**I. Exercise & Discussion**

**3.1 Describe the different changes that a software product can undergo and indicate the rationale for each**

Software products can undergo various changes such as:

* Corrective Changes: These changes address software defects or bugs and aim to fix or eliminate them.
* Adaptive Changes: These changes are made to allow the software to work on new environments, such as a different operating system.
* Perfective Changes: These changes improve the performance or efficiency of the software without changing its functionality.
* Preventive Changes: These changes are made to prevent potential problems or risks in the software.

**3.2 Explain why it is important to distinguish between the different types of software change.**

It is important to distinguish between different types of software changes because:

* It helps in prioritizing and managing the changes effectively.
* It allows developers to understand the impact and scope of each change.
* It helps in estimating the effort and resources required for implementing the changes.

**3.3 Ongoing support does not necessarily lead to modification of programs, thus it should not be considered as part of maintenance. What are your opinions on this view?**

* I personally disagree with the view that ongoing support should not be considered as part of maintenance. Ongoing support often involves activities like bug fixes, patches, and troubleshooting, which are integral parts of software maintenance. While not every support activity may lead to modification of programs, they still contribute to the overall maintenance of the software.

**4.1 Pick a software package you are familiar with that has evolved through several versions. List some of the modifications that were implemented in the different versions. What barriers might there have been to implementation of certain of these features in earlier versions?.**

One software package that has evolved significantly through different versions is Microsoft Office. Let's take a look at some modifications implemented in different versions and potential barriers to implementing certain features in earlier versions:

1. ***Introduction of Ribbon Interface (Office 2007):***

* One of the significant changes in Office 2007 was the introduction of the Ribbon interface, replacing traditional menus and toolbars. This change aimed to improve usability and make features more discoverable.
* Barrier: Implementing such a fundamental change required significant redesign and re-engineering of the user interface. Compatibility concerns with existing user habits and training needs for users to adapt to the new interface could have been barriers.

1. ***Integration with Cloud Services (Office 365):***

* With Office 365, Microsoft introduced deeper integration with cloud services such as OneDrive and SharePoint. This allowed users to access and collaborate on documents from anywhere and on any device.
* Barrier: Implementing cloud integration required robust security measures to protect user data. Additionally, ensuring seamless synchronization and compatibility across various platforms and devices could have been challenging.

1. ***Real-time Collaboration (Office Online):***

* Office Online, a web-based version of Microsoft Office, introduced real-time collaboration features, allowing multiple users to edit documents simultaneously.
* Barrier: Implementing real-time collaboration required overcoming technical challenges related to synchronization, conflict resolution, and ensuring consistent user experience across different browsers and devices.

1. ***AI-powered Features (Office 2019/Office 365):***

* Recent versions of Office have incorporated AI-powered features such as intelligent suggestions, predictive text, and automated data analysis in Excel.
* Barrier: Implementing AI-powered features required robust algorithms and significant computational resources. Additionally, ensuring accuracy and reliability of AI-driven suggestions could have been a barrier during development.

1. ***Enhanced Security Features (Various Versions):***

* Over the years, Microsoft has continuously improved security features in Office to protect against evolving threats such as malware, phishing, and data breaches.
* Barrier: Implementing enhanced security features required extensive testing to ensure compatibility with existing functionality and minimal disruption to user workflows. Additionally, balancing security with usability could have been a challenge.

In each of these cases, barriers to implementation in earlier versions could include technical constraints, compatibility issues, user resistance to change, and the need for significant resources for development and testing. However, as technology advances and user expectations evolve, software packages like Microsoft Office have continued to innovate and evolve to meet the changing needs of users and businesses.

**II.**

**Brief description of the design direction:**

* The user interface (UI) design will be modern, similar to Spotify, focusing on user experience and interactivity.
* Use colors that reflect professionalism while creating a pleasant user experience.
* Interface components will be logically and intuitively arranged, making it easy for users to access and search for information.
* Functions will be optimized to increase convenience and user experience, including quick search, continuous music playback, creating and managing playlists, and displaying song lyrics.

**User positioning for the website:**

* Music enthusiasts: Including those passionate about discovering new songs, following top lists, and creating personal playlists.
* People who enjoy listening to music while working: This group typically seeks music for work or study, so the interface needs to be user-friendly and non-intrusive.
* Individuals seeking a premium music experience: Those wanting to experience high-quality music and willing to pay for access to advanced features, such as premium sound quality or customizable playlists.
* Mobile users: With the popularity of mobile devices, the interface needs to be optimized to reflect the user experience on both computers and mobile phones.

**Prototype**: [link to figma](https://www.figma.com/file/6UQEqDbNete5sF8XORsgfq/Musical?type=design&node-id=0-1&mode=design&t=JlkSjarX2XReK19M-0)