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Project Description

Background

The online education market is a rapidly expanding sector, offering diverse subjects that attract millions of subscribers globally. This report focuses on analyzing key performance indicators such as revenue, subscriber count, and engagement metrics (number of reviews and lectures) across different subjects offered on the platform. The goal is to identify the most successful subjects and uncover areas for improvement, enabling better resource allocation, content development, and marketing strategies.

Business Problem

My main challenge is to understand which subjects are the most lucrative and engaging for subscribers and why. Addressing this helped in optimizing the course offerings and marketing strategies to maximize platform profitability and user satisfaction.

Data Cleaning and Preparation

Data Sources

- **Excel Sheets:** Used Excel for my initial data extraction, visualization and cleaning processes.
- **Power BI Dashboards:** used power BI for my data visualization and in-depth analysis.

Data Cleaning Steps

1. **Removed duplicate from the data:**
2. **Removed Blank rows**
3. **Data Integration**
4. **Outlier Error Detection**
5. **Find and Replace Values**

CHAPTER 1

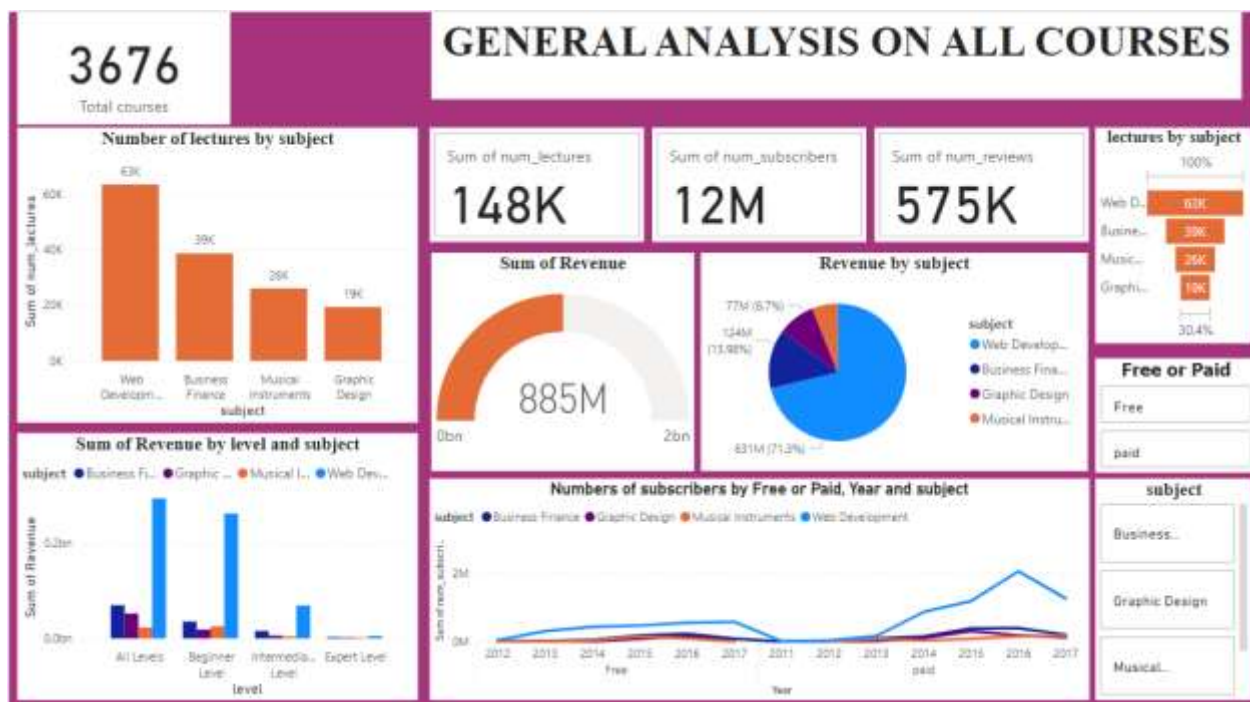
Visualization and Tools

General Analysis on All Courses

Overview

This chapter provides a comprehensive overview of the online courses offered on the platform, focusing on key metrics such as the total number of courses, lectures, subscribers, and reviews. The analysis covers various subjects, including Web Development, Business Finance, Graphic Design, and Musical Instruments. The visualization below highlights these metrics and provides insights into the distribution of revenue and subscriber engagement across different subjects.

Data Visualization



Overview Data Visualization: This visualization provides a snapshot of the key metrics across all courses, including total courses, lectures, subscribers, reviews, and revenue distribution by subject.

Revenue by Subject: A bar chart displaying the total revenue generated by each subject, emphasizing the dominance of Web Development in the market.

Subscribers Over Time: A line graph illustrating the growth in the number of subscribers for each subject from 2011 to 2017, highlighting trends and shifts in market demand.

Average Cost per Subject: A bar chart comparing the average cost of courses across different subjects, helping to understand the pricing strategies and market positioning.

Number of Lectures by Subject: A bar chart showing the number of lectures available for each subject, indicating the depth and variety of content.

6. Engagement Metrics: Reviews and Lectures: A combined chart presenting the number of reviews and lectures for each subject, offering insights into user engagement and content consumption

Key Insights

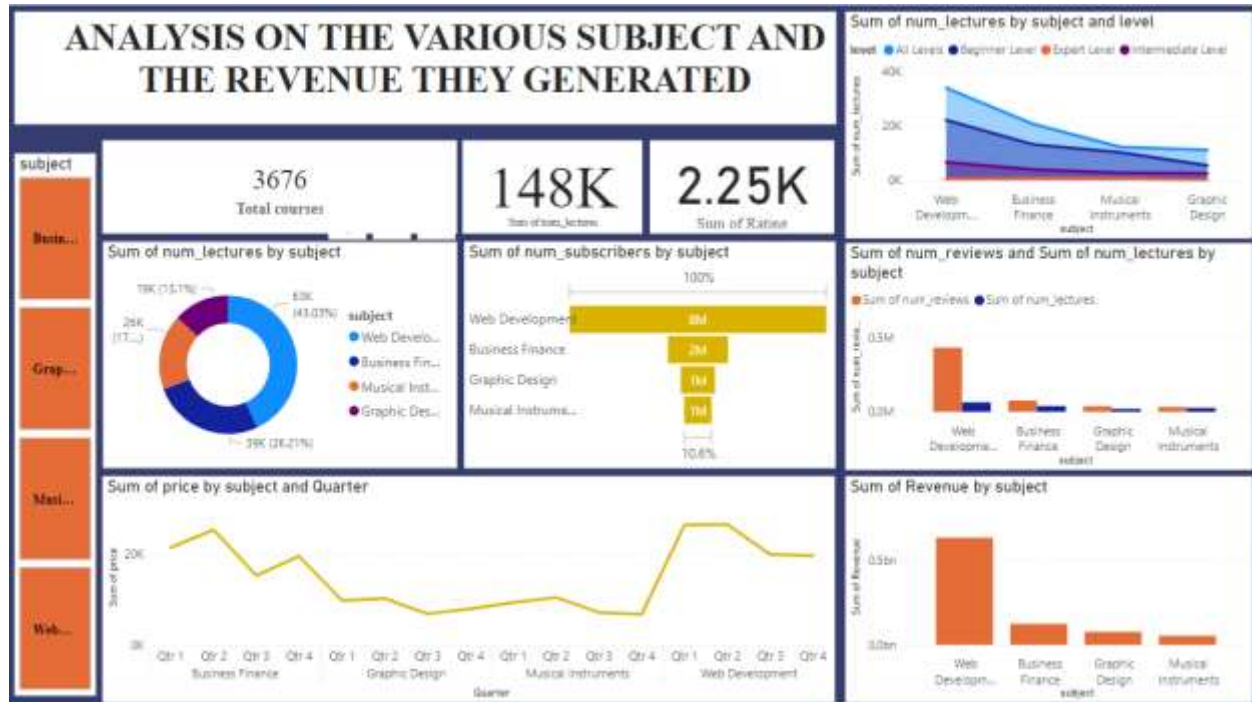
1. **Total Courses:** There are 3,676 courses available across all subjects.
2. **Number of Lectures:**
 - ❖ Web Development leads with 63K lectures, followed by Business Finance with 39K.
 - ❖ Musical Instruments and Graphic Design have 26K and 19K lectures, respectively.
3. **Subscribers:** The platform has a total of 12 million subscribers, with the majority interested in Web Development.
4. **Reviews:** Web Development has the highest number of reviews at 575K, indicating strong user engagement.
5. **Revenue Distribution:** Web Development generates the most revenue at 631M (71.3%), followed by Business Finance at 124M (13.98%), Graphic Design at 77M (8.7%), and Musical Instruments at 53M (6.02%).
6. **Course Levels and Revenue:** The revenue is also broken down by course level (Beginner, Intermediate, Expert), showing that courses catering to all levels bring in the most revenue.
7. **Free vs. Paid Courses:** The visualization also distinguishes between free and paid courses, with a clear trend showing that paid courses, especially in Web Development, attract the most subscribers.

Interpretation

The data indicates that Web Development is the most popular and profitable subject, both in terms of subscriber count and revenue. The high number of lectures and reviews suggests strong content engagement. Other subjects like Business Finance and Graphic Design also show significant engagement but lag behind in terms of revenue and subscriber numbers. This highlights potential areas for growth and development, particularly in enhancing the content and marketing strategies for these subjects.

CHAPTER 2

AN ANALYSIS ON THE VARIOUS SUBJECT AND THE REVENUE THEY GENERATED



The visualization is a detailed analysis of various subjects offered as courses, highlighting key metrics such as the number of lectures, subscribers, reviews, prices, and revenue generated. Here is an explanation of each section of the visualization:

Overview

- ❖ **Total Courses:** 3676 courses in total.
- ❖ **Total Lectures:** 148K lectures across all courses.
- ❖ **Total Ratings:** 2.25K ratings have been given for these courses.

Detailed Breakdown

Sum of Number of Lectures by Subject

Web Development stands out with a whopping 63K lectures, representing 43.03% of the total, showcasing a major focus on this area and reflecting its high demand and extensive content. Business Finance follows with 39K lectures, or 26.21% of the total, making it the second most content-rich subject and highlighting strong interest and investment in finance. Graphic Design, with 26K lectures (17% of the total), and Musical Instruments, at 19K lectures (13.1%), show a more niche interest compared to the other subjects.

The chart also illustrates how lectures are distributed across different skill levels (Beginner, Intermediate, Expert) for each subject. Notably, Web Development leads with the most lectures at all levels, especially Beginner and Intermediate, while Business Finance, Graphic Design, and Musical Instruments have fewer lectures, indicating a more focused approach in these areas.

Sum of Reviews and Sum of Lectures by Subject

The bar chart contrasts the number of reviews with the number of lectures for each subject. Web Development stands out with a high volume of both reviews and lectures, pointing to strong user engagement and satisfaction. Business Finance also fares well, with a robust number of reviews and lectures indicating solid engagement. Conversely, Graphic Design and Musical Instruments lag behind with fewer reviews and lectures, suggesting lower engagement and possibly a need for additional content or marketing efforts.

Sum of Price by Subject and Quarter

The line chart tracks price trends across different quarters for each subject. Business Finance exhibits notable price swings, peaking in Q2 of the first year, which might reflect seasonal demand or shifts in course offerings. Graphic Design shows a downward trend after an initial peak, hinting at potential market saturation or competitive pricing strategies. Meanwhile, Web Development maintains steady pricing with only minor fluctuations, suggesting a stable demand and consistent value perception.

Sum of Revenue by Subject

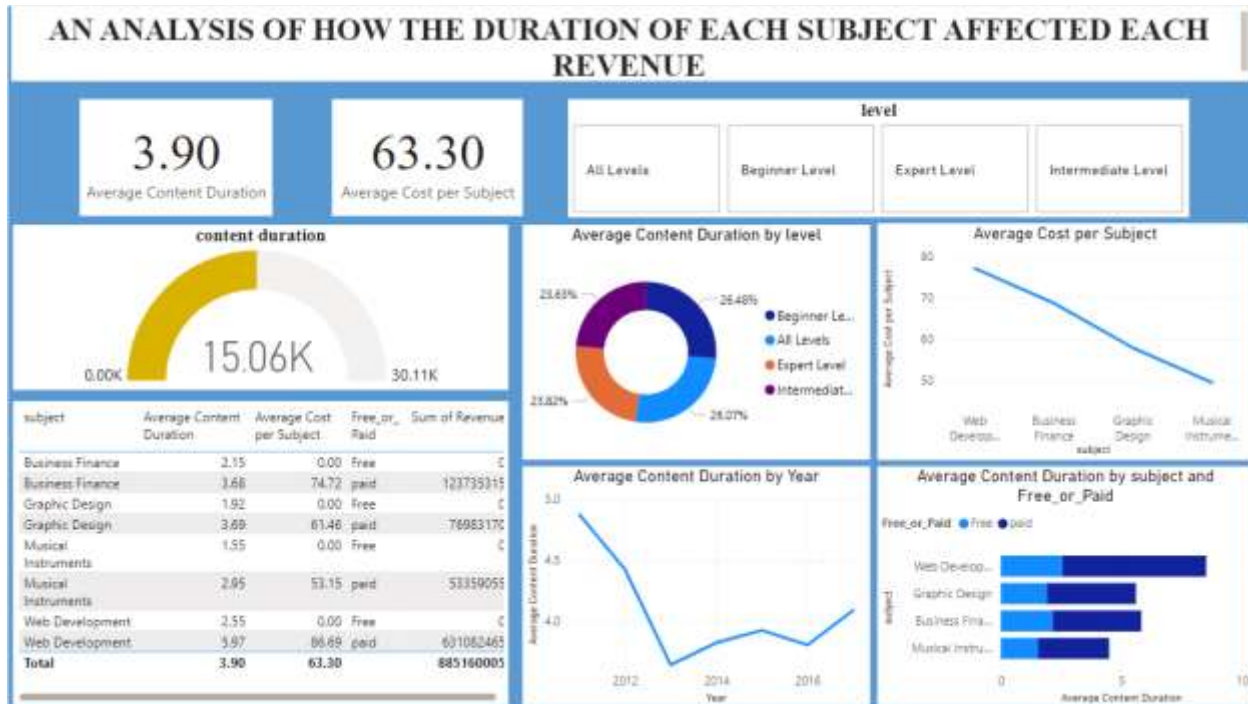
Web Development takes the lead in revenue, highlighting its dominance in both popularity and profitability. Business Finance also generates strong returns, though not as impressive as Web Development. Meanwhile, Graphic Design and Musical Instruments lag behind with lower revenue, likely due to decreased market demand or less effective pricing strategies.

Summary

The analysis shows that Web Development is the strongest subject for content, engagement, and revenue. Business Finance also does well, but not as much as Web Development. Graphic Design and Musical Instruments have lower engagement and revenue, suggesting they could benefit from more focus and improvement. This breakdown helps spot where each subject is doing well and where there are opportunities to enhance courses and marketing strategies.

CHAPTER 3

AN ANALYSIS OF HOW THE DURATION OF EACH SUBJECT AFFECTED EACH REVENUE



This data visualization provides an analysis of how the duration of content for various subjects affects their respective revenues. Here are the key points:

Overall Metrics:

- ❖ The average content duration across all subjects is 3.90 hours.
- ❖ The average cost per subject is \$63.30

Content Duration:

- ❖ The total content duration is shown as 15.06K hours, with a maximum value of 30.11K hours
- ❖ Business Finance has two entries: a free course with an average duration of 2.15 hours and a paid course with an average duration of 3.68 hours.
- ❖ Graphic Design has an average content duration of 1.92 hours for free courses and 3.69 hours for paid courses.
- ❖ Musical Instruments have an average duration of 1.55 hours for free courses and 2.95 hours for paid courses.
- ❖ Web Development has an average duration of 2.55 hours for free courses and 5.97 hours for paid courses.

Revenue:

The paid Business Finance course leads the pack with an impressive revenue of 12,373,531.5 units, while Graphic Design isn't far behind, bringing in 7,698,137.6 units. Web Development and Musical Instruments also make significant contributions, generating 6,310,826.45 units and 5,335,905.6 units respectively. These numbers highlight the strong demand and value placed on these courses, making them standout performers in their categories.

Cost per Subject:

The average cost per subject reveals a fascinating downward trend, with Web Development topping the charts at \$86.69, while Musical Instruments takes the spotlight as the most budget-friendly at \$53.15. This pattern underscores a compelling shift in pricing dynamics across subjects, highlighting how different fields are valuing their offerings in intriguing ways.

Average Content Duration by Level:

The average content duration is intriguingly distributed across different levels: Beginner courses capture 23.63%, All Levels come in at 26.48%, Expert Level content claims 23.82%, and Intermediate Level rounds out the mix with 26.07%. This distribution reveals a well-balanced approach to course length, ensuring that each level is thoughtfully catered to with a substantial amount of content.

Content Duration by Year:

I noticed an interesting fluctuation in average content duration over the years, with a notable uptick around 2016. This shift suggests that something significant might have influenced how content was being developed or delivered during that period.

Average Content Duration by Subject and Free/Paid:

It's clear that paid courses typically offer more content than their free counterparts across all subjects. This trend is particularly evident in Web Development, Graphic Design, Business Finance, and Musical Instruments, where the extended duration of paid courses really stands out.

This analysis helps to understand the relationship between content duration, cost, and revenue for different subjects, highlighting trends and differences between free and paid courses.

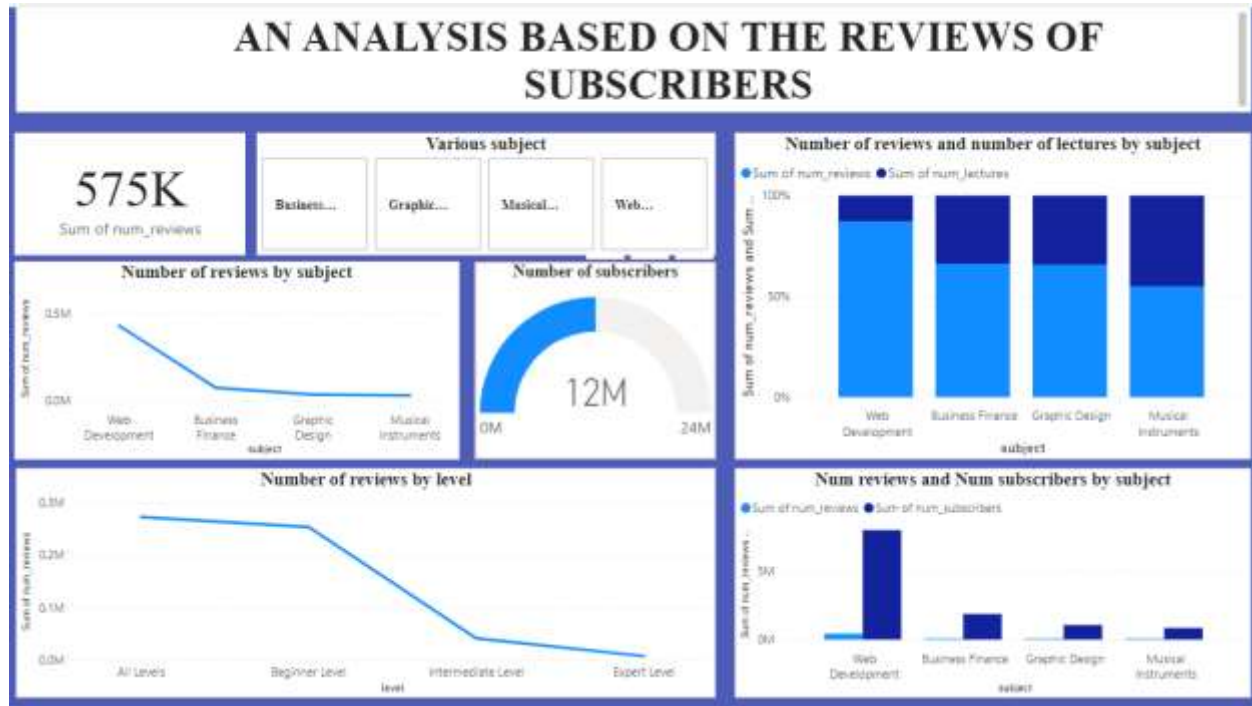
SUMMARY

This data visualization uncovers some fascinating trends and connections between content duration, cost, and revenue across different subjects. It's clear that paid courses typically offer more content and generate higher revenues compared to free ones, with Business Finance, Graphic Design, Musical Instruments, and Web Development all showing this pattern vividly. The analysis also reveals that costs vary significantly by subject, with Web Development being the priciest and Musical Instruments the most

economical. Moreover, fluctuations in content duration over the years and across different levels hint at evolving strategies in educational content. All in all, this analysis provides valuable insights for educators and content creators to fine-tune their course offerings, aligning content length and pricing with revenue potential.

CHAPTER 4

Analysis Report on Course Reviews and Subscriber Metrics



Overview

This report offers a detailed look at the reviews and subscriber metrics for different subjects, based on the data visualization. The goal is to uncover key trends and insights about user engagement across various courses.

Key Metrics

- ❖ **Total Number of Reviews:** 575K
- ❖ **Total Number of Subscribers:** 12M

Subject-wise Analysis

Number of Reviews by Subject

Web Development leads the pack with the highest number of reviews, showing just how engaged and interested users are in these courses. Business Finance also holds a strong position, with more reviews than other subjects but not quite as many as Web Development. On the other hand, Graphic Design and Musical Instruments have fewer reviews, with Musical Instruments having the fewest.

Number of Reviews and Lectures by Subject

Web Development courses not only get the most reviews but also have the highest number of lectures, indicating a clear link between the amount of content and user engagement. Similarly, Business Finance, Graphic Design, and Musical Instruments follow a similar pattern, where more reviews are matched by a higher number of lectures.

Number of Reviews by Level

Courses labeled as "All Levels" got the most reviews, showing they have broad appeal and are accessible to a wide audience. "Beginner Level" courses, while not as reviewed as those for all levels, still attract a good number of users just starting out. "Intermediate Level" courses get a moderate number of reviews, appealing to those with some background knowledge. Finally, "Expert Level" courses receive the fewest reviews, reflecting their more specialized audience with advanced skills.

Number of Reviews and Subscribers by Subject

Web Development takes the lead with the highest number of reviews and subscribers, highlighting its popularity and strong engagement. In contrast, Business Finance, Graphic Design, and Musical Instruments have fewer reviews and subscribers, with Business Finance coming out ahead among these.

Detailed Insights from Excel Data

The Excel data offers a detailed look at each course's metrics, including subscribers, reviews, and lectures. I've noticed that Web Development courses shine with the highest engagement, boasting the most reviews and subscribers. Additionally, All Levels courses consistently attract more attention, reflecting their wide-ranging appeal.

Conclusion

The analysis reveals some key trends in user engagement across various subjects and levels. I found out that Web Development stands out as the most popular subject, leading in both reviews and subscribers. Courses designed for all levels receive the most reviews, highlighting how crucial it is to offer accessible and comprehensive content. This report emphasizes the importance of delivering extensive and diverse content to effectively engage a broader audience.

CHAPTER 5



In this analysis, I examined the impact of prices on various subjects and the associated metrics.

The total sum of prices across all subjects is 243K, with an average cost per subject being 63.30. There is a total of 3676 courses offered.

When I looked at the sum of price by subject, Web Development stood out with approximately 90K, followed by Business Finance at around 65K. Graphic Design contributed about 40K, while Musical Instruments lagged significantly with only around 5K. This indicates a clear disparity in the revenue generated by different subjects.

Sum of Price and Levels by Subject

The distribution of price across different levels for each subject revealed that Web Development has a dominant presence across all levels, particularly in the intermediate and expert categories. Business Finance also shows substantial contributions from intermediate and expert levels. Graphic Design displays a balanced distribution among all levels, whereas Musical Instruments has the least contribution from the expert level.

Subscriber and Price Contribution

Comparing the sum of price and the number of subscribers shows that the majority of the revenue is driven by a high number of subscribers, with price contributing minimally.

Time Series Analysis

A time series analysis of the sum of price and lectures by subject from 2011 to 2017 highlighted significant trends. Web Development experienced noticeable growth in both price and the number of lectures

starting from 2015. Business Finance also showed marked spikes in 2015, suggesting an increase in demand during that period. Graphic Design maintained a steady but relatively lower contribution compared to Web Development and Business Finance. In contrast, Musical Instruments remained stable with lower trends throughout the period.

SUMMARY

Web Development is the most significant subject in terms of revenue and content volume, showing a substantial increase in recent years. Business Finance follows, with notable peaks around the mid-2010s. Graphic Design, while consistent, generates less revenue and content compared to the top subjects. Musical Instruments is the least performing across all metrics. These findings suggest a potential strategy to focus on enhancing and expanding Web Development and Business Finance courses while exploring methods to boost engagement and revenue in Graphic Design and Musical Instruments.

CONCLUSION

Revenue Breakdown

Web Development:

- ❖ Total revenue: 631M (71.3%)
- ❖ Web Development leads significantly, indicating strong demand and market preference.

Business Finance:

- ❖ Total revenue: 124M (13.98%)
- ❖ The second-highest revenue, showing substantial interest.

Graphic Design:

- ❖ Total revenue: 77M (8.7%)

Musical Instruments:

- ❖ Total revenue: 53M (6.02%)

Subscriber Analysis

Web Development:

- ❖ 8M subscribers, demonstrating the highest level of interest and engagement.

Business Finance:

- ❖ 2M subscribers, indicating a solid but lesser demand compared to Web Development.

Graphic Design & Musical Instruments:

- ❖ Each has 1M subscribers, showing niche interest.

Engagement Metrics

Number of Reviews:

- ❖ Web Development: 575K reviews, reflecting high user interaction and feedback.
- ❖ Other subjects have fewer reviews, indicating varying levels of engagement.

Number of Lectures:

- ❖ Web Development: 63K, the highest, suggesting comprehensive content coverage.

Pricing and Cost Analysis

Average Cost per Subject:

- ❖ Web Development courses are priced higher, aligning with their comprehensive content and high demand.

QUESTIONS AND ANSWERS

Analysis on Web Development leading

1. **Why does Web Development generate the most revenue?**
Web Development leads in revenue because it boasts the highest number of lectures and subscribers.
2. **Why does it have the most lectures and subscribers?**
It has the most lectures and subscribers because the content is comprehensive, covering a wide range of skill levels from beginners to experts.
3. **Why is the content so extensive?**
The content is extensive due to the high demand for web development skills in the job market.
4. **Why is there such high demand for these skills?**
There's a high demand because the digital economy is expanding, and businesses need strong web development skills to maintain a solid online presence.
5. **Why do businesses need an online presence?**
Businesses need an online presence to reach a global audience and stay competitive in today's digital world.

Recommendations and Action Plan

Recommendations

1. **Enhance Course Offerings:** Expand the Web Development category with more specialized courses.
2. **Diversify Content:** Increase content in underperforming subjects like Musical Instruments.
3. **Pricing Strategy:** There should be an adjustment of pricing for Business Finance and Graphic Design courses to reflect their value better.
4. **User Engagement:** Implement strategies to boost user reviews and engagement.

5. **Marketing Focus:** Leverage data-driven insights for targeted marketing of high-revenue subjects.

Action Plan

1. **Quarter 1:** Review Web Development content and launch a marketing campaign for Business Finance and Graphic Design.
2. **Quarter 2:** Develop and release new specialized Web Development courses and adjust pricing for other subjects.
3. **Quarter 3:** Monitor new course performance and engagement strategies.
4. **Quarter 4:** Assess the year's performance and plan for the next year's strategy

Conclusion

The analysis shows that Web Development courses lead in both revenue and engagement. The high need for digital skills is driving this, and it's expected to keep growing. Other subjects like Business Finance and Graphic Design have potential too, but they need better content and marketing to reach their full potential. Following the recommended action plan will help the platform improve its offerings and strengthen its market position. This report gives a clear plan for future growth, making sure the platform stays relevant and takes advantage of market trends.