**Android-Based College Planner**

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**ABSTRACT**

A lack of ability to prioritize activities and manage schedules is one of the reasons why college students suffer from poor academic performance. As a solution, students often make use of paper planners that can be custom made or readily bought on bookstores. However, there are underlying problems with the use of paper planners in terms of efficiency. Thus, this paper aims to develop and design an Android application that will help students organize and manage their schedule effectively. To determine its effectiveness, thirty-two UPLB students were asked to test and evaluate the overall ease of use, user interface design, satisfaction and usefulness of the application. The results showed a mean percentage score of 87.81%, 87.5%, 89.06%, and 84.63% respectively. Thus, the application was effective overall.

**INTRODUCTION**

Along with rigors of college education, students often work and participate in extracurricular activities as well as maintaining personal relationships. College students may become overwhelmed with feelings that there is not enough time to complete all their work adequately. According to Dipboye, Philips, Macan and Shahani (1990), many college students suffer poor academic performance mainly due to lack of ability to prioritize activities and manage schedules.

There is no doubt that it is important for college students to organize and manage their activities effectively. Many students are still using the traditional way to create a college planner which uses a pen and paper. However, the problem with paper planners is that it has limited capacity to store information. There is no way for the student to arrange the activities according to priority since editing and deleting information can make a disorganized page. In addition, paper planners can be large and bulky with frequent updates which may cause difficulty in tracking your activities. Smaller versions often don’t have enough writing space. Hence, it will just require more paper. And lastly, it can be easily misplaced with no built-in backup system (Gray, 2013).

With the emergence of smartphones, college students were able to use different mobile applications not only for entertainment, but also for educational purposes (Strike, n.d.). Thus, the proposed solution is to develop and design an Android-based college planner which will provide more functionalities and improved user experience. The application will replace the manual system, the paper planner, and solve its existing problems stated above. The gained knowledge in the development of the system will be an effective tool in providing the needed skills of ICS students in mobile development considering the rapid development of technology such as smartphones in almost all fields of operation and its use in relation to information management.

**REVIEW OF RELATED LITERATURE**

Different kinds of educational apps became widely available in the market. The various types of educational apps such as planners differ mainly from the technology, user interface, features and functionalities.

On the other hand, several studies have been conducted concerning on the improvement of the features of a planner. According to Brad Monroe, a senior at George Washington University who has experimented with scheduling and organizational apps for educational purposes, such apps can be a huge benefit for students who fail to meet deadlines (Lytle, 2012).

According to Truluck, April, Zick, Garibaldi and Rush (2002), some study planning products have features that evaluate the user’s progress in terms of percentage complete. However, no product has assisted the user in setting up, maintaining and monitoring study goals that are customized for the user based on personal circumstance. Thus, they implemented a study planner system that provides a method for creating personal scheduled study plan. It is established for a user based on a session frequency. The progress of the user may be monitored and displayed in a form of complete and incomplete activities.

Hamalainen, Porras and Koskinen (2005) also conducted a study in maintaining a student’s personal study plan. The main objective of the study is to decrease the unnecessary supervision and administrational work by automatically guiding the students to make proper choices while selecting their studies.They implemented the study tool by basing the personal plan created by the student on the rules defined in the curriculum by his/her university and department. The application was proven success after it was taken in use in the Department of Information Technology at Lappeenranta University of Technology.

Pantic, Djordjevic, Rothkrantz and Kopelaar (2008) designed an Automated Study Planning (ASP) system to assist the students in organizing their studies. According to them, a conventional organized advice about planning of studies is given to a student personally by advisers. However, two major problems are encountered with the conventional system. (1) A lot of study-advisor’s time is needed to help the individual students by giving quite routine advice about making a good study-planning. (2) Students cannot be individually advised as quickly as they probably want to be. These two problem initiated them the idea of automating the existent study-planning system.

After implementing, the researchers conducted a user-test. Students and teachers from Information Technology and Systems used the app and the test shows that the generated advice of ASP is understandable and helpful.

On the other hand, a study about project planning was conducted by Jones, Klasnja, Civan and Adcock (2008). The basis for an association of information is the project as well as the planning involved in its completion. According to them, project involves planning, and people often create simple to-do-list to elaborate planning documents.

Thus, the main feature of the planner is the Task Management. Users can structure a project as a hierarchy of sub-projects and basic task, and set the priority of a task through drag and drop. The planner also provides a grouping task-relevant information and connecting this information to important dates and times. Other features are: Outline, Re-order, Folders as Tasks and Information Integration.

To assess the overall usefulness of the planner features, Jones, Klasnja, Civan and Adcock performed an interim evaluation. Twenty-one participants took part in the evaluation. They first watch a 5-minute video that described the planner and its features. Using the planner, the participants were asked to try each feature of the planner. After the testing, the participant rated each feature on a one to five scale. Results showed a high overall rating; however, Folders as Task and Task Management were rated significantly lower than each of the other features.

Yarboi and Tetteh (2014) implemented an interactive web-based application that will be used by students of California State University San Bernandino. The proposed system replaces the manual planner given to students by the school. According to Yarboi and Tetteh, the manual way of storing information is not effective, since the student is limited in what to write and how to keep it safe. Their application fixes all these limitations in the manual system.

They conducted an interview with students, 95% of the students were in support the development of the interactive student planner. Most of the difficulties encountered in designing the planner were not actually from the requirements of the users but from the setting up of the database itself.

In this paper, the proposed system is different in that it will integrate a to-do-list planner and other scheduling and organizational features into one single app but will provide more functionalities. In addition, the proposed system will run in an Android platform unlike most of the reviewed applications which are web-based.

**METHODOLOGY**

The main entity of the system is the student, the primary user of the application. The features were determined through literature reviews and existing similar applications available in the market.

The features that were integrated in the application are as follows:

1. **Instructor**

The student can create a list of instructors by supplying their details. The student can also create a timetable of schedule (consultation hours) for every instructor.

1. **Course**

The student can create a list of courses that the student’s currently taking. The courses created will be used for the other features of the application.

1. **Note**

The student can take notes for every course created. Hence, the student can also arrange the notes according to course.

1. **Photo Note**

The student can create a photo note for every course by selecting an image from the phone’s gallery or directly from the camera. The student can also arrange the photo notes according to course.

1. **Absence**

The student will have a list of courses based from the course feature. In the list, the course code, course type (lecture, recitation, laboratory) and the student’s current number of absences in a particular course would be displayed. The student can add an absent by selecting the date of absence. Clicking a course from the list would take the student to another interface wherein the list of date of absences is displayed.

1. **Task**

This would be the main feature of the application. The student can create a task for every course from the course feature. There would a three lists of tasks, upcoming, late and completed tasks. The student can filter the tasks by course, due date, weight (assignment, exam, quiz, group meeting, etc.) or priority. When an upcoming task is completed, the student must mark it as done. The task would be automatically moved to the completed tasks list. If a task was not marked as done before the due date, the task would be moved from the late tasks list. The student can also create a status bar notification for a specified date for each upcoming task. And lastly, the student can display a widget of the upcoming task list in home screen.

1. **Sharing**

The student can extract the database file from the application and save it to a folder specified by the application. The backup is the file that will be used for data sharing via Bluetooth. When the database is received, the student can import it to the application by locating it through the file manager.

**EVALUATION**

At least 30 UPLB students will test the application. They will be given a copy of the detailed specification of the application. After the system testing, the testers will be given a Likert-scale type of questionnaire for evaluation. The metrics that will be used for the evaluation are as follows:

1. Ease of use – The student can use and learn the application without deliberate effort
2. User interface – The interface design of the application is visually stimulating
3. Satisfaction – The student has a positive attitude towards the use of the application
4. Usefulness – The student believes that using the application would enhance his performance

The effectiveness of the application will be determined based from the result of evaluation.

**RESULTS**

**Table 1.** Frequency distribution of feedback from 32 UPLB students towards ease of use

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Ease of use** | 5 | 4 | 3 | 2 | 1 | Total |
| SA | A | N | D | SD |
| I found this app easy to use. | 15 | 16 | 1 | 0 | 0 | 32 |
| I can use it without written instructions. | 10 | 15 | 7 | 0 | 0 | 32 |
| I can navigate through the app easily. | 15 | 16 | 1 | 0 | 0 | 32 |
| I can accomplish task quickly. | 20 | 10 | 2 | 0 | 0 | 32 |
| The language used in the app is easily understood. | 17 | 14 | 1 | 0 | 0 | 32 |
| I felt very confident using the app. | 12 | 18 | 2 | 0 | 0 | 32 |

**Table 2.** Frequency distribution of feedback from 32 UPLB students towards user interface design

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **User Interface (UI)**  **Design** | 5 | 4 | 3 | 2 | 1 | Total |
| SA | A | N | D | SD |
| The app has clearly marked way-finding buttons | 13 | 12 | 7 | 0 | 0 | 32 |
| The UI is consistent (font, color, layout). | 22 | 7 | 3 | 0 | 0 | 32 |
| The UI design is engaging and attractive. | 22 | 6 | 4 | 0 | 0 | 32 |
| The prompts for inputs are clear. | 13 | 11 | 8 | 0 | 0 | 32 |

**Table 3.** Frequency distribution of feedback from 32 UPLB students towards satisfaction

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Satisfaction** | 5 | 4 | 3 | 2 | 1 | Total |
| SA | A | N | D | SD |
| The app does everything I would expect it to. | 16 | 13 | 3 | 0 | 0 | 32 |
| The app works the way I would want it to work. | 15 | 13 | 4 | 0 | 0 | 32 |
| The app is well-designed for college students | 20 | 9 | 3 | 0 | 0 | 32 |
| I found the various functions/features in the app were well integrated. | 23 | 9 | 0 | 0 | 0 | 32 |
| Using the app was an enjoyable experience. | 16 | 14 | 2 | 0 | 0 | 32 |
| I think that I would use this app frequently. | 12 | 17 | 3 | 0 | 0 | 32 |

**Table 4.** Frequency distribution of feedback from 32 UPLB students towards usefulness

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Usefulness** | 5 | 4 | 3 | 2 | 1 | Total |
| SA | A | N | D | SD |
| Using the application would enable me to accomplish tasks more quickly | 13 | 14 | 5 | 0 | 0 | 32 |
| Using the application would improve my scholastic performance | 11 | 14 | 7 | 0 | 0 | 32 |
| Using the application would increase my productivity in college | 14 | 11 | 7 | 0 | 0 | 32 |
| Using the application would enhance my effectiveness in college | 12 | 11 | 9 | 0 | 0 | 32 |
| Using the application would make it easier to do my studies | 18 | 11 | 3 | 0 | 0 | 32 |

**Figure 1.** Mean percentage score of 32 UPLB students

**DISCUSSION**

Thirty-two UPLB students were asked to evaluate the application by scoring its overall ease of use, user interface design, satisfaction and usefulness, a total of 21 Likert-scale type questions.

Based on the frequency distribution of feedback from Tables 1, 2, 3 and 4, it can be observed that majority of the students who participated in the evaluation answered agree (4) and strongly agree (5) for each questions given.

To further gauge the effectiveness of the application, the total score for the four metrics for each student were computed. The mean of the scores in percentage was then calculated. Based from the results (as shown in Figure 1), the application was able to score significantly high in every metric. Thus, it can be concluded that the application was effective as it was tested to be easy to use, visually attractive, satisfying and useful.

**CONCLUSION AND FUTURE WORK**

College Planner is an android application that will be used by college students to organize and manage their schedule effectively. The application replaces the manual paper planner. Although there are several planner applications available in the market, College Planner is different in that it will integrate different organizational apps relevant to the planner into one single app. This would allow College Planner application to provide additional functionalities such as creating contacts from instructors as well as their consultation schedule, creates note and photo notes and organize them by course, and record absences for each course. The application developed was proven effective as it was able to have a significantly high mean percentage score on the overall ease of use, user interface design, satisfaction and usefulness with 87.81%, 87.5%, 89.06%, and 84.63% respectively based from the Likert-scale evaluation on thirty-two UPLB students.

To further enhance the application, a login feature will be considered where students can automatically sync data to other devices online. The application will also be improved by integrating Google calendar API to the task feature so that the students can have a clear view of their upcoming tasks or activities. And lastly, since the application is only available for android devices, future developers may create an iOS version of the application.

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