

Peer-graded Assignment: Peer-graded Assignment

You passed!

Congratulations. You earned 50 / 50 points. Review the feedback below and continue the course when you are ready. You can also help more peers by reviewing their submissions.

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Final Assignment - IBM Data Analyst Capstone Project

Submitted on November 25, 2023

[Shareable Link](#)**PROMPT**

Task 1: Upload the completed final presentation in pdf format that you created as a part of the final assignment in module 6.

Presentation - Final Assignment - IBM Data Analyst Capstone Project - Vincent Pereira
[Presentation - Final Assignment - IBM Data Analyst Capstone Project - Vincent Pereira](#)

Final Assignment:- Present Your Findings: -
You have analyzed the data in the previous modules, and now it is time to demonstrate your storytelling skills. -In this module, you will create a compelling story that helps to clarify your analysis in an easy-to-understand presentation.

RUBRIC

Has the learner uploaded the completed pdf file named DataAnalystPresentation.pdf and can you open it?

- 0 points
The learner has not uploaded their presentation as a pdf file.
- 1 point SS
The file has been successfully uploaded and can be opened.

PROMPT

Task 2: Fill in the title slide with appropriate title for your presentation, your name and date.

Presentation on Analysis of Technology**Skills and Emerging Trends**

- **Vincent S. Pereira**

Date: 22nd November 2023

**RUBRIC**

Has the learner correctly filled in the Title slide?

- 0 points
The title slide does not contain details like Title of the report, Name of the presenter and date
- 1 point
The title slide does not contains all details
- 2 points**
The title slide contains all details

SS

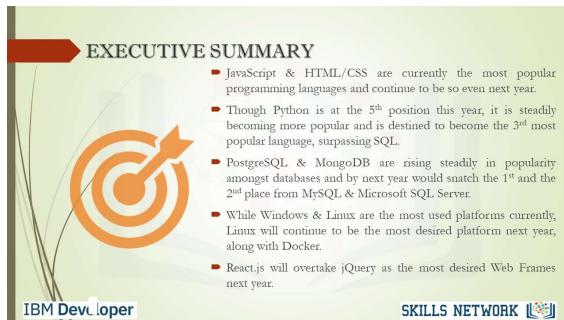
PROMPT

Task 3: Fill in the Executive Summary with relevant bullet points.

Executive Summary:**RUBRIC**

Has the learner correctly filled in the Executive Summary slide?

- JavaScript & HTML/CSS are currently the most popular programming languages and continue to be so even next year.
- Though Python is at the 5th position this year, it is steadily becoming more popular and is destined to become the 3rd most popular language, surpassing SQL.
- PostgreSQL & MongoDB are rising steadily in popularity amongst databases and by next year would snatch the 1st and the 2nd place from MySQL & Microsoft SQL Server..
- While Windows & Linux are the most used platforms currently, Linux will continue to be the most desired platform next year, along with Docker.
- React.js will overtake jQuery as the most desired Web Frames next year.



The slide features a large orange target icon with an arrow hitting the bullseye, set against a light green background with wavy lines. The title "EXECUTIVE SUMMARY" is in bold capital letters. Below the title is a bulleted list of six points, identical to the ones listed above. The bottom left corner has the "IBM Developer" logo, and the bottom right corner has the "SKILLS NETWORK" logo with a small globe icon.

- JavaScript & HTML/CSS are currently the most popular programming languages and continue to be so even next year.
- Though Python is at the 5th position this year, it is steadily becoming more popular and is destined to become the 3rd most popular language, surpassing SQL.
- PostgreSQL & MongoDB are rising steadily in popularity amongst databases and by next year would snatch the 1st and the 2nd place from MySQL & Microsoft SQL Server..
- While Windows & Linux are the most used platforms currently, Linux will continue to be the most desired platform next year, along with Docker.
- React.js will overtake jQuery as the most desired Web Frames next year.

- 0 points
The executive summary is blank
- 1 point
The executive summary Slide contains at least two valid bullet points.
- 2 points
The executive summary Slide contains at least three valid bullet points.
- 3 points
The executive summary Slide contains at least four valid bullet points.

SS

PROMPT

Task 4: Fill in the Introduction slide with details like, what is this report about, who is the report for, what will a reader gain by reading through this report.

Introduction:

- The goal of this exercise is to analyse the current and the future trends in the software development market.
- The analysis will assist developers to understand which programming languages, databases, web frameworks and platforms are being used currently and whether they would still remain popular in the future.
- It will help developers to identify which skills they should upgrade, so as to be future ready.
- This report will understand the demographics, like, age, gender, education level, salaries, location, etc. of the professionals working in the technology sector.
- The data has been collected from various sources like, Stack Overflow Survey, GitHub job postings, etc.

RUBRIC

Has the learner correctly filled in the Introduction slide?

- 0 points
The introduction slide is missing or blank
- 1 point
The introduction slide does have all the details like, what is this report about.
- 2 points
The introduction slide has the details like, what is this report about and who is the report for.

The introduction slide has the following content:

INTRODUCTION

- The goal of this exercise is to analyse the current and the future trends in the software development market.
- The analysis will assist developers to understand which programming languages, databases, web frameworks and platforms are being used currently and whether they would still remain popular in the future.
- It will help developers to identify which skills they should upgrade, so as to be future ready.
- This report will understand the demographics like, age, gender, education level, salaries, location, etc. of the professionals working in the technology sector.
- The data has been collected from various sources like, Stack Overflow Survey, GitHub job postings, etc.

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**3 points**

SS

The introduction slide has the details like, what is this report about, who is the report for, and what will a reader gain by reading through this report

PROMPT

Task 5: Fill in the Methodology slide with details like, what data sources were used, how was the data collected.

Methodology:**RUBRIC**

Has the learner correctly filled in the Methodology slide?

- Data Collection: Data is collected through various sources like, Stack Overflow Surveys, etc. using APIs, Web Scrapping and data provided by IBM.
- Data Wrangling: Finding Duplicates and Removing them, finding Missing values and Imputing them, Normalising Data, etc.
- Exploratory Data Analysis: Examining Distribution of Data, identifying & removing Outliers, understanding the correlation between different features in the dataset, etc.
- Data Visualisation: Creating various charts and graphs by using python libraries like, Matplotlib, Seaborn, etc.
- Building Dashboards: Using Data Analytics platforms like, IBM Cognos, Tableau, Power BI, etc.
- Presenting the Findings



- 0 points
The Methodology slide does not mention data collection methods or data sources
- 1 point
The Methodology slide talks about one of data collection methods or data sources
- 2 points SS
The Methodology slide talks about data collection methods and data sources

PROMPT

Task 6: Fill in the Programming Languages Trends slide with bar charts of the top 5 programming languages for current year and future year.

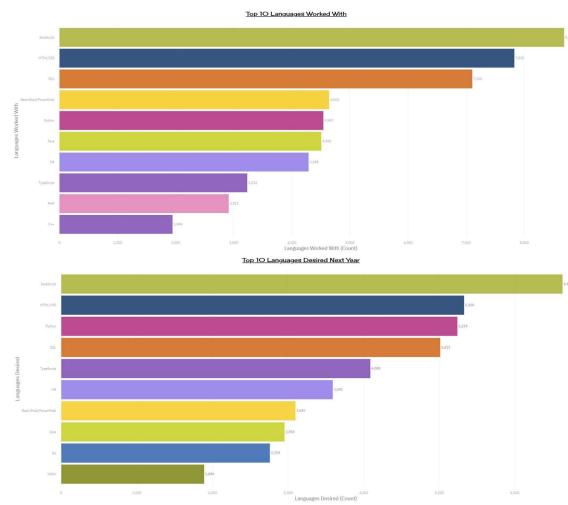
Programming Languages Trends:

- This slide has two Bar Charts.
- The first chart is for the 'Top 10 Languages Worked With', while the second chart is for the 'Top 10 Languages Desired Next Year'.
- For the first chart, the 'Bars', 'Length' and 'Colour' fields of the Bar Chart has been populated with the 'LanguageWorkedWith' field. It has been sorted in 'Descending' order and each bar shows the value labels.
- For the second chart, the 'Bars', 'Length' and 'Colour' fields of the Bar Chart has been populated with the 'LanguageDesireNextYear' field. It has been sorted in 'Descending' order and each bar shows the value labels.
- For both the charts, 'no value' has been filtered.

RUBRIC

Has the learner filled in the Programming Languages Trends slide with bar charts of the top 10 programming languages for current year and future year.

- 0 points
The slide Programming Languages Trends is missing or empty.
- 1 point
The slide Programming Languages Trends contains one of the bar charts for the current year or future year
- 2 points
The slide Programming Languages Trends contains both the bar charts for the current year and future year



3 points

The slide Programming Languages Trends contains both the bar charts for the current year and future year and the charts have proper label and title.

4 points

SS

The slide Programming Languages Trends contains both the bar charts for the current year and future year and the charts have proper label and title, and are sorted in descending order.

PROMPT

Task 7: Fill in the Programming Languages Trends - Findings and Implications slide.

Findings:

RUBRIC

Has the learner filled in the Programming Languages Trends - Findings and Implications slide?

- JavaScript and HTML/CSS will retain their popularity next year and rank 1st and 2nd respectively.
- Python and TypeScript will rise in popularity next year, wherein Python will become more popular than SQL.
- SQL will continue to be popular next year and will remain in the Top 5 Programming Languages.
- Go and Kotlin have moved in the Top 10, while PHP and C++ are out of the Top 10 list.
- Bash/Shell/PowerShell and Java have declined in popularity as compared to the current year.

Implications:

- JavaScript, HTML/CSS and TypeScript, which are Web Development programming languages are in high demand.
- Due to the low Learning Curve and the increase in demand for Machine Learning and Deep Learning skills, Python is rising in popularity.
- Data Scientists, Data Engineers, Business Analysts and Big Data Companies are still using SQL.
- Languages like C++ and PHP are becoming less popular due to its high Learning Curve and limited usability.

- 0 points
The Programming Languages Trends - Findings and Implications slide, is missing or contains no findings & implications
- 1 point
The Programming Languages Trends - Findings and Implications slide contains at least one finding or implication
- 2 points
The Programming Languages Trends - Findings and Implications slide contains at least two findings and implications
- 3 points
The Programming Languages Trends - Findings and Implications slide contains at least three findings and implications
- 4 points SS
The Programming Languages Trends - Findings and Implications slide contains at least four findings and implications

The slide has a green header bar with the text "PROGRAMMING LANGUAGE TRENDS: FINDINGS & IMPLICATIONS". Below the header, there are two sections: "Findings:" and "Implications:". The "Findings:" section lists several programming languages and their projected popularity. The "Implications:" section discusses the impact of these trends on various professionals and industries. Logos for IBM Developer and SKILLS NETWORK are at the bottom.

Findings:

- JavaScript and HTML/CSS will retain their popularity next year and rank 1st and 2nd respectively.
- Python and TypeScript will rise in popularity next year, wherein Python will become more popular than SQL.
- SQL will continue to be popular next year and will remain in the Top 5 Programming Languages.
- Go and Kotlin have moved in the Top 10, while PHP and C++ are out of the Top 10 list.
- Bash /Shell/ PowerShell and Java have declined in popularity as compared to the current year.

Implications:

- JavaScript, HTML/CSS and TypeScript, which are Web Development programming languages are in high demand.
- Due to the low Learning Curve and the increase in demand for Machine Learning and Deep Learning skills, Python is rising in popularity.
- Data Scientists, Data Engineers, Business Analysts and Big Data Companies are still using SQL.
- Languages like C++ and PHP are becoming less popular due to its high Learning Curve and limited usability.

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PROMPT

Task 8: Fill in the Database Trends slide with bar charts of the top 10 databases for current year and future year.

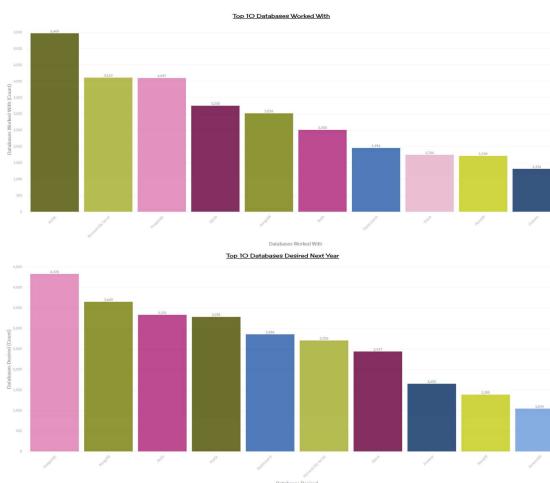
Database Trends:

- This slide has two Column Charts.

RUBRIC

Has the learner filled in the Programming Languages Trends slide with bar charts of the top 10 databases for current year and future year.

- The first chart is for the 'Top 10 Databases Worked With', while the second chart is for the 'Top 10 Databases Desired Next Year'.
- For the first chart, the 'Bars', 'Length' and 'Colour' fields of the Bar Chart has been populated with the 'DatabaseWorkedWith' field. It has been sorted in 'Descending' order and each column shows the value labels.
- For the second chart, the 'Bars', 'Length' and 'Colour' fields of the Bar Chart has been populated with the 'DatabaseDesireNextYear' field. It has been sorted in 'Descending' order and each column shows the value labels.
- For both the charts, 'no value' has been filtered.



- 0 points
The slide Database Trends is missing or empty.
- 1 point
The slide Database Trends contains one of the bar charts for current year or future year
- 2 points
The slide Database Trends contains both the bar charts for current year and future year
- 3 points
The slide Database Trends contains both the bar charts for current year and future year and the charts have proper label and title.
- 4 points
The slide Database Trends contains both the bar charts for current year and future year and the charts have proper label and title, and are sorted in descending order. SS

PROMPT

Task 9: Fill in the Database Trends - Findings and Implications slide.

Findings:

- PostgreSQL & MongoDB are rising steadily in popularity amongst databases and by next year, they will replace MySQL & Microsoft SQL Server from their current positions.
- The popularity of Oracle has declined so much that it will be out of the Top 10 Databases next year.
- Oracle will be replaced by DynamoDB by the next year.
- Redis and Elasticsearch are rising in popularity.

Implications:

- Open-Source databases seem to be rising in popularity, especially due to their large support network.
- With the increase in unstructured and non-relational data, the popularity of NoSQL databases is rising.

RUBRIC

Has the learner filled in the Database Trends - Findings and Implications slide.?

- 0 points
The Database Trends - Findings and Implications slide, is missing or contains no findings & implications
- 1 point
The Database Trends - Findings and Implications slide contains at least one finding or implication
- 2 points
The Database Trends - Findings and Implications slide contains at least two findings and implications

- The future technology trend shows that a developer, data scientist, business analyst, etc. needs to have good knowledge of both SQL and NoSQL technologies.

**DATABASE TRENDS:
FINDINGS & IMPLICATIONS**

Findings:

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- The popularity of Oracle has declined so much that it will be out of the Top 10 Databases next year.
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- Redis and Elasticsearch are rising in popularity.

Implications:

- Open-Source databases seem to be rising in popularity, especially due to their large support network.
- With the increase in unstructured and non-relational data, the popularity of NoSQL databases is rising.
- The future technology trend shows that a developer, data scientist, business analyst, etc. needs to have good knowledge of both SQL and NoSQL technologies.

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3 points

The Database Trends -
Findings and Implications slide
contains at least three findings
and implications

4 points

SS

**The Database Trends -
Findings and Implications
slide contains at least four
findings and implications**

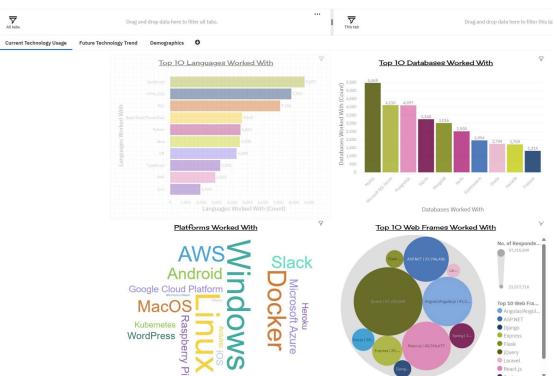
PROMPT

Task 10: In the Dashboard section, include the screen shots of the 3 tabs and the permanent shareable link of Cognos dashboard, that you created in module 5.

RUBRIC

Dashboard:-**Permanent link of the read-only view of Cognos Dashboard:**

- <https://dataplatform.cloud.ibm.com/dashboards/37ea031b-c7b3-43df-88fb-7a3df263e237/view/4e35d57838b12fdf74edc0e407992f577e662154b1bb8b05d3807b495a697097f0611597c8284f5b88430663f1e9115fc1>

Charts:**• Current Technology Usage:****• Future Technology Trend:**

Has the learner included the screen shots of 3 tabs and the permanent shareable link of Cognos dashboard?



0 points

The Dashboard section has no link to Cognos dashboard and screen shots are missing.



The Dashboard section has a link to Cognos and the link is working, and screen shots are missing.



The Dashboard section has a link to Cognos and the link is working, and contains screen shot of 1 tab.



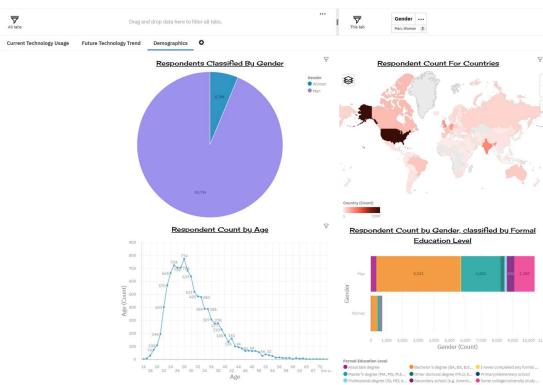
The Dashboard section has a link to Cognos and the link is working, and contains screen shots of 2 tabs.



The Dashboard section has a link to Cognos and the link is working, and contains screen shots of 3 tabs.

SS

- **Demographics:**



PROMPT

Task 11: In the discussion section, fill in the overall findings and implications slide.

Findings:

- Most of the programming jobs are concentrated in countries like USA, Europe and India.

RUBRIC

Has the learner filled in the overall findings and implications in the discussion section?

- There is a major gap in gender pay, with men earning more than the women. More than 93% of the people in the field of technology are Men.
- Maximum number of people working in technology are in the Age group of 24 to 30 years.
- Maximum number of the technology job holders have a Bachelor's degree, followed by those with a Master's degree.
- Most of the respondents want to learn JavaScript, HTML/CSS, Python, PostgreSQL, MongoDB, React.js, Linux and Docker in the next year.

Implications:

- Programming Languages like Python, that are advanced and yet easy to learn are becoming more popular.
- Developers are losing interest in programming languages like Java and C++, as they have a very high learning curve and the complex jobs managed by them can now easily be done using simpler languages.
- With the rise in big, unstructured & non-relational data, the popularity of SQL and NoSQL is rising by the day.
- Cloud based services are now the preferred choice for many companies as it drastically reduces the infrastructure and maintenance cost.

- 0 points
The overall findings and implications slide is missing or contains no findings & implications
- 1 point
The overall findings and implications slide contains at least one finding or implication
- 2 points
The overall findings and implications slide contains at least two findings and implications
- 3 points
The overall findings and implications slide contains at least three findings and implications
- 4 points SS
The overall findings and implications slide contains at least four findings and implications

- More countries need to provide trainings in technology and also create an appropriate eco system for the same.

OVERALL FINDINGS & IMPLICATIONS

Findings:

- Most of the programming jobs are concentrated in countries like USA, Europe and India.
- There is a major gap in gender pay, with men earning more than the women.
- More than 93% of the people in the field of technology are Men.
- Maximum number of people working in technology are in the Age group of 24 to 30 years.
- Maximum number of the technology job holders have a Bachelor's degree, followed by those with a Master's degree.
- Most of the respondents want to learn JavaScript, HTML/CSS, Python, PostgreSQL, MongoDB, React.js, Linux and Docker in the next year.

Implications:

- Programming Languages like Python, that are advanced and yet easy to learn are becoming more popular.
- Developers are losing interest in programming languages like Java and C++, as they have a very high learning curve and the complex jobs managed by them can now easily be done using simpler languages.
- With the rise in big unstructured & non-relational data, the popularity of SQL and NoSQL is rising by the day.
- Cloud based services are now the preferred choice for many companies as it drastically reduces the infrastructure and maintenance cost.
- More countries need to provide trainings in technology and also create an appropriate eco system for the same.

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PROMPT

Task 12: Fill in the Conclusion slide with the conclusions you have arrived at in form of bullet points.

Conclusion:

- The analysed data provided many insights into the current & the future trends in technology.
- It also provided insights into technologies that were out of trend & those that were in demand.
- The analysis will assist developers to understand which programming languages, databases, web frameworks and platforms are in demand, so that they can upgrade their skills, if required, and be future ready.
- This report will help in understanding demographics, like, age, gender, education level, salaries, location, etc. of the professionals working in the technology sector.
- This will further help individuals, organisations and policy makers to take appropriate measures to manage the areas of short fall, gap in gender pay, etc.
- In order to remain competitive, developers, data analysts, data scientists, data engineers, business analysts, etc. need to keep upgrading themselves and be abreast with the latest technologies.

RUBRIC

Has the learner filled in the Conclusion slide with the conclusions in the form of bullet points?

- 0 points
Conclusion Slide is missing or empty
- 1 point
Conclusion Slide contains at least one valid bullet point.
- 2 points
Conclusion Slide contains at least two valid bullet points.
- 3 points
Conclusion Slide contains at least three valid bullet points.
- 4 points
Conclusion Slide contains at least four valid bullet points. SS

CONCLUSION

- The analyzed data provided many insights into the current & the future trends in technology.
- It also provided insights into technologies that were out of trend & those that were in demand.
- The analysis will assist developers to understand which programming languages, databases, web frameworks and platforms are in demand, so that they can upgrade their skills, if required, and be future ready.
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- In order to remain competitive, developers, data analysts, data scientists, data engineers, business analysts, etc. need to keep upgrading themselves and be abreast with the latest technologies.

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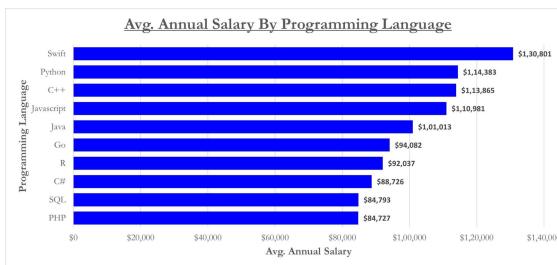
PROMPT

Task 13: In Module 1 you have collected the job postings data using web scraping in a file named “popular-languages.csv”. Present that data using a bar chart here. Order the bar chart in the descending order of salary.

Popular Languages:**RUBRIC**

Has the learner created a bar chart of the popular languages data in the Appendix section?

- This is a Bar Chart with the 'Average Annual Salary' on the X Axis and the 'Programming Languages' on the Y Axis.
- Each of the Bars has labels, displaying the Average Annual Salary for a particular Programming Language.
- The Chart has a Main Title - "Avg. Annual Salary By Programming Language".
- The X Axis has the Title - "Avg. Annual Salary", while the Y Axis has the Title - "Programming Language".
- The Chart has been sorted in Descending order of Salary.



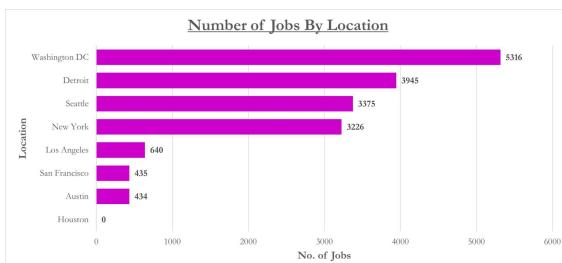
- 0 points
Appendix section contains no bar chart of popular languages data.
- 1 point
Appendix section contains bar chart of popular languages data.
- 2 points
Appendix section contains bar chart of popular languages data, with proper title.
- 3 points
Appendix section contains bar chart of popular languages data, with proper title and labels.
- 4 points
Appendix section contains bar chart of popular languages data, with proper title and labels, and the data is in descending order. SS

PROMPT

Task 14: In Module 1 you have collected the job postings data using GitHub API in a file named "github-job-postings.xlsx". Present that data using a bar chart. Order the bar chart in the descending order of number of job postings, and title and labels to it.

Job Postings:

- This is a Bar Chart with the 'Number of Jobs' on the X Axis and the 'Location' on the Y Axis.
- Each of the Bars has labels, displaying the Number of Jobs for a particular Location.
- The Chart has a Main Title - "Number of Jobs By Location".
- The X Axis has the Title - "No. of Jobs", while the Y Axis has the Title- "Location".
- The Chart has been sorted in Descending order of Number of Job Postings.

**RUBRIC**

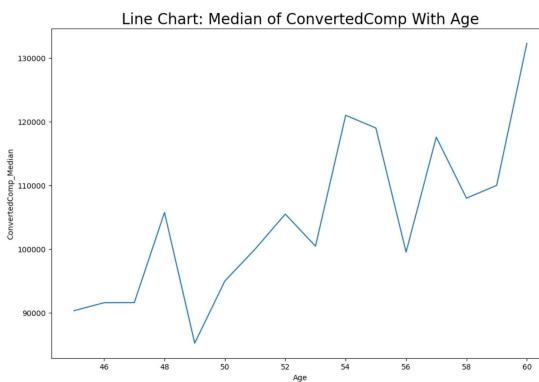
Has the learner created a bar chart of the GitHub Jobs data in the Appendix section?

- 0 points
Appendix section contains no bar chart of Git Hub Jobs data.
- 1 point
Appendix section contains bar chart of Git Hub Jobs data.
- 2 points
Appendix section contains bar chart of Git Hub Jobs data, with proper title.
- 3 points
Appendix section contains bar chart of Git Hub Jobs data, with proper title and labels.
- 4 points**
Appendix section contains bar chart of Git Hub Jobs data, with proper title and labels, and the data is in descending order.

SS

PROMPT

Task 15: Include additional value into this presentation in any way possible.

**RUBRIC**

Has the learner included additional value in any way into this presentation?

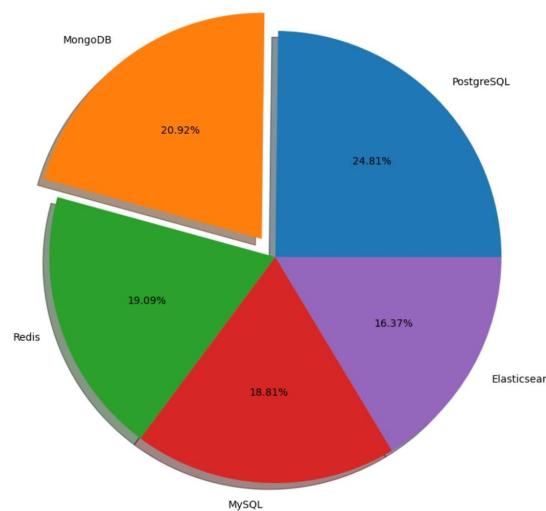
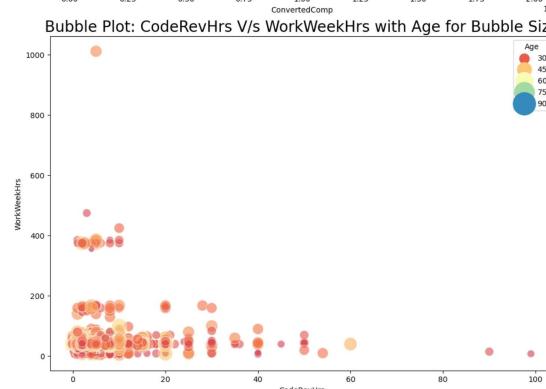
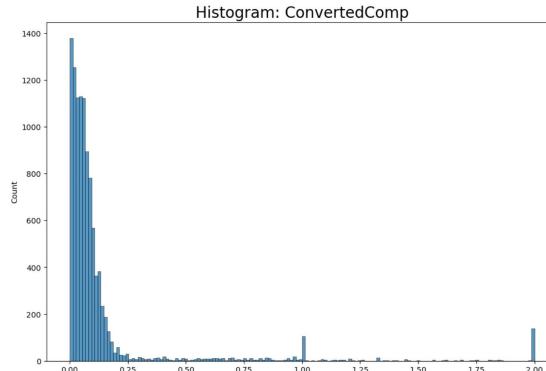
0 points

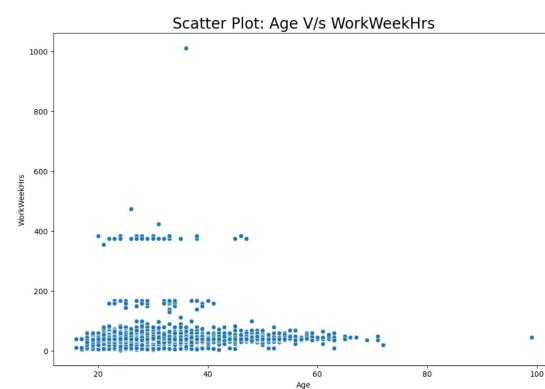
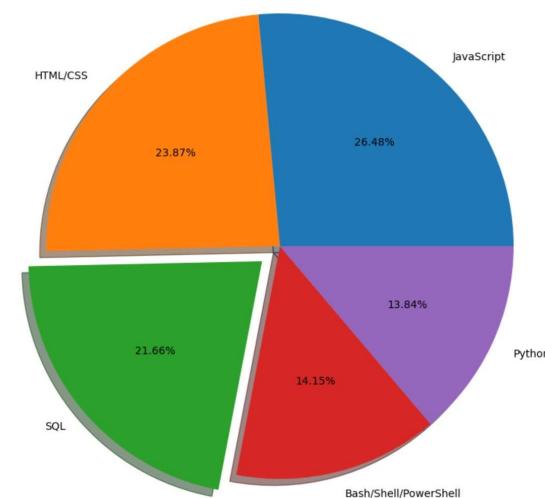
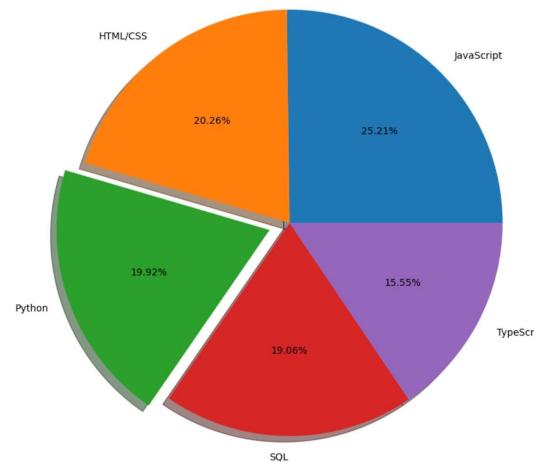
No

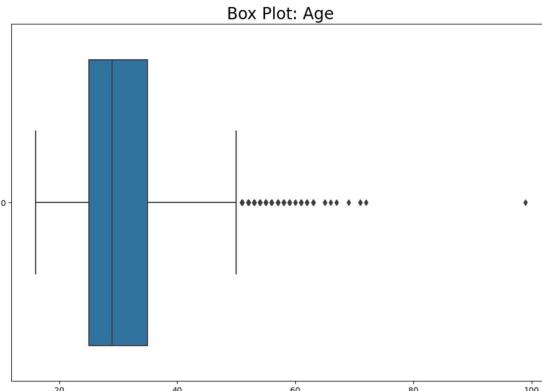
1 point

Yes

SS







- This slide includes the different charts that were created by me during the Analysis

PROMPT

Task 16: Using your creativity, make this presentation look awesome.

- For this presentation, I have used a green background from the 'Design' Menu.
- Further, I have used the 'Designer' option to change the original green design.
- The background of this Design had some grass shoots. In order that the same are visible through the content added to the slide, I have used the 'Transparency' option and changed the value to 20%. This make the grass shoots visible even though the content / charts have been placed over it.
- I have kept a consistent font for the Headings and used the font 'Imprint MT Shadow' with the additional 'Text Shadow' button on.
- For the body of the presentation, I have used the 'Garamond' font.

RUBRIC

Has the learner used creativity to make the presentation look better?

- 0 points
No
- 1 point SS
Yes

- I have used a changed the font size for the Points and Sub Points so that they are properly distinct.

PROMPT

Task 17: Use any innovative ideas you have into this presentation.

- I have used a lot of ideas to make the presentation beautiful.
- I have made use of a background design, the 'Designer' option, different fonts, different font size, charts, etc.
- I have adjusted the content in such a way that there is consistency throughout the presentation.

RUBRIC

Has the learner included additional value in any way into this presentation?

0 points

No

1 point

Yes

SS