User’s Guide

Introduction

The documentation helps the user in navigating through the prototype web application (online test taking application). Before we get into the details where to discuss the instance variables, methods and classes. I would like to provide the aim of the application which is to test a test by a student and evaluate it by the instructor.

The source code of this project is written in Java using the Eclipse Neon IDE. Since it a web application, to meet the project specification and requirements, we have improvised the Jsp framework to build the web application. The project goes like using the Tomcat 8.0 server.

The user for instance a student does a login in the login page, as the credentials are true the page routes to the student home page where the student has an option to take a test or either view his previous test scores. Again, based on the username and the role the login page routes to either the student home page or the professor's page. As far the professors page is concerned, this and the above will be discussed more in detail in further pages under the appropriate topics.

Enterprise Application:

Enterprise application is commonly employed widely all across the industry and is used by many major companies which require a business logic application and a third party api.

These are typically used to integrate with the enterprise applications to assist the organization in solving problems and to be deployed across a variety of networks (Intranet, Internet and corporate network) while not compromising on security and administration management.

Proprietary Enterprise Application

Usually developed by the in house IT development team within the organization. An enterprise may outsource some or all of the development of the application and bring it back in house for deployment.

Application Service Providers

Is prevalent, designed by a third party application service provider and leased to the enterprise, as an on premise or hosted service.

Java vs .Net

There are many ways of developing, implementing and deploying a web application. One of thecommon frameworks used is Microsoft .Net framework.

The .NET Framework is a software platform that mainly runs on Microsoft Windows and works in a similar way to Java. Source-code is compiled to an intermediate language (known as Common Intermediate Language) which is then interpreted by a virtual machine. Just like Java, the client must have a runtime environment on his computer/device. The .NET framework is mainly intended

to run on Windows. This offers advantages in terms of user interface consistency and performance, but might not be what a number of developers are looking for when looking for cross-platform software.
There are other implementations available on Linux and Mac OS, but they have varying levels of completeness and there can occasionally be compatibility problems.

Whereas Java refers to a set of programs and standards. Source-code written in Java is not specific to any processor or operating system. It instead works by being compiled to an intermediate programming language called byte-code that engines on different operating systems (called virtual machines) can execute. A developer simply writes his program and distributes the byte-code. Virtual machines will be able to run it anywhere. The virtual machines also often take advantage of their respective operating systems libraries and offer the developer the possibility to give their application a good like and a better performance.

Adobe Flash

Adobe Flash is a multimedia platform that also allows developers to write r̄ight internet applications. It has originally built to add animation, video and interactivity to web pages, but due to its extensive functionality, it is now also used to write more complex software. Flash can both embed itself in web pages and run directly from the web browser or Adobe's Flash Player. Because of its extensive set of features, Flash has enhanced considerably the functionality of web sites. It was not originally built to develop applications though and performance issues arise as soon as it has to perform computationally intensive tasks. It also lacks a number of libraries Java and .NET have to interact with the operating system.

Web Browser Applications

A web browser application (more commonly known as a web application) is a program that is accessed through a computer network using a web browser. It usually consists of two parts: a server component that provides and stores data for the user and a Client Component that is executed by the users as HTML.

Web applications have several advantages over applications written in the aforementioned platforms:

- Because web browsers are practically ubiquitous, web applications are considered to be one of the most expansive software platforms. Every modern desktop and laptop computer has a browser.
- Another key advantage is the ability to update and maintain web applications without having to distribute or install any software. The developer only has to update the content once on the server for all clients to get the updated version.
- Since all web browsers conform to similar standards, software running on them is essentially platform-agnostic.
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PHP

PHP is a server-side scripting language designed primarily for web development but is also used as a general-purpose programming language.

PHP code may be embedded into HTML code, or it can be used in combination with various web template systems, web content management systems and web frameworks. PHP code is usually processed by a PHP interpreter implemented as a module in the web server or as a Common Gateway Interface (CGI) executable. The web server combines the results of the interpreted and executed PHP code, which may be any type of data, including images, with the generated web page.

The original, only complete and most widely used PHP implementation is powered by the Zend Engine and known simply as PHP. The Zend Engine compiles PHP source code on-the-fly into an internal format that it can execute; thus it works
a s an interpreter.

Hosting of web applications

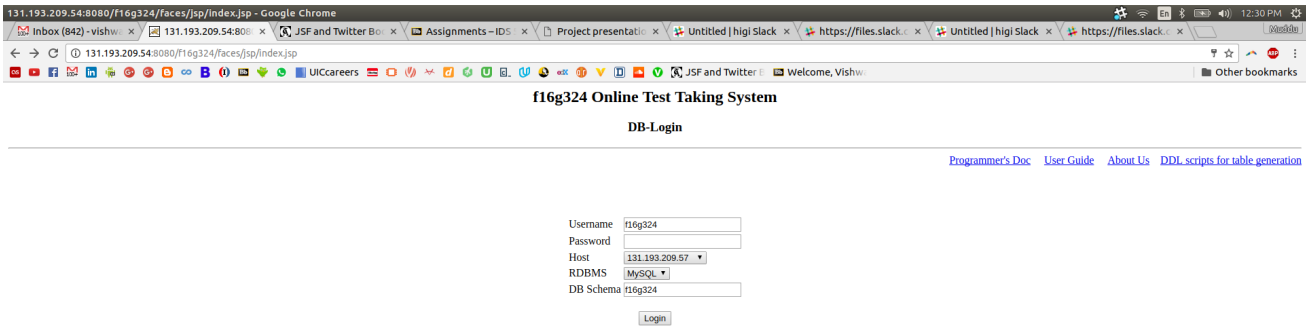
Hosted Services: The first and simplest kind of hosting is creating a sub-website within a larger site, usually for a specific application like a blog using WordPress.com, Blogger.com etc. There are advantages and disadvantages to hosted services. They are simple to set up and get started with generally good speeds as the company is specialized and good at what they do. However, they have very little control over the technical side of things. Non-approved plugins are not supported.

Shared Hosting: You share a hosting server with thousands of other websites that are also stored on the same computer.

Application Hosting Using AWS: Amazon Web Services (AWS) delivers reliable, scalable, and cost-effective computing resources on which to host your applications. With the Software-as-a-Service (SaaS) model, businesses can consume applications that are hosted online, enabling them to lower their costs by paying only for what they use, enjoy seamless and painless upgrades in functionality, and integrate easily with their existing data and systems.

Virtual Private Server & Dedicated Servers: These are the top 2 levels of website hosting, and mean you get the whole server to yourself. The difference between Virtual Private Server (VPS) and Dedicated Server is that a Dedicated Server is
a single, physical system which you essentially rent inside of a data center. A VPS is a single, virtual machine – similar to the way you can use Parallels to run a virtual machine inside of your OSX install.

Db -Login



Users with access to the db must login by:

- Entering the db username.
- Entering the db password

Select Login to advance to the next screen and begin using the application.

HyperLinks

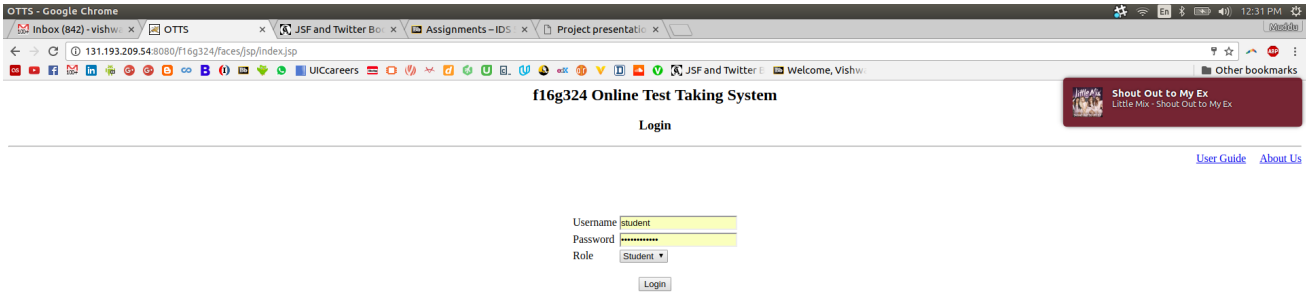
The hyperlinks are provided on the right top corner for different pages. The user must click on the Programmers guide hyperlink to access the guide to go through the technology being applied in this dynamic web application.

Besides the programmer's guide, there are other links to different pages like the user guide, which would have an array of pages helping the user to navigate through the web application. The About us link provides the authors information, the men who are the footprint of the web application.

If the user fails to login with the right credentials, the user would be prompted to enter the right username and password to access the db.

Every user must obtain the right credentials to access the db from the admin.

Login



At this stage the user wouldn't be able to register for new credentials. In order to login the user must obtain credentials from the admin. Although, the registration feature is under way.

Users with access must login by

- Entering the username
- Entering the password
- Choose role

Selecting the Login button after entering and choosing, the user will advance to the next screen. If the user fails to enter the right credentials, he/she would be prompted to enter the right credentials.

At this stage the user cannot contact the admin for any queries or neither request for new credentials. The forgot password feature doesn't exist in this system yet, but it soon to be seen in the application in the coming weeks.

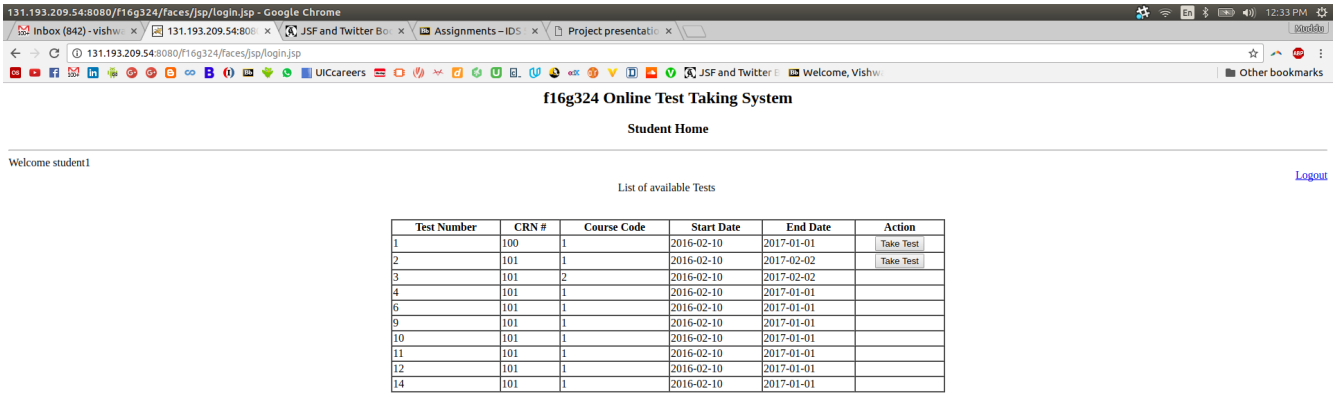
Hyperlinks

The hyperlinks for the users guider and the programmer's guide are provided in the top right corner of the application. The user can access these link once he/she logs in.

The hyperlink to the Programmer's guide would outline the different technologies used in building this application. The hyperlink to the user's guide helps the user to navigate through the web application.

While the user can change his/her role between teacher and a student. Based on the role selected the user would advance either to a student home page or a teacher home page. In this case the user is a student the he/she would advance to the student home page.

Student Home



The table represents a list of available tests with the appropriate course code, test number and crn.

Test Number

This indicates the number of the test the student is about to take.

CRN

It is the course resource number which identifies itself from another course.

Coursecode

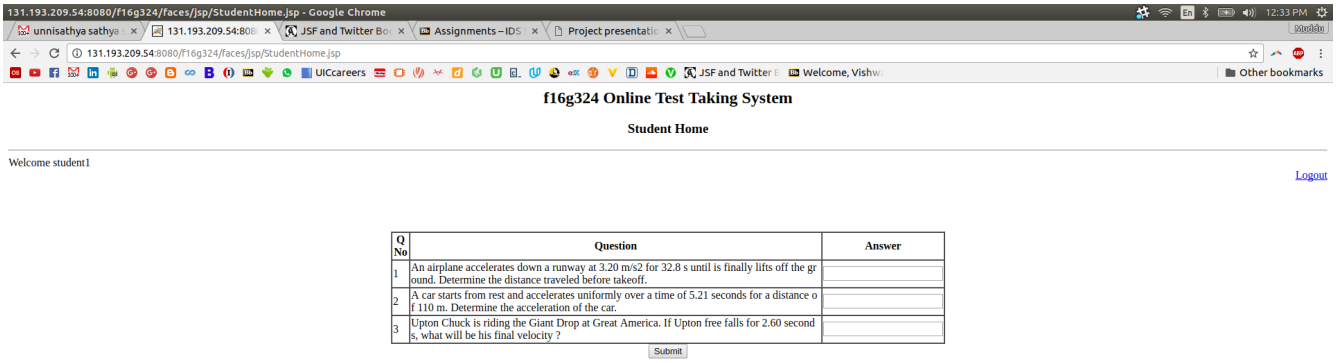
Every course is given a course code to identify the type of course the student has enrolled.

Date

The start date and end date give the student the duration of time to complete the test.

On selecting the take test button the page would advance to the next screen where the user would be taking the test. If the student intends to logout, an appropriate logout button is provided at the top right corner. On selecting the logout the student would leave the application.

Take Test

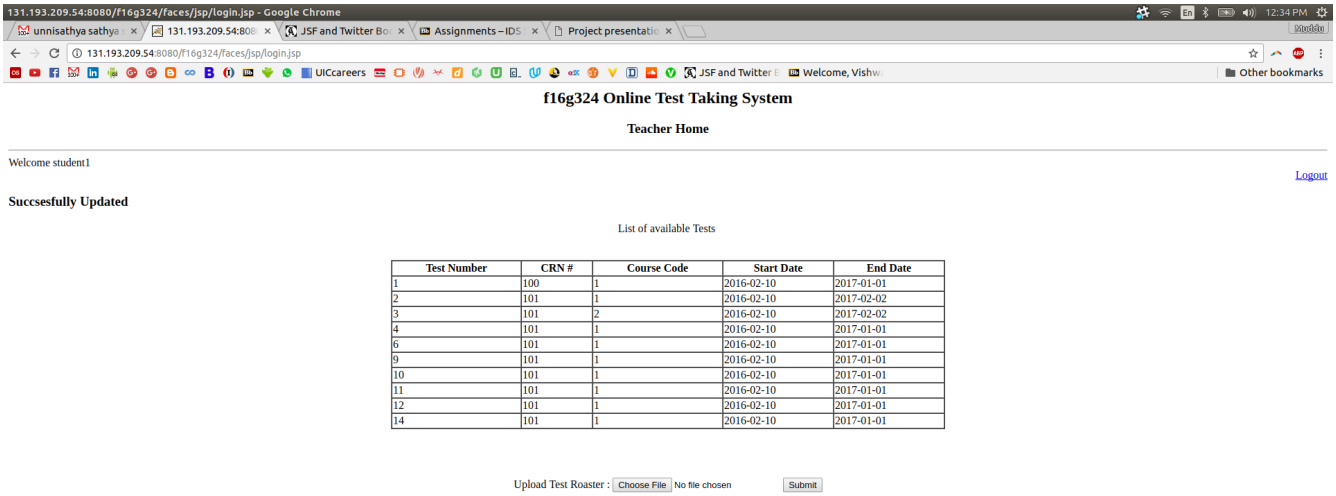


As the student opens the take test page, the student would be able to see the list of questions to answer in order to complete the test. On completion the student must select the submit button to advance to next screen.

On the next screen the user would see a Thank you message for taking the test, as the scores are updated the student will receive an email from the teacher.

If the student chooses not to take the test, he/she can simply log out from the application and close the window. As of now, there is no method as such that would record null answers, if the student clicks on the submit button without entering the answers in the fields, the submit button would be grayed out.

Teacher Home



The teacher as he logs in will be directed to the teacher home page where he/she could take a look at recent conducted tests and scheduled tests.

The teacher can also choose to upload a roaster

- By selecting the choose file button

This navigates the teacher to the local computer home directory where the teacher select which file to upload. After the uploading the file, the teacher must select the submit button to complete the update.