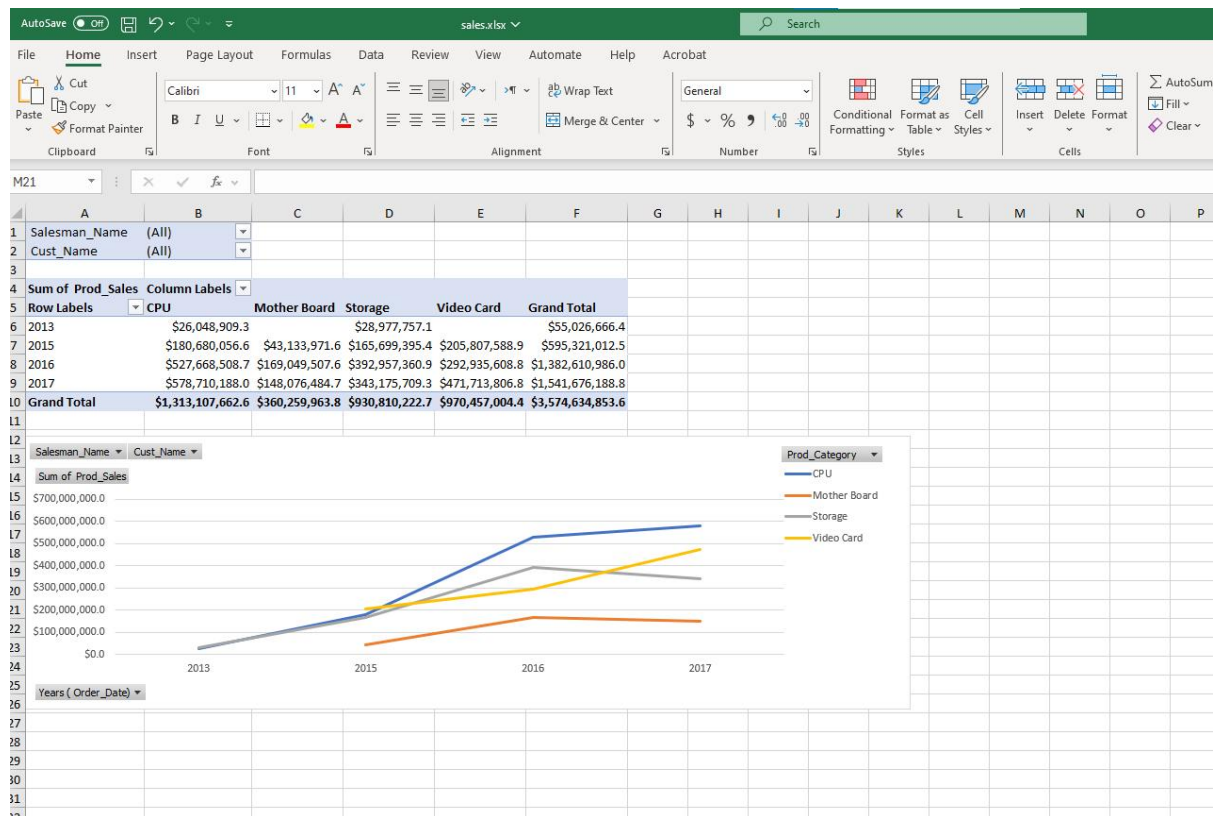
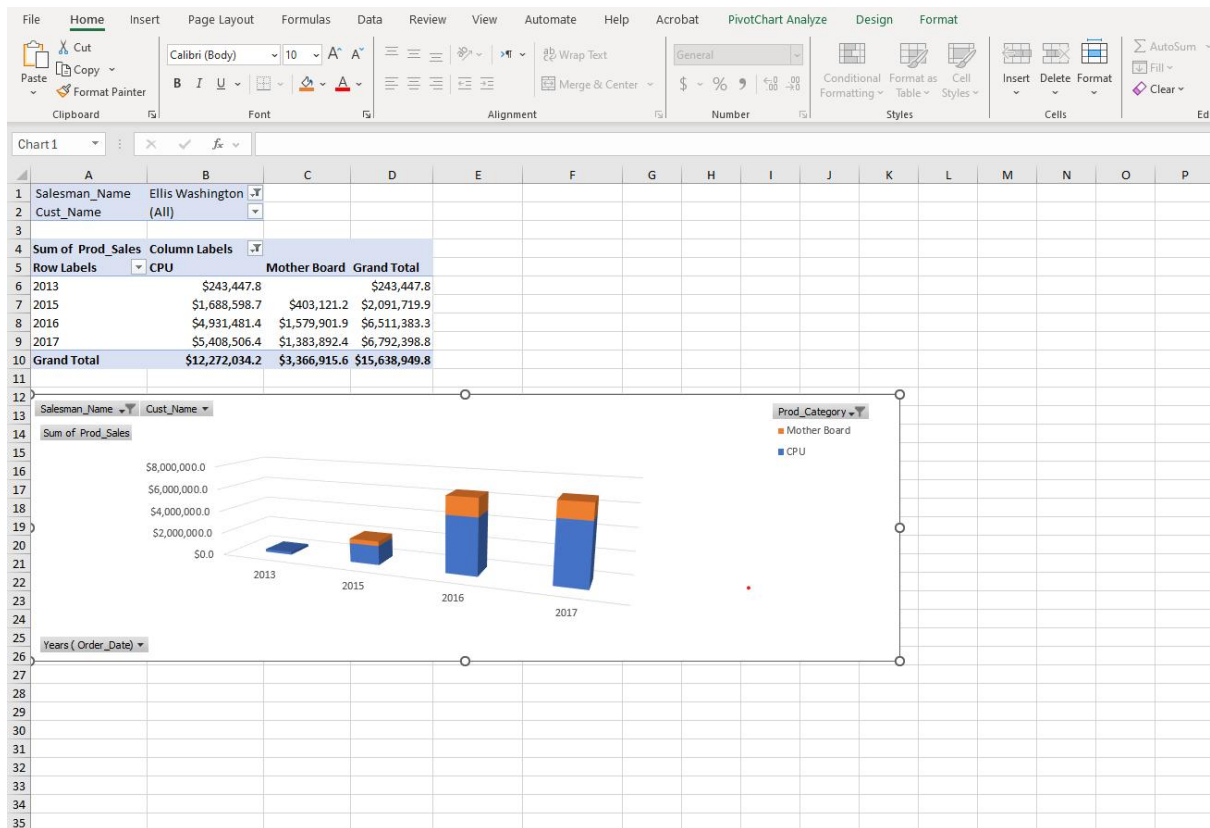


1. Line plot of all four product categories over all years with total sale by all customers and all salesmen. This will show the trend of sales over years for each product category.



2. 3-D Stacked Column plot of sales of Mother Board and CPU product categories by the salesman named "Ellis Washington" only



3. Choose any real-world business (e.g., Coles, Qantas, eBay, Facebook, Netflix, etc.). Those who are aiming for a ‘C’ or above and did the Mini-Project (Task 4.2C and 7.2C) can use the same company you selected for the project if you want. In 750–1000 words, discuss the importance of data and Business Intelligence (BI) for your chosen company. Your discussion must include: (i) what the company is; (ii) what is its main business; (iii) what data they collect about what; and (iv) how they use the collected data and BI tools to have competitive advantage in terms of revenue and/or productivity. Note that (iv) is the most important part in this additional task and it is expected that 75–80% of your word limit will be used to answer this part

## Introduction

Burwood Library is a public library located in Burwood, part of Melbourne, Australia. It serves as a community hub, providing not only access to books but also a range of services including digital resources, study spaces, community programs, and events. The library caters to a diverse group of patrons, including

students, professionals, families, and senior citizens. By offering a blend of traditional library services and modern digital tools, Burwood Library plays a vital role in fostering education, culture, and community engagement.

## Main Business

The main purpose of Burwood Library is to provide information and educational resources to the local community. It offers an extensive collection of books, e-books, audiobooks, and digital materials such as online databases, research journals, and magazines. Beyond physical and digital content, the library also organizes various community events such as reading programs for children, digital literacy workshops for seniors, and cultural exhibitions that promote social interaction and learning. Burwood Library's objective is to create an inclusive and resourceful environment that caters to the intellectual and cultural needs of its patrons.

## Data Collection Methods

Like most modern libraries, Burwood Library collects various types of data to improve its services and optimize resource allocation. The key data points collected include:

1. **User borrowing patterns:** This data includes information on the types of books and materials patrons check out, return, or reserve.
2. **Visitor information:** Burwood Library tracks the number of people visiting the library, the frequency of visits, and the time spent in various sections of the library (e.g., study areas, computer terminals).

3. **Digital resource usage:** Data on the usage of e-books, audiobooks, and other digital platforms, such as which online databases or digital services are accessed by patrons.

4. **Event participation:** Information about the attendees of library events and programs, including their registration details and engagement levels.

5. **Feedback and surveys:** The library collects feedback from patrons about their experiences with library services, events, and resources, both online and in-person.

## How Burwood Library Uses Collected Data and BI Tools to Gain Competitive Advantage

Although public libraries are not profit-driven organizations, Burwood Library can still use data and Business Intelligence (BI) tools to improve productivity, service quality, and resource allocation. These advantages allow the library to better serve its patrons, attract more visitors, and remain a valuable asset to the community.

### Optimizing Collection Management

By analyzing borrowing data and user preferences, Burwood Library can make informed decisions about which books and materials to prioritize. For instance, high demand for genres like young adult fiction or children's educational resources prompts the library to acquire more of those materials, while underutilized sections may be reevaluated, phased out, or promoted through targeted campaigns. BI tools help manage collections by rotating popular books between branches, removing outdated items, and regularly updating digital

resources. Predictive analytics also forecast demand for new materials based on community interests and events, ensuring the library stays relevant and well-stocked

## Improving User Engagement Through Personalized Services

Burwood Library uses data on borrowing patterns, feedback, and surveys to personalize services for patrons. For example, if a patron frequently checks out books on topics like history or travel, the library can offer tailored recommendations when new titles become available, enhancing engagement and encouraging repeat visits. Additionally, BI tools help analyze participation in community programs, allowing the library to refine events based on attendee interests. This data-driven approach boosts participation and strengthens the library's role as a community hub, attracting a broader and more diverse audience.

## Optimizing Resource Allocation and Staff Efficiency

Burwood Library uses data on visitor patterns and space usage to optimize resource allocation, ensuring staff and facilities are deployed efficiently. For instance, if data shows peak times or high demand for specific areas like study spaces or computers, staffing can be adjusted to meet needs. This data also informs decisions on the library's physical layout, guiding renovations or reconfigurations to improve space utilization. Similarly, analyzing digital resource usage helps the library optimize subscriptions to online databases or e-books, ensuring funds are allocated to high-demand services

## Enhancing Event Planning and Community Outreach

Burwood Library's ability to attract diverse groups to its events is central to its community-building efforts. By analyzing event attendance and feedback, the library can enhance its programming. For example, if tech workshops for seniors have high attendance but low engagement, future sessions can be made more interactive. BI tools also help identify gaps in outreach, enabling the library to better serve underrepresented groups, such as young professionals or non-English speakers, by designing more inclusive and targeted programs.

## Supporting Digital Transformation and Remote Services

In recent years, public libraries like Burwood have increasingly relied on digital services to meet the needs of patrons seeking online access to books, databases, and resources. By analyzing digital platform usage, Burwood Library can identify trends and adjust its offerings. For example, if e-book borrowing spikes during school holidays, the library can expand its digital collection to meet demand. BI tools also help monitor digital service performance, ensuring they are reliable, user-friendly, and accessible. Additionally, data on digital usage can justify future investments in technology, such as enhanced website functionality, mobile apps, or virtual events.

## Conclusion

Burwood Library, like many modern public libraries, relies on data and Business Intelligence to enhance its services, improve resource allocation, and meet the evolving needs of its patrons. By leveraging BI tools, the library can offer more personalized services, optimize its collection, and ensure that its community programs are relevant and impactful. Ultimately, the use of data and BI allows

Burwood Library to remain an essential community resource, continuously improving its offerings while maintaining high levels of user satisfaction.