ITRACK- DEVELOPMENT OF AN INTEGRATED ONLINE PORTFOLIO PLATFORM FOR DEPARTMENT OF INFORMATION TECHNOLOGY

Rationale/ Introduction

The study revolves around the need to decrease the workload of the professors and improve the evaluation of teaching performance. Currently, the college uses Google Drive as a traditional tool for documenting and presenting teaching activities, instructional materials, and student deliverables, also known as end-of-semester requirements.

However, as the number of students and workloads increases, professors are facing challenges in organizing and submitting their end-of-semester requirements, which serve as evidence of both their own outputs and those of their students. Administrators may face challenges in evaluating the outputs of all professors. Google Drive has limitations such as the absence of a notification/reminder system and a tool to track the requirements that need to be submitted. Acknowledging the limitations of such tools, researchers identify the potential areas for improvement and the distinct need for an exclusive online portfolio platform tailored to the specific requirements of professors.

This platform is designed to enable them to effectively showcase their teaching outputs in accordance with predefined learning outcomes, while reducing the workload by allowing students to submit their own outputs. This platform aims to provide a more efficient and specialized solution, offering features and functionalities that enhance workflow, streamline the assessment, and facilitate the effective presentation of professors' work.

Significance of the Study

The development of iTrack, an integrated online portfolio platform, holds significant value for the Department of Information Technology (DIT) at Cavite State University (CvSU) by

enhancing teaching performance evaluation, reducing workload, and streamlining academic documentation.

1. **For Instructors** – iTrack simplifies the submission and organization of end-ofsemester requirements, allowing instructors to manage their instructional materials efficiently and track student progress.
2. **For Students** – The platform enables students to submit academic outputs digitally, monitor their performance, and manage their learning portfolios.
3. **For Administrators** – iTrack provides real-time monitoring and reporting tools to assess faculty compliance with course requirements, ensuring effective academic oversight.

By integrating notification features, automated data compilation, and performance tracking, iTrack fosters a more structured, transparent, and efficient educational environment, contributing to the continuous improvement of learning and teaching quality at CvSU DIT.

Scope and Limitations of the Study

This proposed study aims to develop the iTrack system which intends to improve and enhance the performance of the instructors, students, and administrators of CVSU DIT. The iTrack system consists of 6 modules including account management module, portfolio management module, monitoring module, notification module, dashboard module, and report module.

Security and privacy. iTrack provides security measures to protect user data and privacy. This includes user authentication, access control, data encryption and regular security assessments. This also allows users to have control over their privacy settings, allowing them to manage how their information is shared and accessed within the platform.

Device responsiveness. Designed to be responsive and accessible for different types devices like laptops, desktops or smartphones for their different screen sizes. This ensures that users can access and utilize the system regardless of their device.

Account Management Module. Account management module allows the system to register and validate the users credentials, prompted by the system to fill out specific fields. The system makes a new account for them and safely saves their 22 personal data after their

account is validated. An encrypted algorithm is used for password management, and the user's email address or phone number is used by the system as an authentication method. Information can be viewed and edited by users through user profile management. Three user roles instructors, students, and administrators have access control and permissions applied. Based on the user's account IDs, user authentication and authorization are confirmed during login sessions. Security is maintained by session management, which keeps track of user activity and expires after a set amount of time.

Instructors. The iTrack platform provides the capability to support the instructors with their teaching performance. It involves uploading, organizing, and managing instructional materials, presentations, documents and other digital files. With iTrack, it allows the instructors to track the students progress and performance, collaborate with colleagues and access and analyze data relevant to their courses.

Students. Students can benefit from the functionality of iTrack by having the ability to upload their academic works which contain their assignments, projects, research papers and other related works. It also allows students to track their academic progress and manage personal learning goals to further improve their knowledge and skills. Another function that students may benefit from iTrack is to connect with the professors in seeking guidance or assistance.

Administrators. With iTrack, it serves as a valuable resource or tool for the administrators to manage, access and analyze data, configure access for different users, outlook the progress of the instructors and students performance, and the learning outcomes to inform decision making and improve the quality of education within the DIT.

Portfolio Management Module. Portfolio management module allows the creation, organization, and display of user portfolios. With its content management capability, users may upload, organize, and categorize documents. Different access levels are given to users, such as collaboration, limited, and full access. Instructors 23 have the same degree of access as students have creating, managing, and customizing their own portfolios. Instructors have the additional ability to instructional materials, presentations, requirements, and similar professional work documents. instructors can share parts of their portfolios or other materials through collaboration. With complete access to every portfolio, administrators can keep track

of how the platform is being used, examine assessment results, modify permissions, and grant roles to instructors or students.

Search and filter. Search and filter functionality allows users to find specific resources, portfolios, or information relevant to their interests that includes files, portfolios, students, instructors, subject or other related fields. This allows users to quickly and effectively access information. Efficient navigation is enabled through the search and filter functionality of iTrack. Users can easily search for specific portfolios or filter portfolios based on colleges, outputs, students, professor and subjects. This feature enables administrators to access relevant information quickly and effectively.

Content management. The system incorporates automated data collection, compiling all submitted requirements and student outputs in real-time. This allows administrators to have up-to-date information for evaluation and analysis. Furthermore, iTrack provides graphical analysis illustrating the extent to which professors have adhered to the course syllabus, facilitating a more valuable understanding of teaching and learning capabilities.

Portfolio management. iTrack offers a detailed portfolio management system for both students and professors as described in the previous section. This includes the auto sectioning of the contents based on their descriptions, type of content, subject, or other information that a file contains.

Monitoring module. The monitoring module offers the user's activities, progress, and system performance to be monitored and evaluated by the monitoring module. This module offers an overview of user involvement and systemic progress toward learning objectives. Three functions make up this monitoring module: data 24 analysis, performance reporting, and a progress tracking capability. Progress monitoring keeps track and gathers information from the user's actions, including projects, tests, assignments, and other such tasks. A clear grasp of the user's progress over time is provided via visualizations such as graphs. To determine opportunities for growth, learning efficiency, and strengths, data analysis examines user data. Reports containing data summaries for both people and groups are generated by this feature.

Report generation. As an administrator, iTrack provides the ability to generate reports consisting of teaching performances, student progress, and platform usage. This allows them the benefit of having the ability to monitor the performances of both students and instructors. Report generation provides the percentage of the amount of progress the user has done.

Report generation includes charts in the form of pie charts or bar graphs that would provide insight on the users progress.

Notification module. By the notification module, automated notifications allow the system to notify administrators of an instructor's progress, including whether or not they have submitted their end-of-semester requirements or still need to complete them. Administrators can adjust the notification settings to get notifications for particular events or progress markers, among other things. Additionally, it can give administrators links to relevant information so they can swiftly assess particular instructor progress details or take the required action. When a student misses a deadline for an assignment, activity, or other relevant document, the system also lets the instructors aware. When an instructor creates or posts an assignment or activity on the system, the students are notified.

Notification. The iTrack system provides a notification feature that guarantees that all users receive real-time notifications for all pending requirements and overdue tasks. It provides the instructors the ability to maintain the organizational efficiency and awareness of their pending tasks within the platform, allowing students to avoid late submissions of assignments, projects and other related files, and provide 25 administrators to monitor the progress of the platform and identify potential issues within the platform.

Dashboard module. The dashboard module gives instructors and administrators a clear and understandable overview by displaying an in-depth analysis of each user's progress. The user's progress data is presented in an appealing method through the use of charts, graphs, and other practical visual components in progress visualization. This displays the teachers' completion rates in relation to the students' advancement with their outputs. Administrators can view platform usage and instructor activity levels together with course completion rates with this visualization. Users can review detailed data on the dashboard for more information through the interactive elements.

Report module. The report module provides functionality to generate a list of employees and staff who have not complied with the required submission of necessary requirements and who already comply. It gives instructors and administrators additional insights by providing reports on user progress data across different timeframes. Report generation creates reports with the users' daily, weekly, monthly, and annual progress details. Users can select which data points to include in the reports by using the Customization option,

which enables them to focus on particular areas of progress. Thorough analysis can provide detailed data analysis and visualizations, enabling users to identify trends, monitor patterns, and evaluate their instructional efficiency over time. Reports can be exported using the export capability allowing for different formats for sharing or outside analysis.

Although the iTrack system has the potential to enhance CvSU DIT's performance, one limitation within the system is the absence of a built-in communication feature between the users. As a result, professors have to depend on third-party applications to communicate.

Objectives of the Study

The study's general objective is to develop and implement an online portfolio platform, called iTrack, specifically designed for the instructors and students of Cavite State University Department of Information Technology.

Specifically, it aimed to answer the following:

1. Identify the problems through interviews and survey;

2. Analyze the problems through fishbone diagrams;

3. Design a system implementing the modules listed below:

    a. Account module enables students, instructors and administrators to set up and manage their user accounts on the platform. It's responsible for user registration, login credentials and access controls;

    b. Content module provides instructors with the ability to upload, organize and manage their learning material, presentations, documents or other digital files. It provides a centralized repository for the management of content related to courses;

    c. Portfolio management module allows students and instructors to create and customize the files by adding different types of files such 14 as syllabus, lectures, and outputs. The automatic compilation feature is also included in it;

    d. Announcement module is intended to facilitate the dissemination of information, notifications and reminders for instructors in the platform. This

helps to ensure that important information is communicated in a timely manner; and

e. Report generation module allows administrators to be able to generate graphical analyses and performance reports based on the data collected in the platform through the report generation module. Monitoring and evaluation of teaching and training activities are supported in this module.

4. Develop a web-based system called iTrack which utilizes PHP for server-side scripting language, CSS for styling, JavaScript for client-side scripting and Python for other functionalities, MySQL for database management system, and Bootstrap as a front-end framework;

5. Test the systems capabilities through unit testing, system testing, test cases, and integration testing are used to verify and assess the system's capability and usability; and

6. Evaluate the system iTrack, by using ISO 25010 standard, which provides guidelines and recommendations for evaluating software product quality. This evaluation will focus on the systems performance, security, reliability and maintainability, ensuring that iTrack is a robust and effective solution for an online portfolio platform.

Expected Outputs

The study, iTrack: Development of an Integrated Online Portfolio Platform for College of Engineering and Information Technology, aims to address the need for a platform for professors to document and present their end-of-semester requirements. The study also aims to reduce the professors' workload by allowing the students to submit their own outputs in the platform. The target users of the platform are students, professors, and the administrator. Within the platform, students have the capability to create accounts and upload their outputs. On the other hand, professors can utilize the platform to upload various requirements other than student outputs which will be compiled into a portfolio. The platform includes the ability to upload and display the course syllabus, allowing them to effectively track their weekly

lessons and the expected deliverables from students. Moreover, administrators have the capability to assess the progress of professors in relation to the course syllabus through visual representations, providing a graphical overview of their accomplishments which they can use for any academic purposes. Additionally, administrators can also view the folders of the endof-semester requirements, and set deadlines which will trigger notifications to ensure timely submission.

The platform also incorporates access control features, with different levels of access depending on the user type. Specifically, for students, their access is limited to the courses in which they are enrolled. They will only be able to access and interact with the content relevant to their specific courses. Additionally, students are restricted from modifying or altering files belonging to other students. They do not have the ability to delete or update files uploaded by their fellow classmates. This ensures the integrity and security of each student's work within the platform. Professors, on the other hand, have higher levels of access and control within the platform. They can manage and modify course materials, including uploading and updating the uploaded documents. As for administrators, they have the highest level of access and control within the platform. They can oversee and manage the overall system, including user accounts, course enrollments, and platform settings. This level of access enables administrators to effectively monitor and evaluate the platform's functionality and ensure its smooth operation for both students and professors.

However, the study acknowledges certain limitations. One limitation is the absence of a built-in communication feature within the platform for professors and students. As a result, professors have to depend on third-party applications to communicate with students and share subject codes. Additionally, professors are restricted from accessing portfolios that are not under their ownership.

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