**ISYS3001 – Assignment 1 exercise**

Remember that this is a public repository - your changes could be seen by anyone who looks!

Add some comments about Version management outside this border, or just add some text so there is a change to this file.

Remember that your GitHub user ID must be submitted in your assignment report!

Once you’ve changed follow the next step in your assignment task.

Version Management

Version management, also known as version control or revision control, is a system and set of practices that allows individuals or teams to manage changes to documents, code, or any other type of files or data over time. The primary goal of version management is to track and control the evolution of these files, making it easier to collaborate, maintain, and recover previous states of the data. This is particularly in software development, document collaboration, and other areas where multiple people on the same set of files.

GitHub AccountName: aaro10

Build Management

QUESTION 1

The nightly build system of Mozilla Firefox is a crucial component of their development process, designed to manage changes to the software and systems on a daily basis. Here’s a brief description of how it works.

1. **Continuous Integration (CI) and Automation:** Mozilla Firefox employs a continuous integration approach, often daily or nightly. This automation is essential for ensuring that the latest code changes are regularly tested and integrated.
2. **Source Code Repository:** All code changes for Firefox are manage in a central source code repository, typically Git. Developers submit their code changes via branches or pull request.
3. **Nightly Builds:** Every night, a new version of Firefox is built form the latest code in the repository. These builds are often referred to as “Nightly Builds”. They include the most recent changes, bug fixes, and new features developed by the Mozilla community.
4. **Testing and Quality Assurance:** the nightly builds are subjected to an extensive battery of automated tests to detect any registrations or new issues introduced by the daily code changes. This includes functional, performance, and security testing.
5. **User Feedback**: Mozilla encourages users to download and use the nightly builds, making it available to the public. This helps gather valuable user feedback and bug reports, allowing developers to identify and address issues early in the development cycle

Ninthly build Mozilla Firefox always release every 24 hours

(<https://wiki.mozilla.org/Release_Management/Release_Process#From_mozilla-central_to_mozilla-release> )

QUESTION 2

In September 2021, Mozilla’s release process for Firefox typically followed a predefined scheduled and underwent several stages before a new version was distributed to the public.

Here is a general overview of how Mozilla traditionally arrived at a release of Firefox:

1. **Development:** The process begins with the development of new features, improvements, and bug fixes for the upcoming release. Mozilla uses a community-driven approach, and contributions come from both Mozilla employees and the broader open-source community.
2. **Nightly Builds:** New code changes are integrated into the Firefox codebase, and nightly builds are created. These nightly builds are not intended for regular users but are used for testing and development purpose.
3. **Aurora Channel**: After some initial testing and stabilization, selected changes are merged into the Aurora channel. The Aurora channel is a more stable testing ground compared to nightly builds, and it’s used to test features and fixes with a broader audience.
4. **Beta Channel:** Once changes in the Aurora channel have undergone further testing and stabilization, they are moved to the Beta channel. Beta version of Firefox is more stable than the Aurora version and is suitable for a larger group of users who want to test upcoming features.
5. **Release Candidates:** Release candidates (RCs) are created from the Beta channel. These are versions that Mozilla believes are stable enough for every day use, and they are released to a smaller group of users to identify any last-minute issues.
6. **Release:** If no issues are found in the release candidates, the version is designated as the stable release and is made available to the general public. Mozilla typically releases new stable versions of Firefox every four weeks.

QUESTION 3

The advantages and disadvantages of a system can vary widely depending on the specific system. Here are some of the common advantages and disadvantages that client might experience with various types of systems.

**Advantages for Client**

1. **Effiency:** Many systems are designed to streamline processes and automate tasks, which can lead to increased efficiency and productivity for the client.
2. **Cost Savings:** Systems can help reduce operational cost by optimizing resource allocation and reducing the need for manual labor.
3. **Accuracy:** Automated Systems are less prone to human errors, leading to more accurate results and data.
4. **Accessibility:** Depending on the system, clients may have access to their data and resources from anywhere with an internet connection, improving accessibility and remote work capabilities.
5. **Scalability:** Systems can often be scaled up or down to accommodate changing needs, allowing clients to adapt to growth or contraction.

**Disadvantages for Client**

1. **Implementation Cost:** Developing and implementing a system can be expensive, including cost for software, hardware, training, and maintenance.
2. **Learning Curve:** Clients and their employees may need time to learn how to use the new system effectively, potentially causing a temporary decrease in productivity.
3. **Technical Issues:** Systems can encounter technical problems, such as software bugs or hardware failures, which may disrupt operations.
4. **Maintenance:** Regular maintenance and updates are often required to keep a system running smoothly, incurring ongoing costs.

References

1. <https://developer.mozilla.org/en-US/docs/Mozilla/Firefox/Developer_Edition/Nightly_builds>
2. <https://developer.mozilla.org/en-US/docs/Mozilla/Developer_guide/Sources/Introduction>
3. <https://developer.mozilla.org/en-US/docs/Mozilla/Firefox/Development>
4. <https://www.mozilla.org/en-US/firefox/>