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PBL3: Creative Design (G1)

Literature Review

Understanding APIs:

This literature review will discuss general information surrounding APIs benefits and their drawbacks. API, or application programming interface, is one of the primary tools people use for software development. It serves as a bridge to allow its users to utilize pre-made functionalities and helps them time and effort in the development process (Lamothe, M., Guéhéneuc, Y. G., & Shang, W., 2021).

Since 2008 after the launch of well-known open-source repositories GitHub and StackOverflow, API has experienced an enormous gain in its user base.(Lamothe, M., Guéhéneuc, Y. G., & Shang, W., 2021). Nowadays, APIs have become an integral part of programming practices, with nearly every line of code written by programmers utilizing API calls. Numerous organizations support them by making their internal data accessible through public APIs, and according to recent data on <http://www.programmableweb.com>, over 24000 public APIs are available on the web (Myers, B. A., & Stylos, J., 2016).

Although APIs are widespread thanks to their many benefits, sometimes even the experts among programmers struggle to understand them. This issue occurs due to the importance of API documentation. API documentation includes guidelines and references to help developers to understand and implement its features. Without proper documentation, no matter how well

developers design their APIs, people will not use them as they will not be able to fully take in their capabilities (Robillard, M. P., & DeLine, R., 2011). As a way to solve the issue and lessen the variance in documentation, developers follow API documentation formats such as OpenAPI Specification, API Blueprint, and RAML.

(254 words)

References:

Lamothe, M., Guéhéneuc, Y. G., & Shang, W. (2021). A systematic review of API evolution literature. *ACM Computing Surveys (CSUR)*, 54(8), 1-36.

Myers, B. A., & Stylos, J. (2016). Improving API usability. *Communications of the ACM*, 59(6), 62-69.

Robillard, M. P., & DeLine, R. (2011). A field study of API learning obstacles. *Empirical Software Engineering*, 16, 703-732.