

SOFTWARE TESTING FOR BEETLINK E-LEARNING APPLICATION

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ALHAMDULILLAH

ALFATIHAH TO SHAMSIAH BT SANAM

Alfatihah-

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ABSTRACT

Historically, software testing has been known to point out the defects and errors that were made during the development phases. This clearly points towards the fact that software testing is a very important aspect of software development. As off now, BeetMal Sdn Bhd has prepared an e-learning platform called BeetLink that is accessible to anyone i.e. a student, employee or a housewife. The platform is to enable continuous learning without location or time barrier. In order for the BeetLink e-learning application to be used by the public, it should be tested to avoid the modules in the application fails in terms of its function. It is also to ensure each module is able to interact with one another and with the system as a whole. It is therefore, in order to produce an e-learning product, the company needs to ensure that all the e-learning criteria are achieved and software testing activities are conducted constantly at once if the platform is to be utilized and accepted widely by public. Thus, the purpose of this project is to conduct the unit, integration and system testing for e-learning BeetLink using correctness, performance, reliability and security testing techniques. Finally, the software engineering documentations that are produced in this project are Software Test Plan (STP), Software Test Description (STD) and Software Test Result (STR) documentations. STP describes the software test environment to be used for the testing, identifies the tests to be performed, and provides schedules for test activities. Meanwhile, STD describes procedures to be used during software testing necessary to control the project. Finally, STR describes test cases, test procedures and test report that are used during software test execution. These three (3) documents are written according to the Defense of Department (DoD) standard.

ABSTRAK

Umum mengetahui pengujian perisian dilakukan untuk mencari ralat dan kesalahan dalam fasa pembangunan sesebuah aplikasi. Ini menunjukkan pengujian perisian amat penting dalam aspek pembangunan perisian. Justeru itu, Beetmal Sdn Bhd telah menyediakan sebuah platform e-pembelajaran dikenali sebagai BeetLink yang boleh digunakan oleh sesiapa sahaja seperti pelajar, pekerja atau surirumah. Platform ini membolehkan pembelajaran berterusan tanpa sekatan lokasi atau masa. Bagi membolehkan BeetLink dapat digunakan oleh orang awam, ianya harus diuji untuk mengelakkan modul-modul di dalam aplikasi ini gagal berfungsi. Selain itu, ianya juga untuk memastikan kesemua modul berinteraksi dengan baik dan seterusnya keseluruhan system beroperasi dengan lancar. Selain itu, syarikat ini perlu memastikan kriteria-kriteria e-pembelajaran dipenuhi dan pengujian perisian dijalankan berterusan supaya platform ini dapat digunakan digunakan dan diterima sepenuhnya oleh orang awam. Sejalan dengan itu, tujuan projek ini adalah untuk menjalankan pengujian dari peringkat 'unit', 'integration' dan 'system' menggunakan teknik 'correctness', 'performance', 'reliability' dan 'security' Akhir sekali, projek ini menghasilkan dokumen kejuruteraan perisian iaitu 'Software Test Plan (STP)', 'Software Test Description (STD)' dan 'Software Test Result (STR)'. STP menerangkan keadaan persekitaran untuk pengujian, kaedah pengujian dan jadual pengujian.. Sementara itu, STD membincangkan prosedur terlibat dalam mengawal pembangunan perisian ini dan STR mengandungi test cases, test procedures and test report that are used during software test execution. Kesemua dokumen ini berasaskan Defense of Department (DoD) standard.

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CHAPTER 1

PROJECT OVERVIEW

This chapter provides an overview of the project. Section 1.1 presents the background of the company during the industrial attachment. This is followed by Section 1.2 which presents the background of the project carried throughout the attachment. In Section 1.3, 1.4 and 1.5, the project objectives, scopes and deliverables are formally defined. The importance of the project is explained in the following section. Section 1.6 provides an overview of project schedule and the chapter ends with a summary of the chapter.

1.1. Company Background

Beetmal Sdn Bhd is a growing private company responsible to provide digital platforms for multiple purposes. It is pillared by three systems, with each playing similar important roles in driving the company towards its goal. These systems are namely BeetLink, BeetMal and BeetAid/ BeetCare. Each of the three (3) pillar system of Beetmal Sdn. Bhd is described below:

- i) BeetLink, is a platform for teaching and learning, collaboration space for intellectual creation sharing and e-learning platforms for institutions and businesses. Its revenue sources include teachtime selling, content selling, business and institutional subscription fees, and premium users' fee.

- ii) BeetMal, is the digital platform for syariah compliant crowdfunding which plans to be an equity crowdfunding platform (ECF). This digital platform is created to fundraise, own and manage contributed funds and assets for entities and entrepreneurs. Its revenue sources are success fee from projects successfully funded, development fee for dedicated entity and monthly subscription or maintenance fee
- iii) BeetAid/ BeetCare is the one which handles Personal or Corporate Social Responsibility (CSR) platform by creating networks for individuals and charity entities, addressing the basic necessity in particular food, clothing, education & health care leveraging BeetLink & BeetMal's resources network. Its' revenue source is from the selective transaction on acquiring the needs.

1.2. Project Background

In perfecting BeetMal's management aspiration in observing the funding of its company, Beetmal has developed an e-learning system to enable the public to share their expertise and also gain knowledge when they enrol for a course. This application is called BeetLink.

BeetLink was developed by VLT Labs, based in The Co, Bangsar. The development began on June 1st, 2016 and is expected to complete within 20 mandays for its alpha version.

During the commencement of the internship, BeetLink e-learning development has progressed 50%. Figure 1.1 shown below is one of the BeetLink e-learning snapshot.

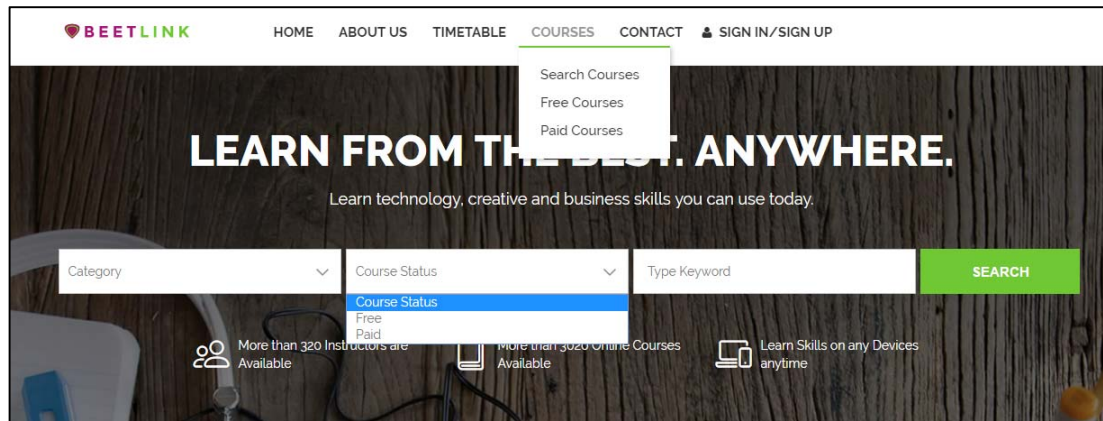


Figure 1.1:BeetLink Screenshot

The BeetLink e-learning features the idea based on the features from Facebook, Instagram and Wikipedia. BeetLink e-learning application can be also utilized by anyone at anywhere. In addition, BeetLink also offers paid and free course category facilities, befitting to the users' preferences. Aside from that, this system is conceptually self-regulated whereby any information uploaded by users is on their responsibility.

Currently, BeetLink is still in its development phase. The BeetLink e-learning application will consists five (5) modules which are: Login/Registration, Payment Gateway, Classroom, Timetable and Live Video modules. The functions of each module are as follows;

i) Login / Registration

This module will enable the user to create their own id. Furthermore, this module will enable the system to retrieve the registration record of the person or entity requesting access to the records.

ii) Payment Gateway

This module will enable the user to pay the courses via third party payment processor.

iii) Classroom

This module is dedicated to restricted users (chosen users) whom are given access to join classroom by using Google Hangout methods and they could communicate among each other at the same time.

iv) Timetable

This module is to record courses in the form of classrooms and are displayed on the timetable.

v) Live Video

This module allows users to upload videos into BeetLink.

1.2.1 Problem Statement

In order for the BeetLink e-learning application to be used by the public, it should be tested to avoid the modules in the application fails in terms of its function. It is also to ensure each module is able to interact with one another and with the system as a whole. Therefore, the purpose of this project is to conduct software testing for BeetLink e-learning. The software testing which will be conducted in this project will be the unit, integration and system testing. This is to ensure that the system implementation meet the BeetLink e-learning requirements specification.

1.3. Project Objectives

- i) To identify the features and component for BeetLink e-learning system and review existing e-learning application in Malaysia.
- ii) To identify software testing strategies and techniques for BeetLink e-learning application.
- iii) To develop software test descriptions for BeetLink e-learning application.
- iv) To conduct software testing for BeetLink e-learning application and produce a report on test result.

1.4. Project Deliverables

The software engineering documentation which will be produced in this project are Software Test Plan (STP), Software Test Description (STD) and Software Test Result (STR) documentations. STP describes the software test environment to be used for the testing, identifies the tests to be performed, and provides schedules for test activities. Meanwhile, STD describes procedures to be used during software testing necessary to control the project. Finally, STR describes test cases, test procedures and test report that are used during software test execution. These three (3) documents will be written according to the Defense of Department (DoD) standard.

1.5. Project Scope

The scopes of this project are listed as follows:

- i) Software testing on BeetLink application will involve unit, integration and system testing starting from its application from its registration process until users completed using the content of the course enrolled.
- ii) The testing activities will comprise four (4) modules which are Login/Registration, Classroom, Timetable and Live Video modules.
- iii) The STP, STD and STR documentations will be developed to describe the test cases, test procedures and related information of testing activities.

1.6. Project Schedule

To describe all the tasks involved in the whole project, an effective and organized project schedule has been planned as could be seen in Appendix A.

1.7. Chapter Summary

This chapter provides an overview of the project. This chapter begins with an introduction to the company and the background of the project that is carried throughout the attachment. The project objectives, scope and deliverable of the project are also discussed in this chapter. The chapter ends with a project schedule that is developed to monitor the progress of this project and to make sure that all the tasks are done accordingly as planned.

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