HR Manager	125612.192651

```sql
Select job_title,industry,city,(salary_max_usd-city_salary_adjusted_index)
as surplus From Job_Market

SELECT
    job_title,
    industry,
    city,
    (salary_max_usd - city_salary_adjusted_index) AS surplus,
    CASE
        WHEN (salary_max_usd - city_salary_adjusted_index) < 0
            THEN 'Not suitable for living cost'
        ELSE 'Suitable for living cost'
    END AS living_cost_fit
FROM Job_Market;
```

100 %

Results | Messages

	job_title	industry	city	surplus
1	Data Scientist	IT	New York	-9421
2	Nurse	Healthcare	Houston	34840
3	Data Scientist	IT	Denver	19039.1015625
4	Data Scientist	IT	Dallas	20771.796875
5	Software Engineer	IT	Los Angeles	38369.59375
6	UX Designer	Design	Dallas	19350.1015625
7	Nurse	Healthcare	Washington DC	11056.5
8	UX Designer	Design	Boston	8166
9	HR Manager	HR	San Francisco	-17711

	job_title	industry	city	surplus	living_cost_fit
1	Data Scientist	IT	New York	-9421	Not suitable for living cost
2	Nurse	Healthcare	Houston	34840	Suitable for living cost
3	Data Scientist	IT	Denver	19039.1015625	Suitable for living cost
4	Data Scientist	IT	Dallas	20771.796875	Suitable for living cost
5	Software Engineer	IT	Los Angeles	38369.59375	Suitable for living cost
6	UX Designer	Design	Dallas	19350.1015625	Suitable for living cost
7	Nurse	Healthcare	Washingto...	11056.5	Suitable for living cost
8	UX Designer	Design	Boston	8166	Suitable for living cost
9	HR Manager	HR	San Franci...	-17711	Not suitable for living cost

Demand & Requirement

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```
Select DISTINCT job_title , skills_required From Job_Market
```

100 %

Results | Messages

	job_title	skills_required
1	Business Analyst	SQL,Modeling
2	HR Manager	Hiring,Compliance
3	Nurse	Patient Care,Clinical
4	Teacher	Teaching,Curriculum
5	Software Engineer	Python,Java,SQL
6	Marketing Manager	SEO,Campaigns
7	Data Scientist	Python,ML,Statistics
8	Civil Engineer	AutoCAD,Site Management
9	DevOps Engineer	AWS,Docker,Kubernetes
10	Customer Support	Communication,CRM
11	Sales Manager	Sales,CRM
12	Mechanical Engineer	CAD,Design,Manufacturing
13	Product Manager	Roadmap,Leadership
14	Accountant	Excel,Tax,GAAP
15	UX Designer	Figma,User Research

```
Select industry ,ROUND(Avg(number_of_openings),1) as Average_opening From Job_Market group by industry order by Average_opening DESC

Select job_title ,ROUND(Avg(number_of_openings),1) as Average_opening From Job_Market group by job_title order by Average_opening DESC
```

100 %

Results | Messages

	industry	Average_opening
1	HR	36
2	Business	35
3	Finance	35
4	Design	35
5	Education	35
6	Marketing	35
7	Sales	35
8	Services	35
9	Construction	35
10	Healthcare	35
11	Engineering	35
12	IT	35

	job_title	Average_opening
1	Data Scientist	36
2	HR Manager	36
3	Civil Engineer	35
4	Software Engineer	35
5	Mechanical Engineer	35
6	Product Manager	35
7	Business Analyst	35
8	Marketing Manager	35
9	Teacher	35
10	Sales Manager	35
11	DevOps Engineer	35
12	Accountant	35
13	Nurse	35
14	UX Designer	35
15	Customer Support	35

Demand & Requirement

```
Select job_title ,ROUND(Avg(competitiveness_score),1) as Average_competitive
From Job_Market group by job_title order by  Average_competitive DESC
```

100 %

Results | Messages

	job_title	Average_competitive
1	Product Manager	58
2	Marketing Manager	57.8
3	Teacher	57.7
4	Nurse	57.7
5	Civil Engineer	57.7
6	HR Manager	57.6
7	Business Analyst	57.6
8	UX Designer	57.5
9	Sales Manager	57.5
10	DevOps Engineer	57.5
11	Software Engineer	57.5
12	Data Scientist	57.5
13	Mechanical Engineer	57.4
14	Accountant	57.4
15	Customer Support	57.4

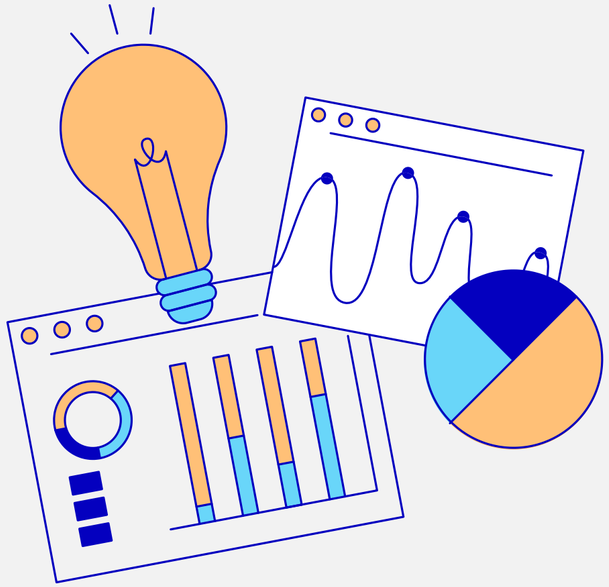
Python

-Cleaning
-Transformation
Colab Link

National Telecommunication Institute

Dashboard by Power Bi

Visualization



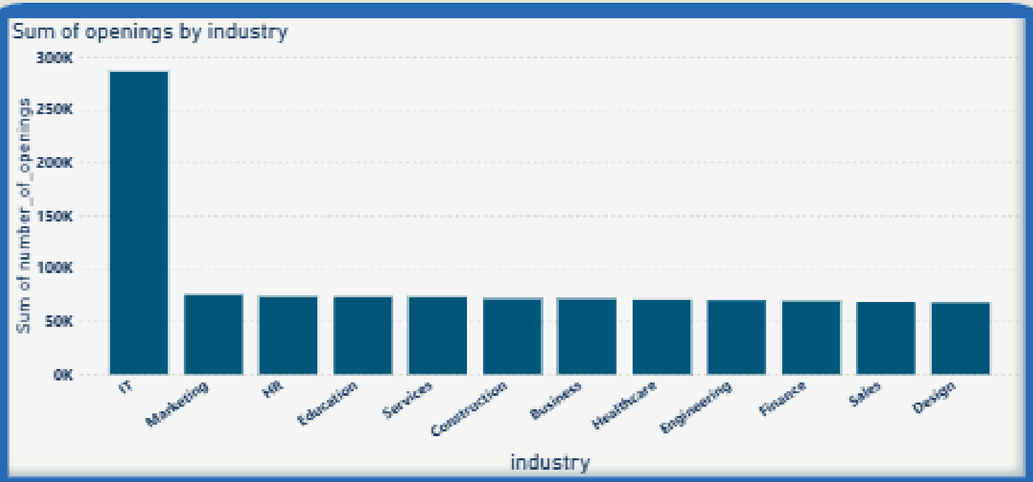
Job Market USA

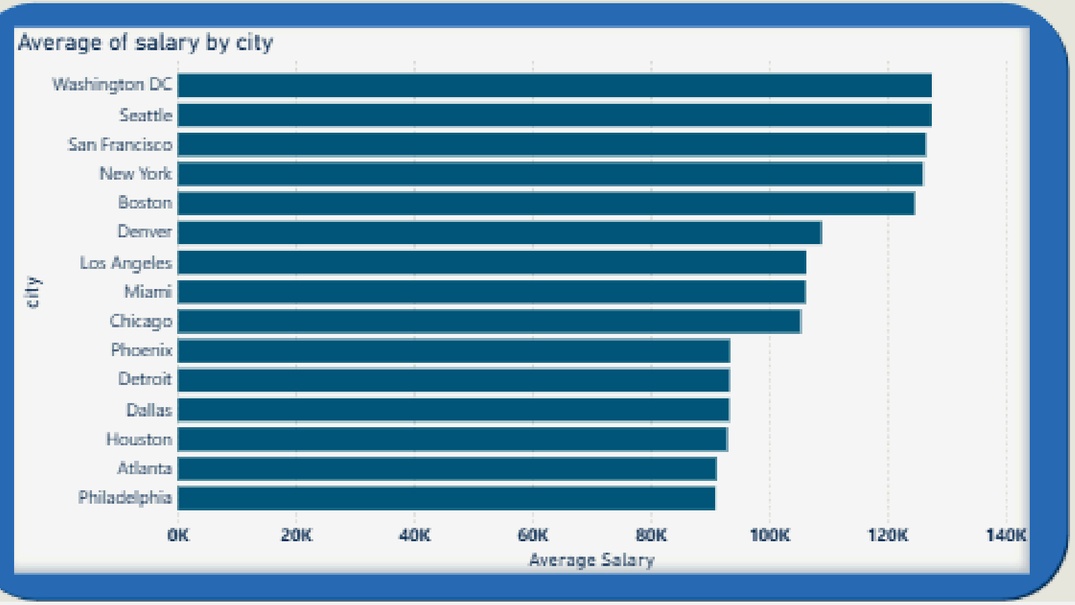
Overview | Salary Analysis | Requirements & Demand

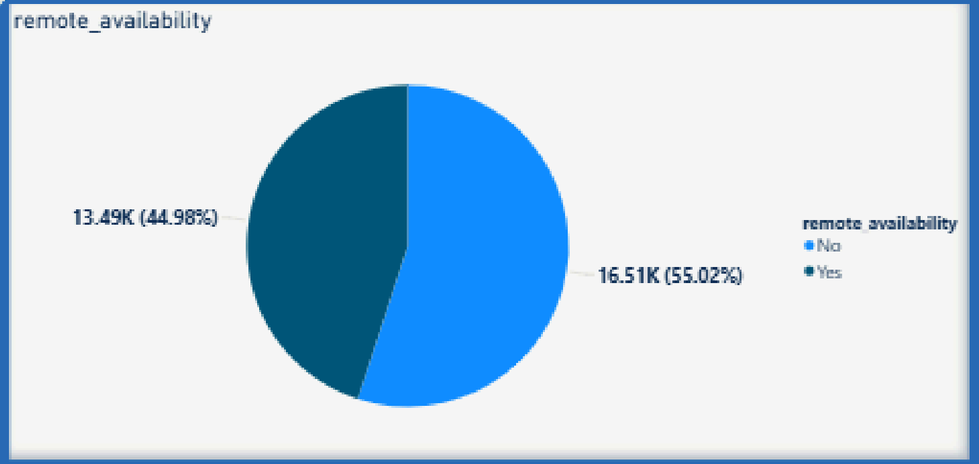
Average Salary	Demand	competitave	Total openings
108K	77%	58%	1M

job_title
- Accountant
- Business Analyst
- Civil Engineer
- Customer Support
- Data Scientist
- DevOps Engineer
- HR Manager
- Marketing Manag...
- Mechanical Engin...
- Nurse
- Product Manager
- Sales Manager
- Software Engineer
- Teacher
- UX Designer

industry
- Business
- Construction
- Design
- Education
- Engineering
- Finance
- Healthcare
- HR
- IT
- Marketing
- Sales
- Services







Overview | Salary Analysis | Requirements & Demand

job_title
- Accountant
- Business Analyst
- Civil Engineer
- Customer Support
- Data Scientist
- DevOps Engineer
- HR Manager
- Marketing Manager
- Mechanical Engineer
- Nurse
- Product Manager
- Sales Manager
- Software Engineer
- Teacher
- UX Designer

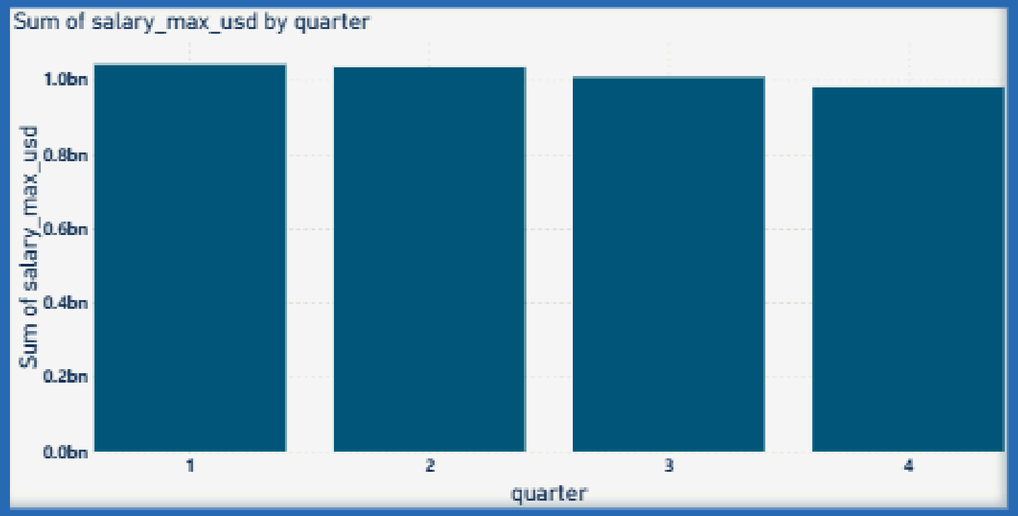
city
- Atlanta
- Boston
- Chicago
- Dallas
- Denver
- Detroit
- Houston
- Los Angeles
- Miami
- New York
- Philadelphia
- Phoenix
- San Francisco
- Seattle
- Washington DC

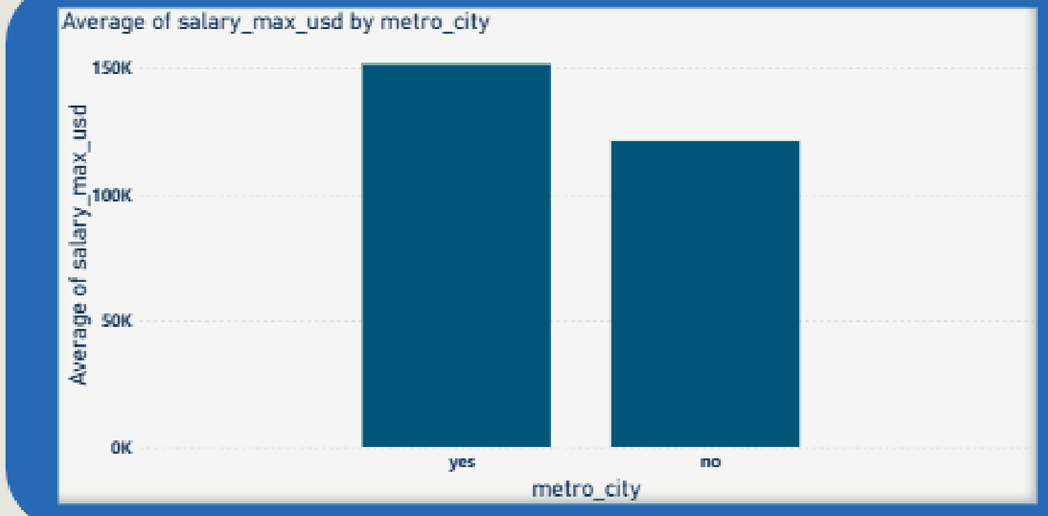
experience_lev...
- Entry
- Mid
- Senior

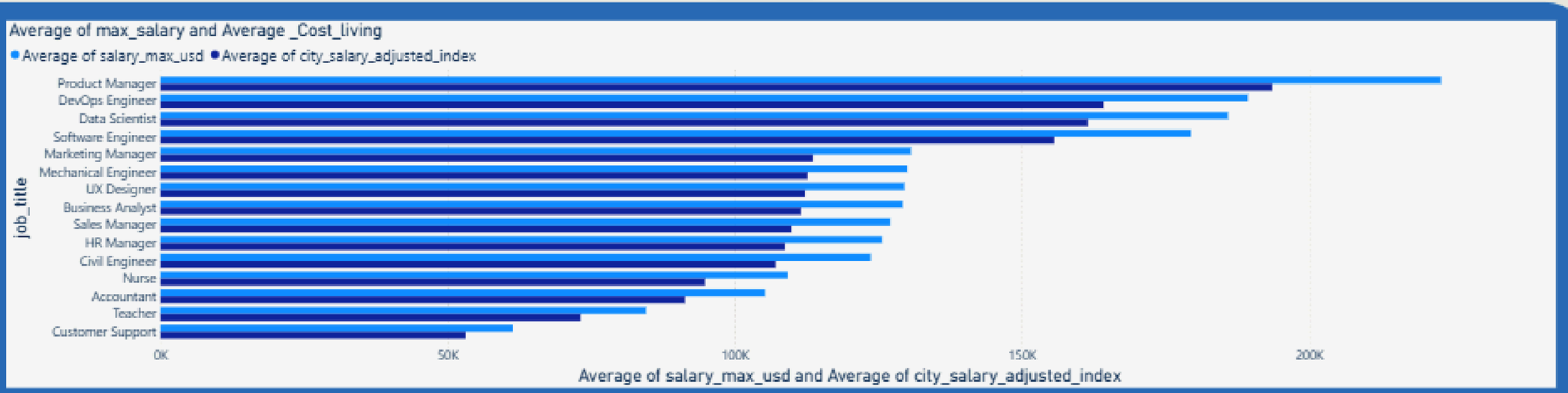
Average of max_salary
$135.6K

Average of min_salary
$79.8K

Salary Surplus
18.07K





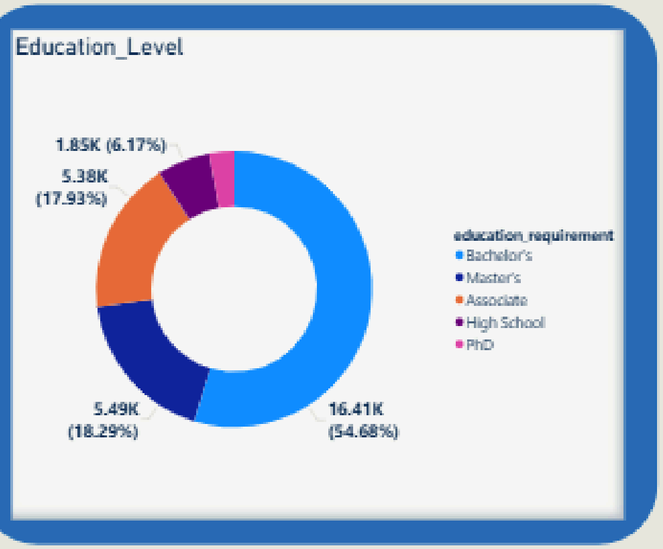


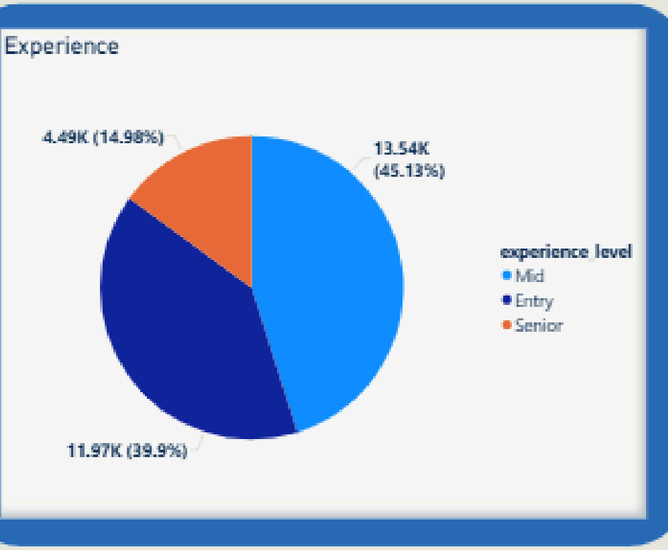
Overview | Salary Analysis | Requirements & Demand

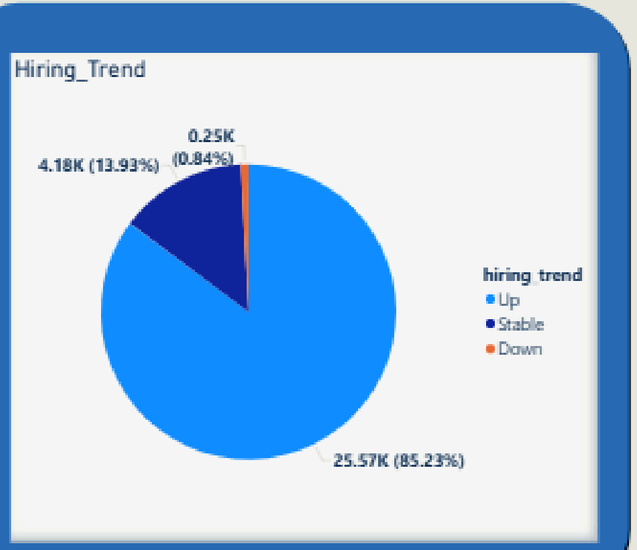
job_title
- Accountant
- Business Analyst
- Civil Engineer
- Customer Support
- Data Scientist
- DevOps Engineer
- HR Manager
- Marketing Manager
- Mechanical Engineer
- Nurse
- Product Manager
- Sales Manager
- Software Engineer
- Teacher
- UX Designer

city
- Atlanta
- Boston
- Chicago
- Dallas
- Denver
- Detroit
- Houston
- Los Angeles
- Miami
- New York
- Philadelphia
- Phoenix
- San Francisco
- Seattle
- Washington DC

job_title	skills_required
Accountant	Excel,Tax,GAAP
Business Analyst	SQL,Modeling
Civil Engineer	AutoCAD,Site Managemer
Customer Support	Communication,CRM
Data Scientist	Python,ML,Statistics
DevOps Engineer	AWS,Docker,Kubernetes
HR Manager	Hiring,Compliance
Marketing Manager	SEO,Campaigns
Mechanical Engineer	CAD,Design,Manufacturin
Nurse	Patient Care,Clinical
Product Manager	Roadmap,Leadership
Sales Manager	Sales,CRM
Software Engineer	Python,Java,SQL
Teacher	Teaching,Curriculum
UX Designer	Figma,User Research







What I learned?

.Create important measure by DAX help me better understand my Business

-Average Salary

-Surplus frome salary According to the of standard living

.It helped me think more deeply about business so i can get useful insight

Thank you

Any questions?!