

A Web-Based Coursework-Kit System

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Abstract. In Universiti Teknologi Malaysia (UTM), every lecturer need to have the coursework for each subject that they are teaching. The current process of preparing the coursework is done manually. Due to this matter, Coursework-Kit System is built to ease the process in modern way which using system that based on web. This system will solve the problem by enhancing the way of calculating the students' marks and preparing the coursework of each subject easily using web-based system. Coursework-Kit System will let the lecturers to enter the code of subject only, so that the system will generated the coursework based on the code of subject that have been entered. The coursework that generated automatically is according to the course outcome learning that have been set by course owner and program learning outcome that set by Head of Department. This system also standardize the calculation of coursework analysis.

Keywords: Component, coursework, web-Based System, tools.

1. Introduction

Course outline is needed as a guideline for each subject that offered to students in Universiti Teknologi Malaysia. Due to this mater, every lecturer need to have a coursework of each subject that they have been assigned to. Currently, the process of completing the coursework is done manually which lecturer need to refer from another file or sources to get the right course outcome learning (CO) and program outcome learning (PO) which can be classified as traditional way.

Furthermore, as the technology growing rapidly, we should keep up with the technology by enhancing the traditional way of preparing the coursework to modern way which only need the internet to access to the system.

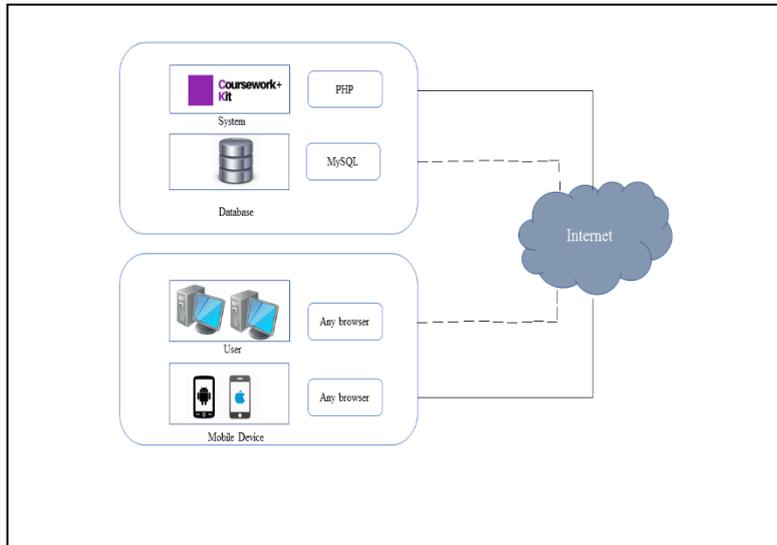
Coursework-Kit System are proposed to improve the process of preparing the coursework for any subject that help the lecturers to prepare the coursework. In addition, the Coursework-Kit System offer to ease the process which the users comprised of lecturers, course owner, Head of Department (HOD) and administrator. By the existing of Coursework-Kit System, the submission of the coursework by lecturers can be sent through the system. Any changes towards the CO and PO also can be done through the system by course owner and HOD. The administrators are the person that responsible to give the authorization according to the level either lecturer, course owner or HOD.

In this system, the coursework will automatically generate according to the code of subject that have been entered by lecturer and the calculation of coursework analysis that based on the CO and PO will be standardized.

2. Method

2.1. System Architecture

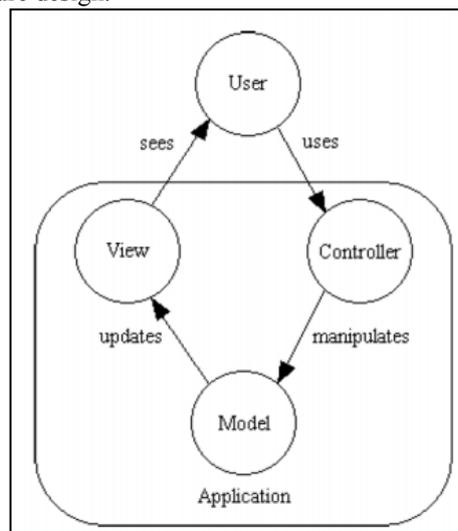
First, Navicat for MySQL database will be connected the moment user logged in into the system in order to enable users to access and manage to use the function of the system according to their level. This system connecting to database and user by the existence of internet. Furthermore, with internet, users allowed to access to the system using any platform either desktop or smartphone.



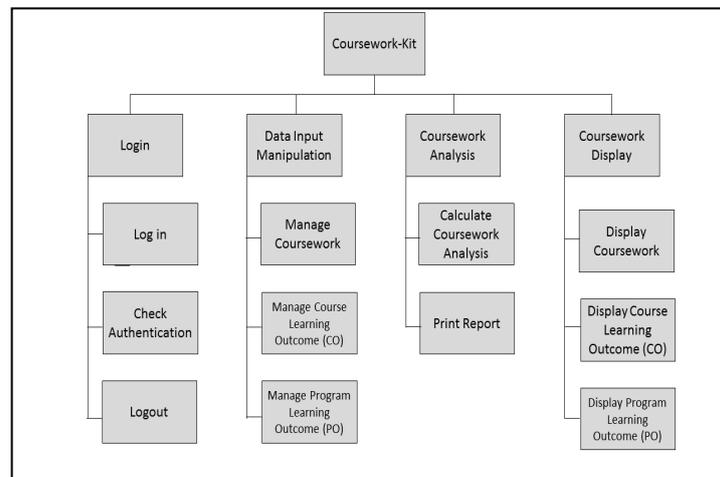
2.2. Architecture Design

Coursework-Kit System is using MVC Architectural Design as architecture design which is Model-View-Controller. MVC have been chosen because it is the most adaptable with the Coursework-Kit System concept which the pattern has three components that are, business logic (model), presentation (view) and application logic (controller).

The system concept's that allowing users to view and manage the system is very match with this kind of architecture design.



2.3. System Structure Chart



- Login
 - Users need to enter the username and password to access into the system. In this process, system will authenticate the input and determine the level of users either lecturer, course owner, Head of Department or administrator
- Data Input Manipulation
 - Users able to add, edit, and delete the course learning outcome or program learning outcome. Users also able to submit the coursework that generated automatically to the responsible party.
- Coursework Analysis
 - Lecturer need to enter the students marks into the analysis sheet according to the course learning outcome and program learning outcome that have been set by course owner and Head of Department. At the end of this process, users can print the analysis that have been filled.
- Coursework Display
 - Coursework that have been approved can be display also the course learning outcome and program learning outcome. The analysis that have been complete by lecturer also can be display.

2.4. Software and Hardware Requirement

- Windows 7
 - Operating System (OS) that is used to develop the Coursework-Kit System is Windows 7 Ultimate. It is advisable to use the latest OS as the function would be upgraded and more advance which can ease the process of building the system.
- Adobe Illustrator
 - Adobe Illustrator is chosen as this software is easy to handle especially for beginners. This software helping a lot in creating the logo of Coursework-Kit.
- Sublime Text 3
 - For Coursework-Kit the software that most important is Sublime Text 3 which known as a clean functional and fast code editor. It is recommended to use this software as the features are great and easy to handle.
- Latex

- Latex is important software in developing Coursework-Kit as for documentation purposes. It is acceptable to use Microsoft Office instead of Latex. It is advisable to use at least Microsoft Office 2010, so that it will be easier and compatible to open back in another office software.
- Navcat for MySQL
 - Navicat for MySQL is an software that is used as platform to connect to database for Coursework-Kit System. The main reason Coursework-Kit System to choose this platform as the software contains the features that needed for the system itself which understandable and easy to handle.
- Xampp
 - XAMPP stands for Cross-Platform (X), Apache (A), MariaDB (M), PHP (P) and Perl (P). XAMPP is important in developing Coursework-Kit as this software acts as the local web server for testing and deployment purposes.
- Web Browser
 - Web Browser is needed to test the system. Any web browser is acceptable. As for Coursework-Kit, the web browser used is Chrome as it work faster for the desktop that is used in developing the system.
- Pentium P6000 Processor
 - Personal laptop, it is recommended to use at least Pentium P6000 Processor with 1.86Ghz speed. The higher the speed of the speed, the better the performances.
- 1GB RAM
 - Random Access Memory (RAM) need to be at least 1 Gigabyte so that the progress will be smooth. It is advisable to have greater space for RAM to speed up the process.
- 10GB Hard Disk Space
 - It is sufficient to have 10 Gigabyte of hard disk space but, it is better to have greater space of hard disk instead of 10 GB to ensure that the spaces are enough to support application or software that is used in developing Coursework-Kit
- Input and Output Devices
 - The input devices that used throughout the process in developing Coursework-Kit are keyboard and mouse while the output devices are monitor and printer

3. Result

As a result, Coursework-Kit System will ease the process of preparing the coursework and the analysis which will enhancing the current way of preparing the coursework. The results of each user are different according to their level.

Coursework-Kit System help to ease the process of preparing the coursework. Furthermore, all the process is conduct based on the online system that can helping in saving the uses of paper also, there is no copy and paste process anymore which users need to worry about paste wrongly or wrongly pick the CO or PO no more since Coursework-Kit System already fixed this problem.

3.1. Administrator

Administrator are the only party that allowed to give an authorization to each user according to their level of users. This is important responsibility to keep the data secure and maintain the security of the system itself. In addition, administrators are responsible to authenticate the right person before giving the authorization towards the users.

3.2. Lecturer

Lecturers are the main users for this system as this system is built to ease the process of preparing the coursework that need to be done by all lecturer for each subject they are teaching. As a result, lecturer need no traditional way of preparing their coursework anymore as Coursework-Kit System have the better way to prepare it.

To prepare the coursework, lecturer just need to enter the code subject of the subject that they are teaching. Coursework-Kit will generate the coursework according to the CO and PO automatically.

Furthermore, the process of doing the analysis of coursework are getting easier as the platform have been prepared by the system which lecturers just need to key in the students' marks according to the CO and PO that have been set. In addition, the calculation also done by the system. At the end, users can print the coursework analysis that already generated.

3.3. Course Owner

Course owner is the person that responsible to manage the Course Learning Outcome of one subject. Coursework-Kit allows course owner to approve the submitted coursework by the lecturers. Also, this system will ease the process of managing or modify the CO. Due to this, the CO are standardized and become more organized as they are the only party that authorized to modify the CO.

The screenshot shows the 'Register as a system user' form in the Coursework+ Kit application. The form includes the following fields and options:

- Name:** A text input field with the placeholder 'Your full name'.
- Genders:** Radio buttons for 'Male' and 'Female'.
- Staff ID:** A text input field with the placeholder 'Staff ID'.
- Password:** A text input field with the placeholder 'Enter your password'.
- Password Confirmation:** A text input field with the placeholder 'Confirm your password'.
- Email:** A text input field with the placeholder 'example@ic.utm.my'.
- User level:** A dropdown menu with the option 'choose user level:..'
- Buttons:** 'Reset' and 'Submit' buttons.

The form is part of a web interface with a navigation bar containing 'Home', 'Register', 'Lecturer', 'Subject', and 'Log-out' links. The footer of the page reads '© 2017 CourseWork Kit / All Right Reserved'.

The figure above shows an example of administrator module that assigning the users as their level.

The screenshot shows the 'Add New Subject' form in the Coursework+ Kit application. The form includes the following fields and options:

- Subject Code:** A text input field.
- Subject Name:** A text input field.
- Course Owner:** A text input field.
- Head of Department:** A text input field.
- Buttons:** 'Reset' and 'Submit' buttons.

The form is part of a web interface with a navigation bar containing 'Home', 'Register', 'Lecturer', 'Subject', and 'Log-out' links. The footer of the page reads '© 2017 CourseWork Kit / All Right Reserved'.

The figure above shows another role of administrator as only administrator allowed to add new subject and assigning the course owner and Head of Department.

3.4. Head Of Department (HOD)

Coursework-Kit allows Head of Department to approve the coursework that have been submitted by the lecturers. Also, this system authorizes HOD to modify the PO as HOD are the party that responsible of any changes of PO. Plus, according to their responsibility, Coursework-Kit ease HOD to manage all subject that they are responsible for.

The existence of Coursework-Kit System is a process of upgrading the current process of preparing the coursework to modern way as to keep pace towards the technology development.

The proposed system Coursework-Kit System has been successfully developed within the planned period of time. During this period, there are a lot of obstacles raised. Due to this matter, many alternatives were considered and carried out to fix the problem.

3.5. Limitation

Throughout the developing the Coursework-Kit System, there are few limitation that happen to occur especially in the phase of analyzing the problem and proposing the best solution to fix the current problem. Also, the lack of programming skill has been the biggest challenge as need more time to understand and apply the method or concept of the coding into the system. Nevertheless, the existence of Coursework-Kit System is the proof of my hard work and improvement in programming especially web programming.

3.6. Achievement

As a result, the development of Coursework-Kit System complies with its objectives. From the first phase of gathering the information of the problem statements, project aim, objective, scope and the purposes of this system to the next phase of analysis and discussion that have been made previously, it can be concluded that the objectives of this project are achieved and solve the problem of current way.

3.7. Future Planning

As the Coursework-Kit system is a new system, some enhancement might be applicable in near future. There is an idea of displaying the users profile that can be edit and update by the user itself as this will make the system smoother which users can check if there is any inaccurate information on their profile. Besides, in future, this system can be convert into mobile application so that users may be able to update and complete their tasks anytime and anywhere. Furthermore, Coursework-Kit System can upgrade its system by adding the function that allowing the users to interact with each other in form of message. This function can be considered due to problem that may arise such as user Head of Department is not understand with the CO that have been modify by the course owner, they can ask directly through this function. In future, this system is suggesting to add students as user where they can view the coursework of the subject that they are taking and view the analysis of their

marks according to CO and PO. This can help students to set their target to achieve the best of that subject.

4. Conclusion

In summary, the proposed system Coursework-Kit System automatically generate the coursework based on the CO and PO that have been manage by course owner and Head of Department. The current way of preparing coursework which is traditional way that lecturer need to copy and paste the CO and PO from another source and paste to new document to create the coursework have been upgraded by Coursework-Kit accordance to the current technology where everything done online. Lastly, the objective of this project is accomplished.

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