Criterion B: Analysis

Proposed solution:

My proposed solution is creating a browser-based interactive website that can be easily used on both mobile devices and computers during the Quiz Night to exchange information between relevant stakeholders.

Requirement specification

IT system requirements
- Development Requirements
  - Hardware requirements
    - Pc with internet connection, wireless Ethernet adapter or WAP (wireless access point)
    - A mobile phone with internet connection to test the website
      - A mobile browser on the mobile phone to use the website
    - A memory stick for backup
  - Software requirements
    - Mockup software (Balsamiq Mockups),
    - Web browsers (Internet Explorer, Mozilla Firefox, Opera, and Safari) for testing and developing the application
    - Notepad++ for creating code for the website
    - WAMP server (Apache2, PHP, PhpMyAdmin, MySQL database) to run the website,
    - An FTP client to upload files to the web server
      - Preferably FileZilla
  - Network requirements
    - A local wireless network with WPA2 security to develop and test the website
- Production Requirements
  - A Hosting Service that provides:
    - MySQL database
    - PHP support
    - has a minimum of 50MB free storage area for website
  - A PC with a web browser is required to access the website

System interaction
- Ensuring that the website runs correctly on the main computer used for the competition

- ➢ Ensuring that the website functions properly in a range of browsers such as Internet Explorer, Mozilla Firefox, Opera, and Safari
- ➢ Ensuring that website is functional with the software on the ISP server.

Input/output requirements
- ➢ Input requirements
  - o Administrator(s)
    - ▪ Current slideshow used in the competition and the current Excel table will be provided by Mr. Teke
    - ▪ Information from Mr. Teke regarding the required sections of the website
    - ▪ Mr. Teke will provide first names, last names, and group names
    - ▪ Mr. Teke will submit questions for the show
    - ▪ Password and username verification
  - o Group(s)
    - ▪ Web pages for competitors to answer the questions.
    - ▪ Bonus question information
    - ▪ Password and username verification
- ➢ Output requirements
  - o Administrator(s)
    - ▪ Sections of the website must include the web pages for Mr. Teke to present the question, view the answers coming from competitors, rankings, store, and organize points for the groups of competitors. Well-designed website with consistent layout
    - ▪ Arranged list of questions
    - ▪ Arranged list of groups
    - ▪ Overall scores of the groups
    - ▪ Live scores of the groups
    - ▪ A web page to present questions to the groups
  - o Group(s)
    - ▪ Arranged rankings
    - ▪ List of questions, one by one

Processing
- ➢ Creating mockups with "Balsamiq Mockups" for the website to ensure that there is no missing detail
- ➢ Creating master templates with "Adobe Photoshop" for website to ensure consistent design
- ➢ Creating the MySQL database with PhpMyAdmin for the records of the competitors
- ➢ Coding web pages using PHP, HTML, and CSS. Notepad++ will be the primary text editor.

- ➢ Running the code with WAMP server
- ➢ Testing the produced website using different web browsers
- ➢ Editing the code according to the tests
- ➢ Uploading finished product to a web server using an FTP client.

Security

- ➢ Adding password protection to admin pages of the website
- ➢ Using MD5 hashing technique to store passwords securely in the database
- ➢ Only Mr. Teke will know the password
- ➢ Periodically backing up the system to a separate external hard drive and a cloud server like Google Drive
- ➢ The hosting company will ensure the security of the database and the server

Specific performance criteria

a) Access is granted only when the administrator requesting access has the right combination of username and password
b) Admins can change their password
c) Mr. Teke can add/edit competitor's list
d) The system will not accept the answers from competitors after and before the time limit
e) Competitors cannot access to admin functions
f) The system automatically arranges the rankings
g) The system correctly alters the database
h) The system has a consistent layout
i) The system presents questions in the right order
j) The system handles the data transaction and communication between admin and contestant sides
k) The system shows the alerts and extra buttons for bonus questions

Justification of chosen solution

This website is the most efficient solution because nowadays most of devices are capable of connecting to internet and it requires a little input from the users. Before this solution, the client tried to use another web based application called "Kahoot" (getkahoot.com). The client needs some features like bonus question that are not available at Kahoot. Thus, it is not an efficient solution for him. On the other hand, new solution will be specialized for the client's needs to be more useful. Mr. Teke cares about the connection stability, and school's new wireless infrastructure will help us to connection stability. Competitors will use their mobile devices or laptops to connect to the system and answer the question on the website.

The website will use tiny amount of resources on the computer. The presentation will be very fluent and without lags. The client will not face problems related to computers while presenting the questions.

Mr. Teke will collect answers over website. Thus, he will not use any paper which will reduce costs and is environmentally friendly. This will also lead him to more reliable results because his team will be able to compare answers with correct answer rapidly. In the current system, they collect the answer one by one. Sometimes some groups answer after time limit, but Mr. Teke and his team don't realize that cheating group. This website will not accept the answers before/after time limit, and competition will be fairer. The system will also monitor groups that already picked bonus questions. These groups will not be able to pick second bonus question. He will eliminate these problems by using this website.

I have chosen this website to do because I already know how to use Adobe Photoshop and Balsamiq Mockups. Also, I created some project using HTML, CSS, PHP, AJAX and MySQL. I know how to use them while programming a website and I can learn further information using the online sources such as forums, Stack Overflow (https://stackoverflow.com), and W3Schools (http://www.w3schools.com/). All of the required software are free, open-source and installed on my personal laptop.

Considering the solution's ability to completely solve the client's problem in an easy and free way, I believe that a browser-based interactive website is the most feasible solution for the client.

377 Words