Rolls, skills and income for Jobs in 2023

The aim of this document is to provide context to the project I worked on.

Since I am interested in technology positions, specifically as a data analyst or business analyst, I found a 2023 database with this information. It is based in America (with additional data from Spain), but it will serve our purpose for the analysis. The data is in .CSV format.

We will use VSCode to perform the analysis, connected to a PostgreSQL database that we will create. Due to the project's scope, this document will serve as a report, showing the results and conclusions. For more information on the code, it will be available in the repository.

1. CREATION OF THE DATABASE

The first thing we need to do is connect to PostgreSQL and create the database, followed by creating the tables and adding the data. We will create four tables.

2. DATA ANALYSIS

We posed several questions that we aimed to answer regarding the skills and salaries related to the role of a data analyst. However, there are more roles listed in the tables. Therefore, we will consider them in relation to the data analyst role.

- **Highest-Paid Job**

  In general, we found that these are the 10 highest-paid jobs.

job_id	salary_year_avg	job_title	job_location	job_country	company_name
177779	960000.0	Data Scientist	Madison, SD	United States	East River Electric Power Cooperative, Inc.
1008448	890000.0	Senior Data Scientist	Pretoria, South Africa	South Africa	MSP Staffing LTD
226942	650000.0	Data Analyst	Anywhere	India	Mantys
551617	585000.0	Geographic Information Systems Analyst - GIS Analyst	New York, NY	United States	ReServe
40145	550000.0	Staff Data Scientist/Quant Researcher	Anywhere	United States	Selby Jennings
223758	525000.0	Hybrid - Data Engineer - Up to $600k	New York, NY	United States	Durlston Partners
1714768	525000.0	Staff Data Scientist - Business Analytics	Anywhere	United States	Selby Jennings
327496	475000.0	Senior Data Scientist	Anywhere	United States	Glocomms
1495652	463500.0	VP Data Science & Research	Menlo Park, CA	United States	WhatsApp
730717	450000.0	Data Engineer (L4) - Games	New York, NY	Sudan	Netflix

  However, we want to delve deeper by specifically analyzing remote positions and data analyst roles.

job_id	salary_year_avg	job_title	job_location	job_country	company_name
Filter...	Filter...	Filter...	Filter...	Filter...	Filter...
226942	650000.0	Data Analyst	Anywhere	India	Mantys
547382	336500.0	Director of Analytics	Anywhere	United States	Meta
552322	255829.5	Associate Director- Data Insights	Anywhere	United States	AT&T
99305	232423.0	Data Analyst, Marketing	Anywhere	United States	Pinterest Job Advertisements
1021647	217000.0	Data Analyst (Hybrid/Remote)	Anywhere	United States	Uclahealthcareers
168310	205000.0	Principal Data Analyst (Remote)	Anywhere	United States	SmartAsset
731368	189309.0	Director, Data Analyst - HYBRID	Anywhere	United States	Inclusively
310660	189000.0	Principal Data Analyst, AV Performan...	Anywhere	United States	Motional
1749593	186000.0	Principal Data Analyst	Anywhere	United States	SmartAsset
387860	184000.0	ERM Data Analyst	Anywhere	United States	Get It Recruit - Information Te...

- **Skills for These Highest-Paid Jobs**

We can see that data analyst roles demand proficiency in these programs. Specifically, 100% of them require SQL, followed by Python. Data scientist roles are higher paid but require skills such as Java, Python, or C++. Data analyst positions are less remunerated but require different skills.

However, it is surprising that the highest-paid jobs do not seek candidates with visualization skills such as Tableau or Power BI.

job_id	salary_year_avg	job_title	company_name	skills
Filter...	Filter...	Filter...	Filter...	Filter...
552322	255829.5	Associate Director- Data Insights	AT&T	sql
552322	255829.5	Associate Director- Data Insights	AT&T	python
552322	255829.5	Associate Director- Data Insights	AT&T	r
552322	255829.5	Associate Director- Data Insights	AT&T	azure
552322	255829.5	Associate Director- Data Insights	AT&T	databricks
552322	255829.5	Associate Director- Data Insights	AT&T	aws
552322	255829.5	Associate Director- Data Insights	AT&T	pandas
552322	255829.5	Associate Director- Data Insights	AT&T	pyspark
552322	255829.5	Associate Director- Data Insights	AT&T	jupyter
552322	255829.5	Associate Director- Data Insights	AT&T	excel

- **Most In-Demand Skills**

While we previously noted that the highest-paid jobs did not require visualization programs, we now find that the most in-demand programs are SQL, Python, Excel, Power BI, and Tableau. Therefore, these programs do appear in this context. In this case, we have filtered again for data analyst roles.

skills	demand_count
Filter...	Filter...
sql	374
python	238
excel	210
power bi	204
tableau	181

- **Which Skills Pay More**

We found that there are several skills that will result in higher pay if mastered.

skills	avg_salary
Filter...	Filter...
pyspark	208172.25
bitbucket	189154.50
couchbase	160515.00
watson	160515.00
datarobot	155485.50
gitlab	154500.00
swift	153750.00
jupyter	152776.50
pandas	151821.33
elasticsearch	145000.00
golang	145000.00
numpy	143512.50
databricks	141906.60
linux	136507.50
kubernetes	132500.00

- **What to Start Studying When Beginning in the World of Data Analysis?**

We found that when starting out, you should specialize in SQL, Excel, and Tableau. In the future, you can add Python skills to complete your stack, but certainly, the first three are essential.

skill_id	skills	demand_count
Filter...	Filter...	Filter...
0	sql	398
181	excel	256
1	python	236
182	tableau	230
5	r	148
183	power bi	110
186	sas	63
7	sas	63
196	powerpoint	58
185	looker	49
188	word	48
80	snowflake	37
79	oracle	37
61	sql server	35
74	azure	34

3. CONCLUSION

We have seen that, specifically as a data analyst, we will need to master SQL, Excel, and a visualization program like Tableau or Power BI. Once these are mastered, we should focus on learning programming languages such as Python or R. Based on the analysis, it is indifferent which one is learned first. However, Python tends to be in higher demand.

Although Python appears before visualization programs in terms of importance, it is also more complex. From my perspective, it is better to leave it for later and first establish a solid foundation with the other skills.

Once you have learned the basics, you could work as a data or business analyst. As we have seen, the salaries for these roles are lower than those for data scientists, but they are still quite good.