FUNCTIONAL and TECHNICALREQUIREMENTS DOCUMENT

*Test your Knowledge Pilot Phase 1*

***DEVELOPMENT & IMPLEMENTATION COLLABORATION BETWEEN:***

**Hillsborough Community College (HCC)**

***DRAFT 9.19.2021***

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1.0 Acronyms and/or Definitions

PHP General purpose scripting language especially suited to web development

CSS3 Cascading Style Sheets; language used to describe the presentation of a document written in markup language, e.g., HTML

HTML Hypertext Markup Language, a standardized system for tagging text files to achieve font, color, graphic, and hyperlink effects on World Wide Web pages.

JAVASCRIPT an object-oriented computer programming language commonly used to create interactive effects within web browsers.

BOOTSTRAP a technique of loading a program into a computer by means of a few initial instructions which enable the introduction of the rest of the program from an input device.

TYKSG This working group will be responsible for the administrative oversight, operations, and support of Test your Knowledge.

API a set of functions and procedures allowing the creation of applications that access the features or data of an operating system, application, or other service.

1.1 Administrative Support and Oversight

The group in charge of the operations from a support perspective will be the TYKSG.

The below tasks will be reviewed, update, maintained by the group;

* Develop new features to be implemented via feedback from the clients
* Review the already developed features and come up with new test cases as well as possible enhancements
* Provide updates to the application after the approval of new features
* Take in recommendations from clients to implement into the software
* Maintain current patches on the app

2.0 Current system requirements

This application will strictly be an android 11 application. There will be no log in requirement as the main users will be using it only a few times to check if they have improved or to see where they stand with that specific language. All data will be saved in their device to help reduce the strain on maintaining a server. This will be added in future updates and will store the answers in an SQL database then translate them to the app using PHP where it will then display a statistical break down of progress. The SQL database will be updated after each submit button and will only hold results from the past 365 days or the past 50 attempts to reduce lag time on the server.

3.0 Functional requirements

In order to get this application out in decent time frame I will be limiting it to having all the data housed on the Android device itself but will be implement a SQL server and housing the data in there and retrieving it with PHP which will be discussed below with a tag of (future update);

* **Data Accessibility**
  + Data will be managed on the device itself
  + Application will keep track of how often it is used
  + (future update) Data will be stored in a SQL database and be pulled using PHP and output into the application
  + (future update) Application data will be tied to a Facebook log in for ease of access
* **Profile Administration and user accounts**
  + As of now there will be no sign in feature for the application.
  + (future update) Clients must submit an account using the Facebook login API.
  + (future update) Once logged in the account will stay logged in on that device and require login credentials for any other devices.
  + (future update) any changes to account will be saved in an audit log for use of user confirmation.
  + (future update) once logged into by another device it will automatically kick you out of the previous device to help reduce confusion.
  + (future update) Users will be required to relog back in once every 6 months to reduce the amount of bots that might use the application.
* **System security**
  + The only security measures that will be taken would be to use hidden fields as this is just a pilot application but will be implementing PDO once the functionality of the application is confirmed.
* **Objective**
  + To review and describe where you stand in the ‘*real world*’ when it comes to your skill in creating, reviewing, and editing scripts/code.
* **End Result**
  + Test that very from different scripting and coding languages
    - Javascript
    - SQL
    - PHP
    - Java
    - SQL
    - C
    - C#
    - C++
* **Documentation**
  + The use cases would be as follows;
    - Individuals just starting programming to get a guide on where to state
    - Novice programmers to gauge how much they understand were they stand
    - Intermediate programmers, these are individuals that have finished or just finished their programming education at college and are looking to improve in ‘*real world*’ scenarios
    - Advanced programmers, these are individuals that have their ‘*real world*’ experience and looking to improve on a specific area.
* **Testing**
  + Testing will be done in the application to find bugs by designing the testing parameters first then creating the application
    - Examples: using integer vs using a string, bypassing questions by hitting the submit button with no answers, entering the answer using bootstrap vs Javascript, ect.

4.0 Non-FUNCTIONAL REQUIREMENTS

As seen below this will consist of Objective, end results, focus, documentation, and essentiality. Objective will describe how the product works. End result will define product properties. Focus will aim on the user expectations. Documentation will focus on the quality attributes. Essentiality will focus on the ‘nice to haves’.

* **Objective**
  + The product will work by providing the test and giving a statistical break down of the single test (what you missed) and providing documentation (W3 Schools) on what and how you can improve.
* **End result**
  + All properties of the application will be using HTML and JavaScript (bootstrap) to create a smooth clean GUI for the user to interact with.
* **Focus**
  + The user should expect the following from the program;
    - A clean interface
    - Ease of access to information
    - Tests on the various languages and scripts
    - Break down on what they missed
    - Documentation to help improve
* **Documentation**
  + The quality attributes will be done by testing the application (done by TYKSG) and confirming that the out put is correct.
    - This will consist of intentionally missing questions to gauge if the statistical break down is correct
  + Confirming if the provided documentation is correct if the question is missed
    - Intentionally missing questions to confirm the documentation
* **Essentiality**
  + Confirming that all bootstrap code is a clean and easy to use UI

*Test your Knowledge Pilot Phase 1*

* *Proposal Summary*

I propose to build an Android application that is designed to help all programming and scripting users improve their skills and give a generic gauge to help you understand where you fall on the spectrum of beginner, intermediate, and advanced.

* *Timeline*

1st phase will aim to be completed by the end of semester. This would involved have an alpha version of the application ready for use by end users.

* + Application downloading
  + Tests for the user to use
  + Break down of the tests
  + External learning resources