



Data Analysis Portfolio

By EPHRAIM MICHAEL



Professional Background:

 Federal University of Technology Minna, Nigeria (M.Eng. Telecommunication Engineering 2017 -2020)

 Federal University of Technology Minna, Nigeria (B.Eng. Electrical and Computer Engineering 2004 - 2009)

Schools Attended

 Have been working with Scientific Equipment Development Institute Minna Nigeria

Positions held

- Assistant chief Eng. 2021-date
- Senior Eng. 2018-2020
- Eng.I 2015-2017
- Eng. II 2012-2014

Professional Experience

- Embedded system Electronics developer
- Programmer using embedded C, and Python
- GUI developer using C#
- Data Analyst

Skills



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Udemy Data Analysis



Project Description:

- *To better understand the pricing and subscriptions data of Udemy courses (for four different subjects) and identifying trends and patterns*
- *This will help us to:*
 - *Identify for which subject more courses should be created*
 - *Create targeted strategies to increase the company revenue*



Key questions:

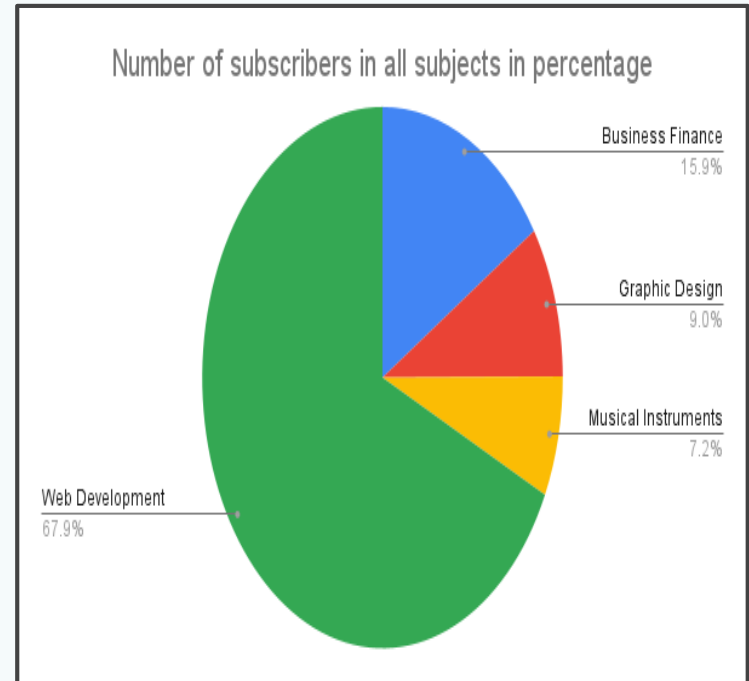
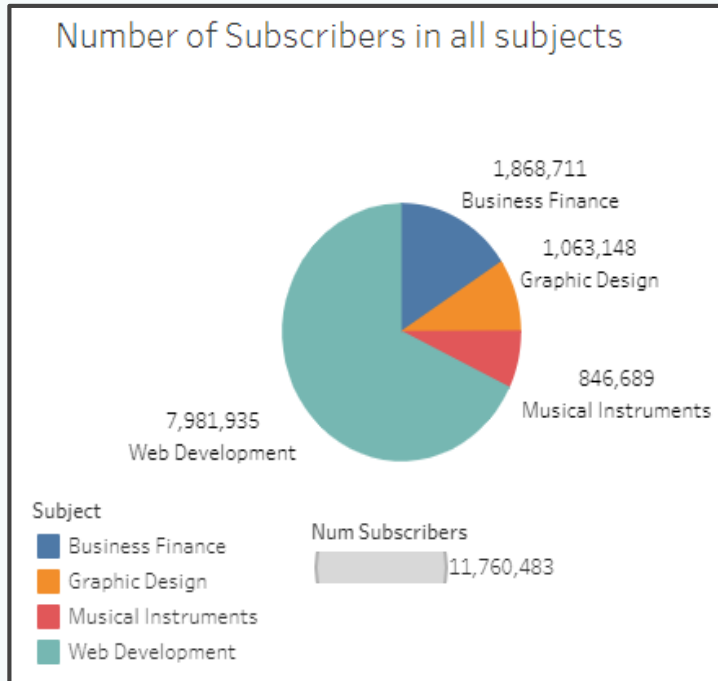
1. What are the total numbers of subscribers in each subject?
2. How does the average content duration/price/number of students vary across different subjects?
3. How many courses are free and paid for each subject?
4. What is the average price of web development courses at different levels?
5. What are the 20 most popular courses? Also, include the following information:
 - Their level
 - Whether they are free or paid
 - Whether any are free beginner courses,
 - and the duration of the courses.
6. Does content duration impact the price of the course?



Findings & Insights

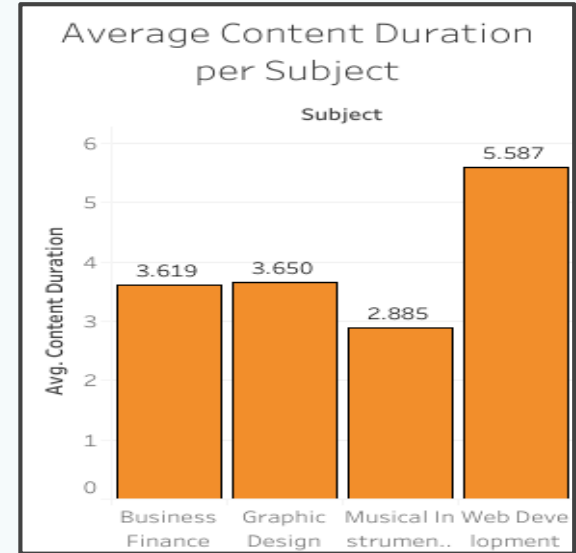
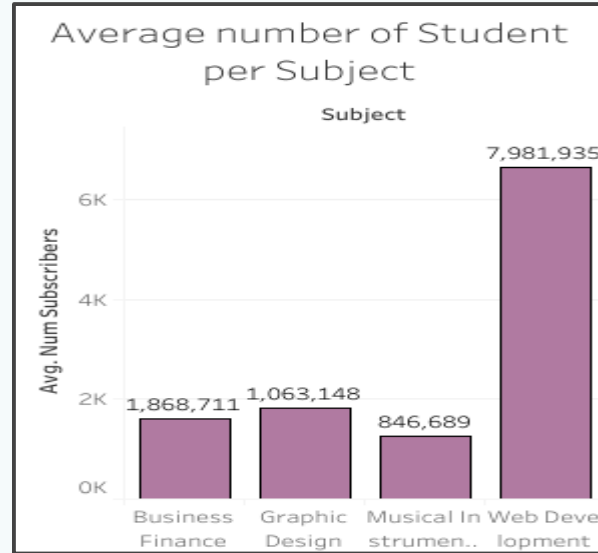
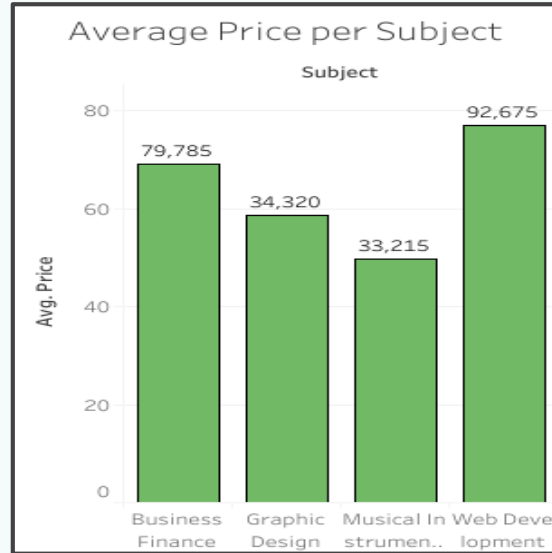


1. What are the total number of subscribers in each subjects?





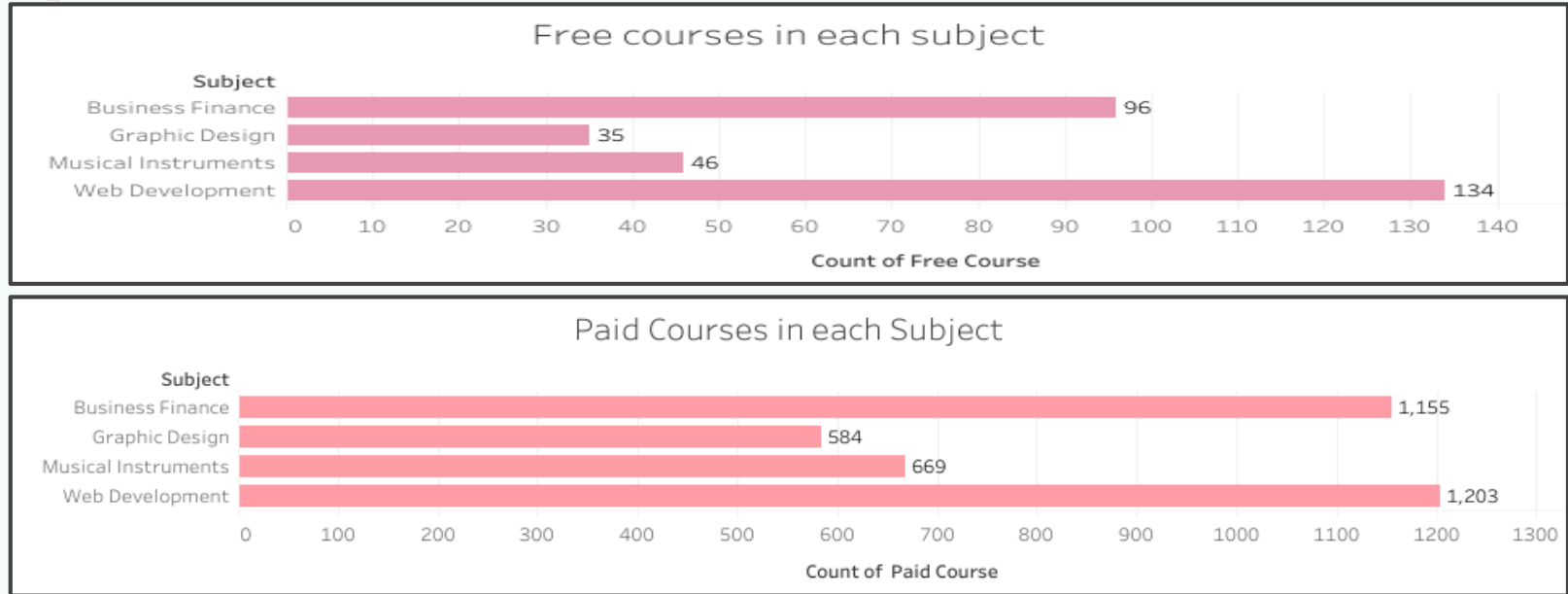
2. How does the average content duration/price/number of students vary across different subjects?



- As shown in the charts above Web development has the highest average price, average number of subscribers and average content duration.
- Musical Instrument has the least Average price, average number of subscribers and average content duration
- Although Business finance is lower in average price compared to graphical design, Business finance is lower in the average number of subscribers compared to graphic design and lower in terms of content duration compared to graphic design



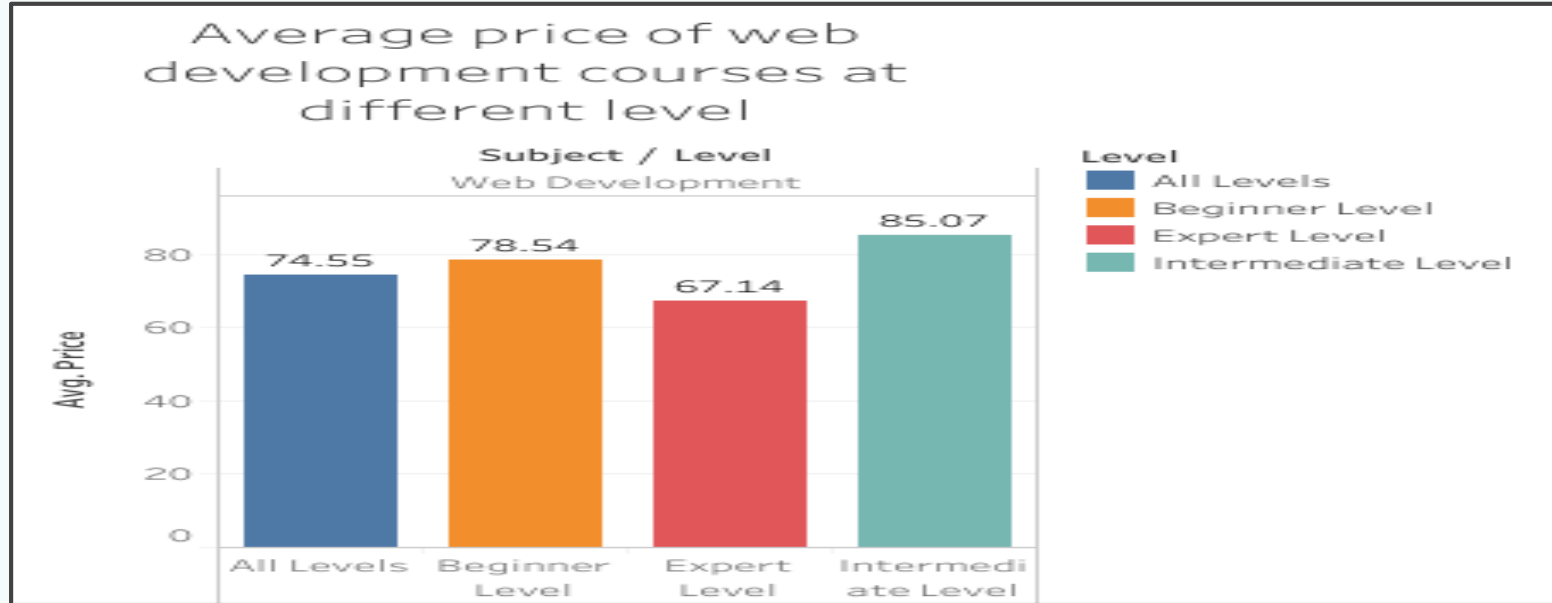
3. How many courses are free and paid, for each subject?



- *Web development has the highest number of free and paid courses for each subject. This is followed by Business Finance. Musical instrument has more number of free and paid course than graphic design.*



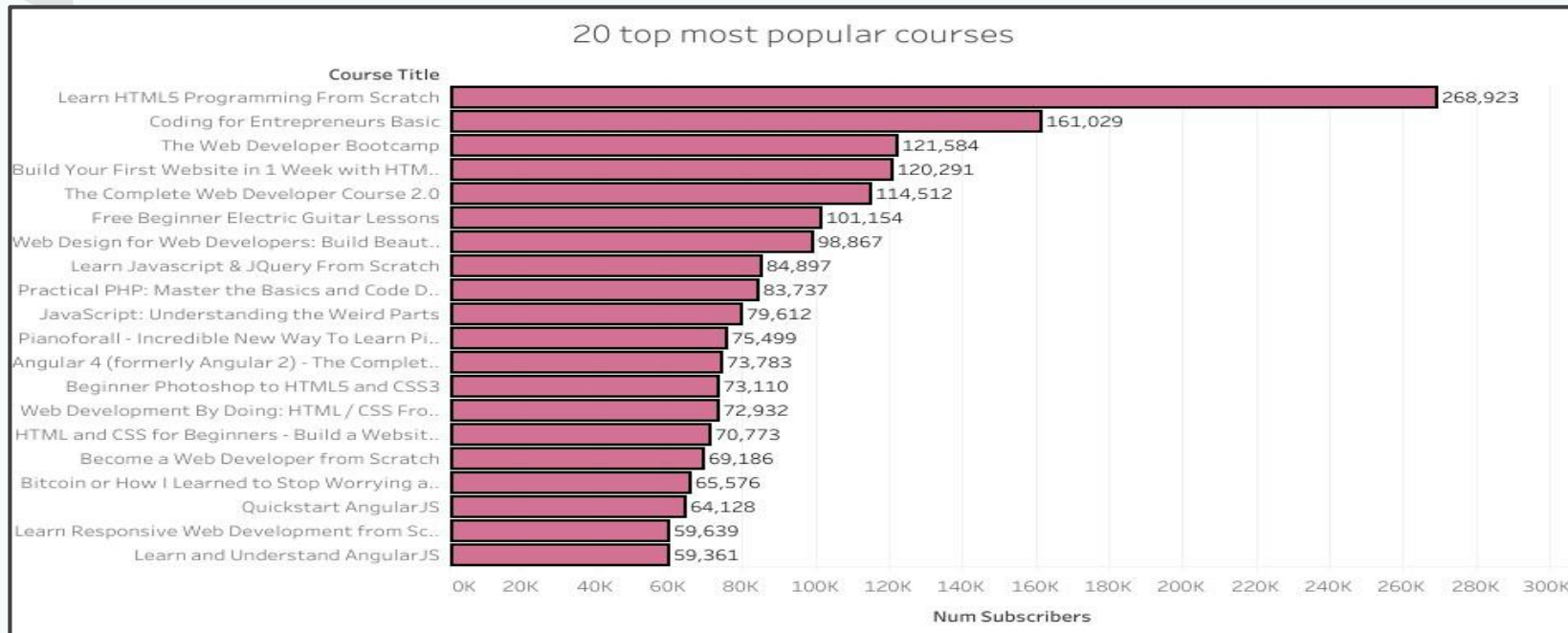
4. What is the average price of web development courses at different levels?



- The key finding here is that average price of web development is higher at intermediate level, followed by beginners level while expert level is the least



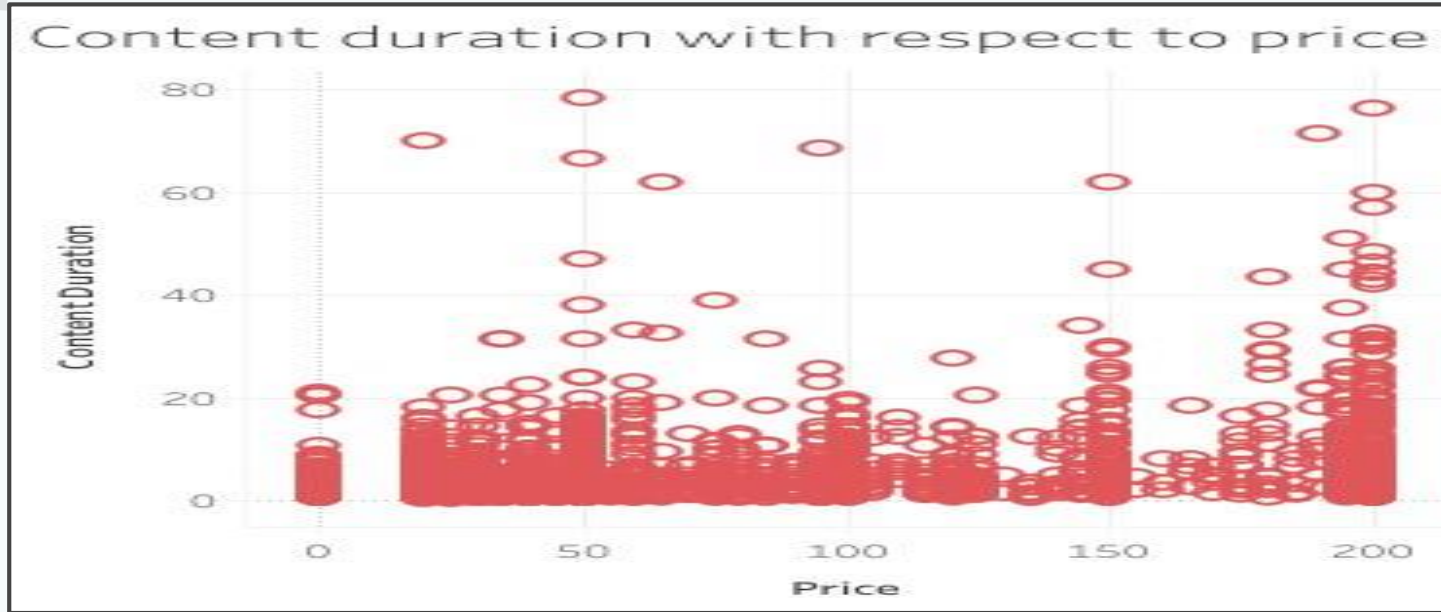
5. What are the 20 most popular courses?



- As shown above almost all the 20 most popular courses are web development courses except for a few.



6. Does content duration impact the price of the course?



- *There is no correlations between content duration and price as it is observe that most content duration is below 20 irrespective of the price.*



Summary of findings:

- **Top 5 countries:**

- *Almost 68% of subscribers come from web development and the top 5 countries are from web development as well*

- **Business finance vs Web development**

- *Business Finance and web development have almost equal number of courses (1155 »s 1203), but web development courses are almost 2X in content duration and have 4X the average subscribers*

- **Course Pricing**

- *Web developments is observed to have the average highest price followed by Business Finance. Afterwards, graphic design have higher average price more than musical instrument.*
- *Looking at the web development, more earnings comes from the intermediate course followed by the beginners course. The least paying is the expert courses.*
- *It is obvious that the why web development has more earnings is that the courses are more popular.*



Recommended actions:

Product Recommendations:

- *Focus on getting more paid course by creators in web development. This will increase profiting*

Marketing Recommendations:

- *Our data tells us that our web development courses are most popular and people are willing to pay for it. Marketing and advertising campaigns should therefore be done for other courses like business finance, graphic design and musical instrument.*



Capstone Project(Bike Analysis)



Project Description: Bike Analysis for a start-up delivery company

- The data presented are models of bikes that are produced by different companies in different countries of the world.
- The essence of this analysis is to suggest to a start-up delivery company how to get affordable bike with good performance for her operations.
- The goal is to purchase very good bike with good speed, and good torque.



Theories to note.

- **Number of cc:** This is the displacement of the engine in cubic centimetres. It is considered as the engine capacity or the amount of fuel and air the engine needs to function. For electric bikes, it is considered as the amount of energy needed to set the bike on motion
- **Horse power:** This is the power of the engine that determines how fast the engine can move in a straight line. This is measured in hp
- **Torque:** This is the force in the engine that is converted to rotational motion. In other words, it determines the weight the engine can carry. This is measured in Nm



Key questions:

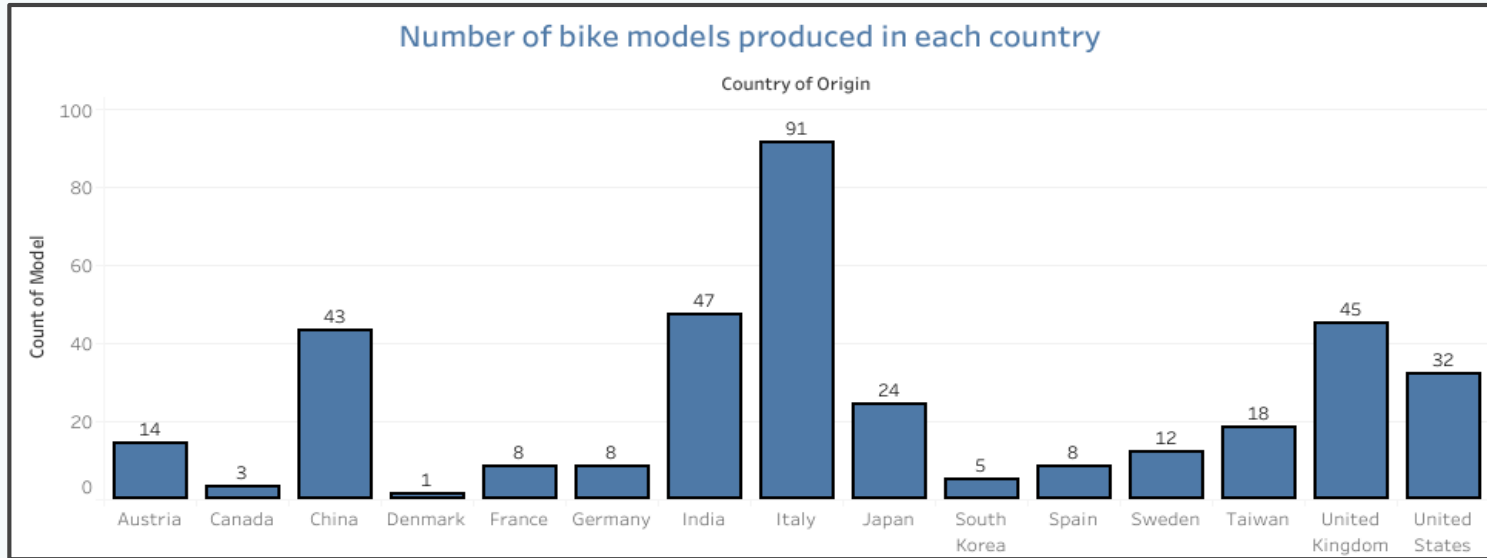
1. How many bike models are produced in each country?
2. List at least five countries in descending order having more varieties of models of bike
3. List at least five countries in descending order having the least varieties of bike models
4. How much should the company plan for averagely if purchase is to be done from a country?
5. Is there correlation between the engine displacement in cubic centimetre (number of cc) and horse power or correlation between the engine displacement in cubic centimetre (number of cc) and torque
6. List five top model in terms of performance considering relationship between the engine displacement in cubic centimetre (number of cc) and horse power and the relationship between number of cc and torque
7. What are their prices?



Findings & Insights

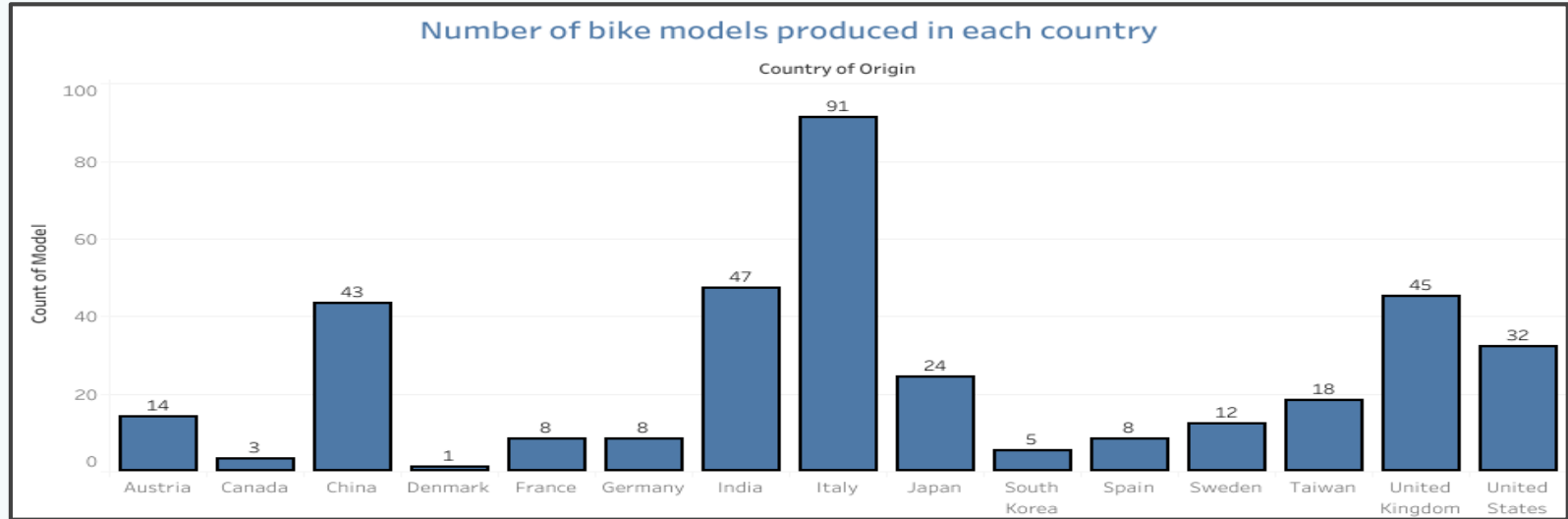


1. How many bike models are produced in each country?





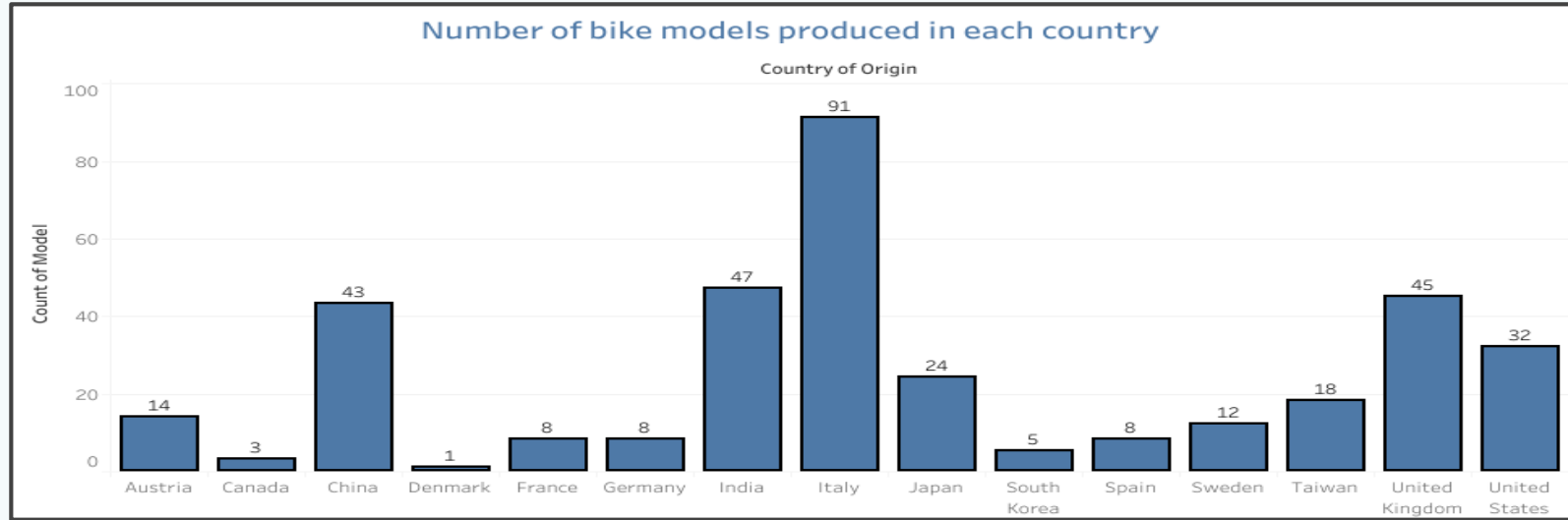
2. List at least five countries in descending order having more varieties of models of bike



- As shown in the chart the countries with the highest number of model in descending order are Italy having a total of 91, India having a total of 47, United kingdom having a total of 45 and china having a total of 43 models.
- In summary, if the company wants to select taste based on variety then, these countries could be considered.



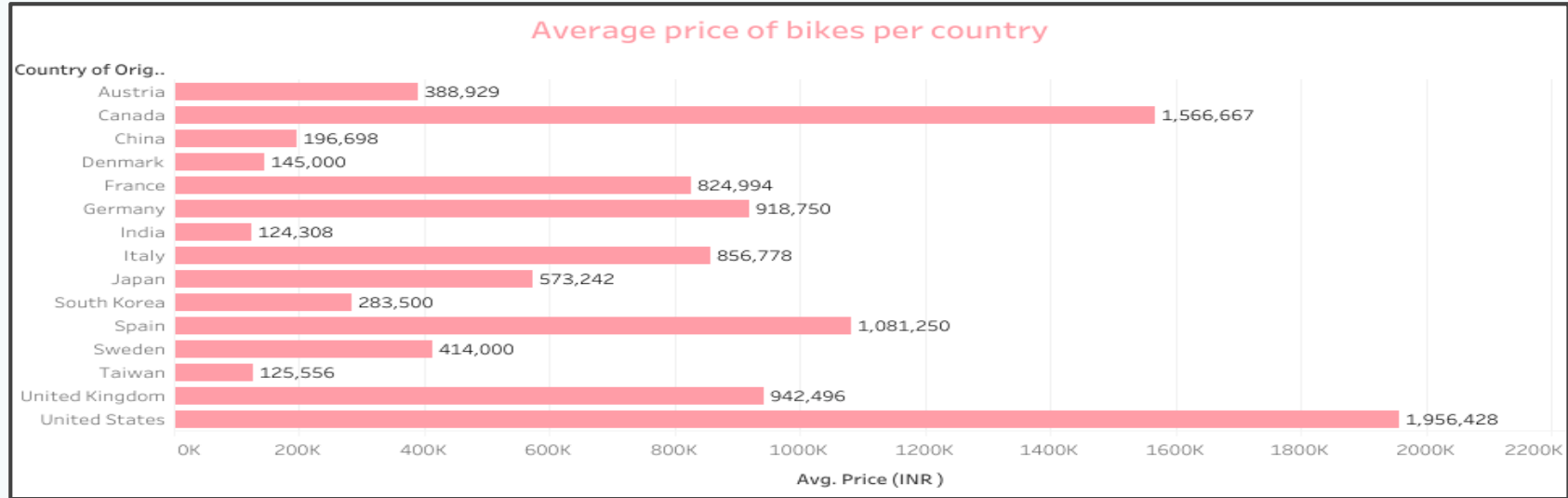
3. List at least five countries in descending order having the least varieties of bike models



- As shown in the chart, the countries with the least number of models are Denmark having 1 model, Canada with 3 Models, South Korea having 5 models, France, Germany and Spain having 8 number of models.,
- This implies that if the delivery company is not particular about variety, these companies could be patronized.



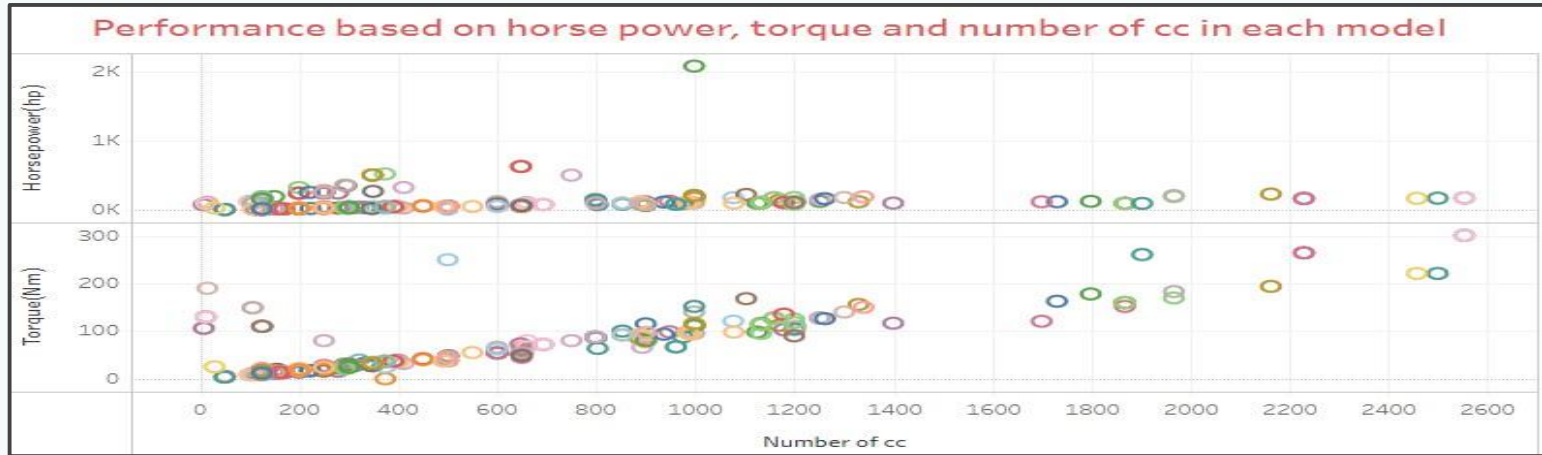
4. How much should the company plan or budget for averagely if purchase is to be done from a country?



- The chart show the average price of bikes so that the delivery company make budget based on this.
- From the chart it is noted that even though United State isn't among the first five countries having many models, the average price of bike is the highest. This is followed by Canada



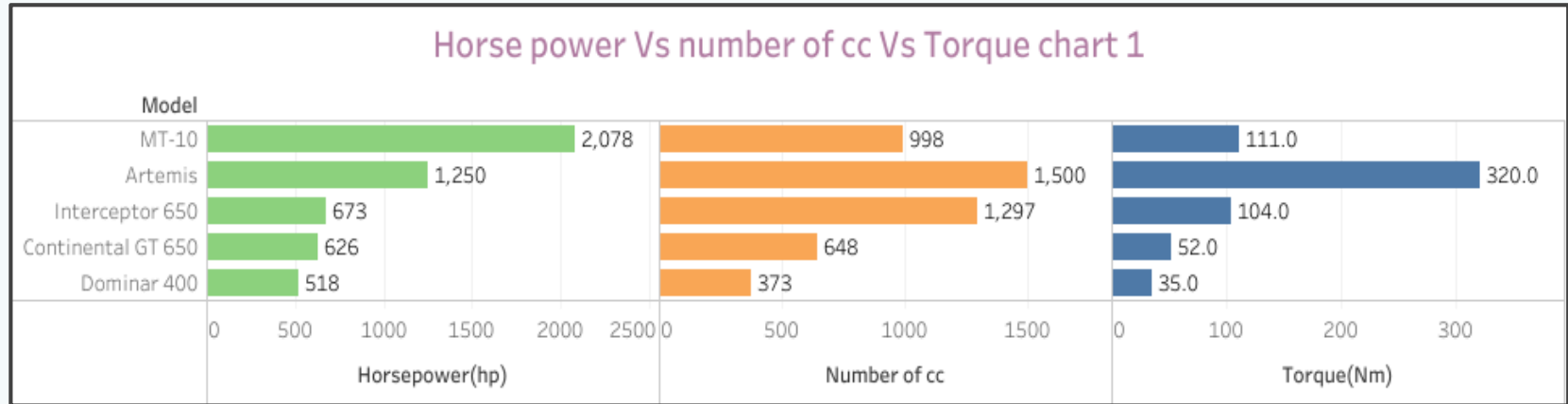
5. Is there correlation between the engine displacement in cubic centimetre (number of cc) and horse power or correlation between the engine displacement in cubic centimetre (number of cc) and torque



- As shown in the scattered chart the different colours represents the different models produced. However, it is observed that irrespective of the number of cc most of the horse power is below 250hp. Therefore no co-relations between number of cc and horsepower.
- Torque shows high correlations with number of cc. The number of cc increases with torque.



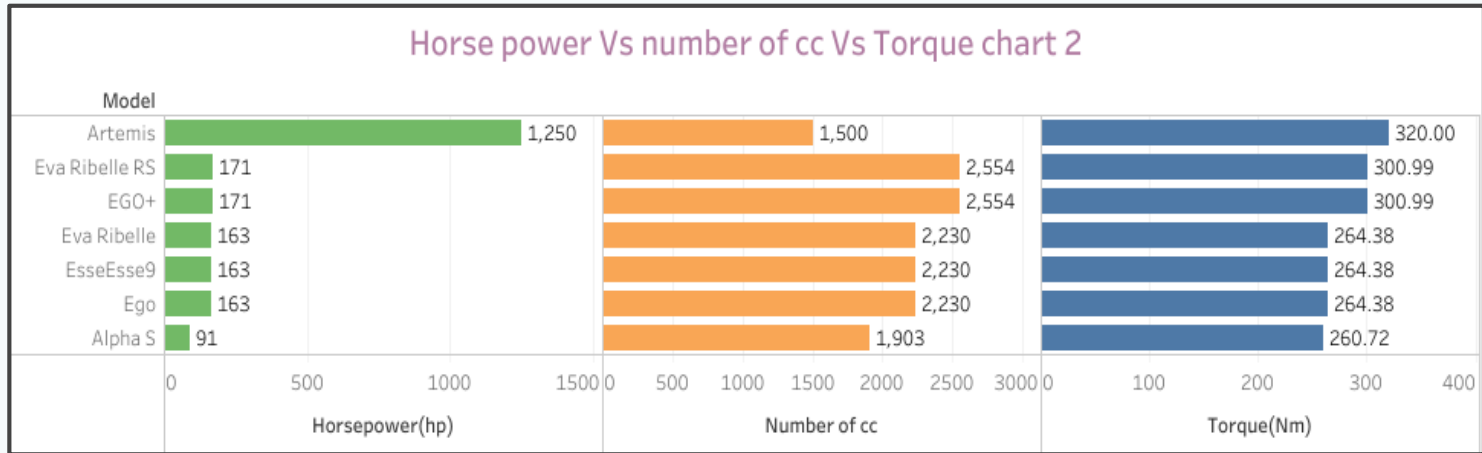
6a. List five top model in terms of performance considering relationship between the engine displacement in cubic centimetre (number of cc) and horsepower



- The chart above shows the top five models in terms of horse power. This shows that All models having high horse power have varying number of cc between 300 to 1500. however most of them have low torque except Artemis.



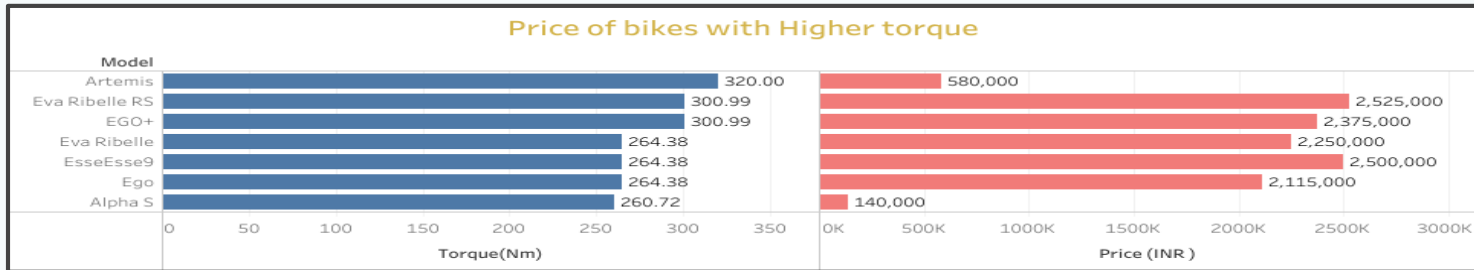
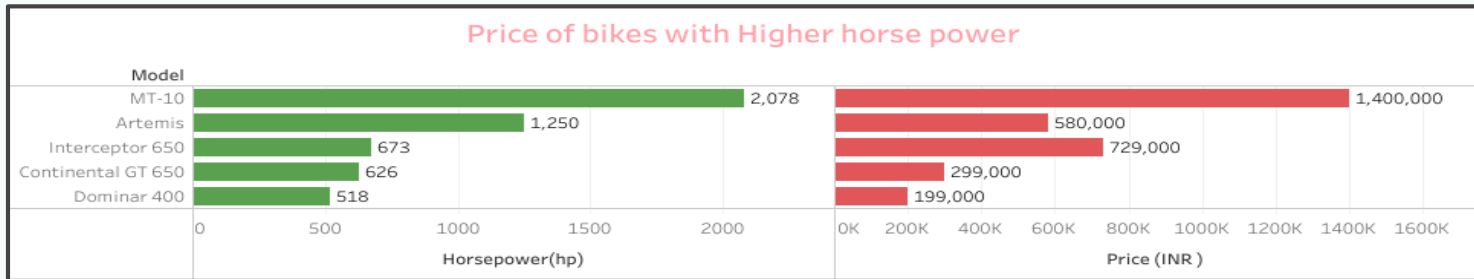
6b. List at least five top model in terms of performance considering relationship between the engine displacement in cubic centimetre (number of cc) and Torque



- The chart shows the top six performing models in terms of torque. It is observed that all bike with good torque have low horse power except Artemis.



7. What are their prices



- Procuring bikes based on horse power is cheaper. As the highest prices is 1,400,00 Indian rupees.
- Procuring bikes based on torque is more expensive. As the cheapest cost 580,000 Indian rupees.



Summary of findings:

- *If varieties is what is considered as yardstick to purchase the bike one can consider bikes from countries with high number of models.*
- *The client can make budget based on the average price of bike per country of choice.*
- *The behavior of bikes based on data given shows that there are no correlations between the engine displacement in cubic centimeters (number of cc) and the horse power. However correlations exist between the number of cc and torque. This means more torque requires more energy either as fuel or electric power.*
- *All bikes with higher horse power have low torque. Meaning that these bikes can perform well in terms of speed but, most of them except Artmise may not be able to carry much load since they have low torque.*
- *All bikes with higher torque will perform well in carrying heavier load, but most of them except Artmise may not have good speed*
- *Artmise is the only model that has high horse power and average high torque*



Recommended actions:

My recommendation is that for the delivery company to be able deliver good services, it needs a bike with good speed and good load carrying ability. From all analysis, Artmise is the best bike for the job. Note that the draw back is that because of its load carrying ability, the number of cc is a bit high.



Conclusion

In conclusion, two projects were presented in this portfolio. This includes the Udemy data analysis project where critical analysis was done to increase profit and bike data analysis where critical analysis was done to advise a start-up delivery company on what kind of bike is needed to enhance productivity.



Thank you!