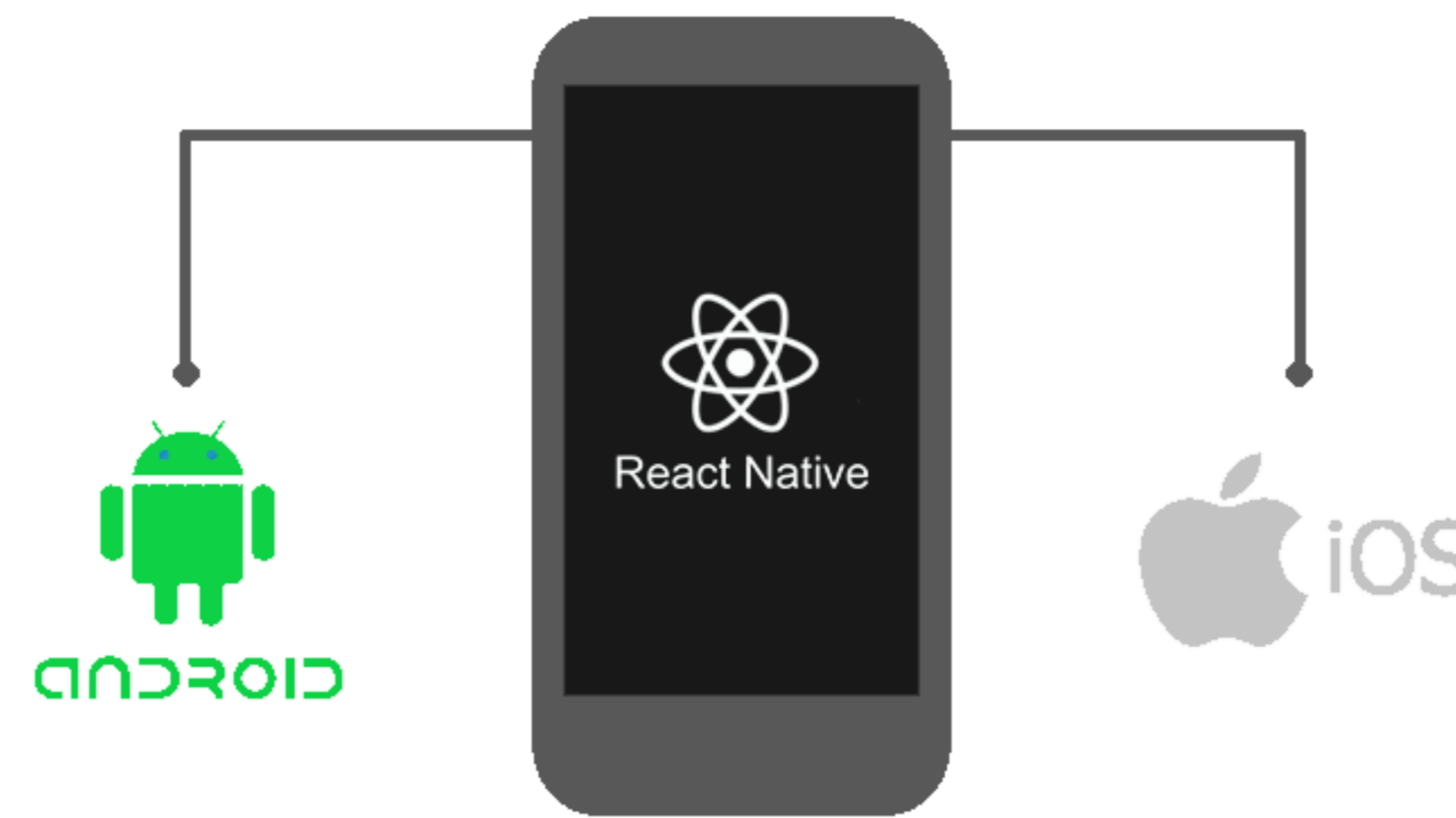


Mobile Device Programming with Project-Based Learning



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OBJECTIVES

- Students can design and implement a mobile application by themselves
- Students can learn new opensource library and apply new knowledge in their work
- Students can solve programming errors by themselves

METHODS

The project is divided into three main pieces called Assignment 1, 2 and 3. The work sequence is the following.

1. Divides students into a small group. Next, each group must search for the project topic and area based on their interesting and National Software Contest topics
2. Starts their assignment 1 which focuses on user interface and basic database. All basic knowledge is provided and taught in class. Nonetheless, there must analysis, design and implement application base on their topic requirement.
3. Declares the scope of final work or assignment 3 which is the extension application from assignment 1. Then they must review an example application that relates to their final work scope as assignment 2. They must focus on how to design and implement an application.
4. Studies and presents their review application. Each group shares their knowledge with the other group.
5. Implement their final work with the knowledge from class and review application. During each step, formative assessment is used such as observation, discussion, and feedback. Finally, summative assessments are used on each assignment presentation.

RESULTS

In assignment 1, all students can create simple mobile device applications with react native. Nonetheless, almost all screens are work separately.

In assignment 2, they can learn the new programming library by themselves. And they also generate the online article to share their knowledge.

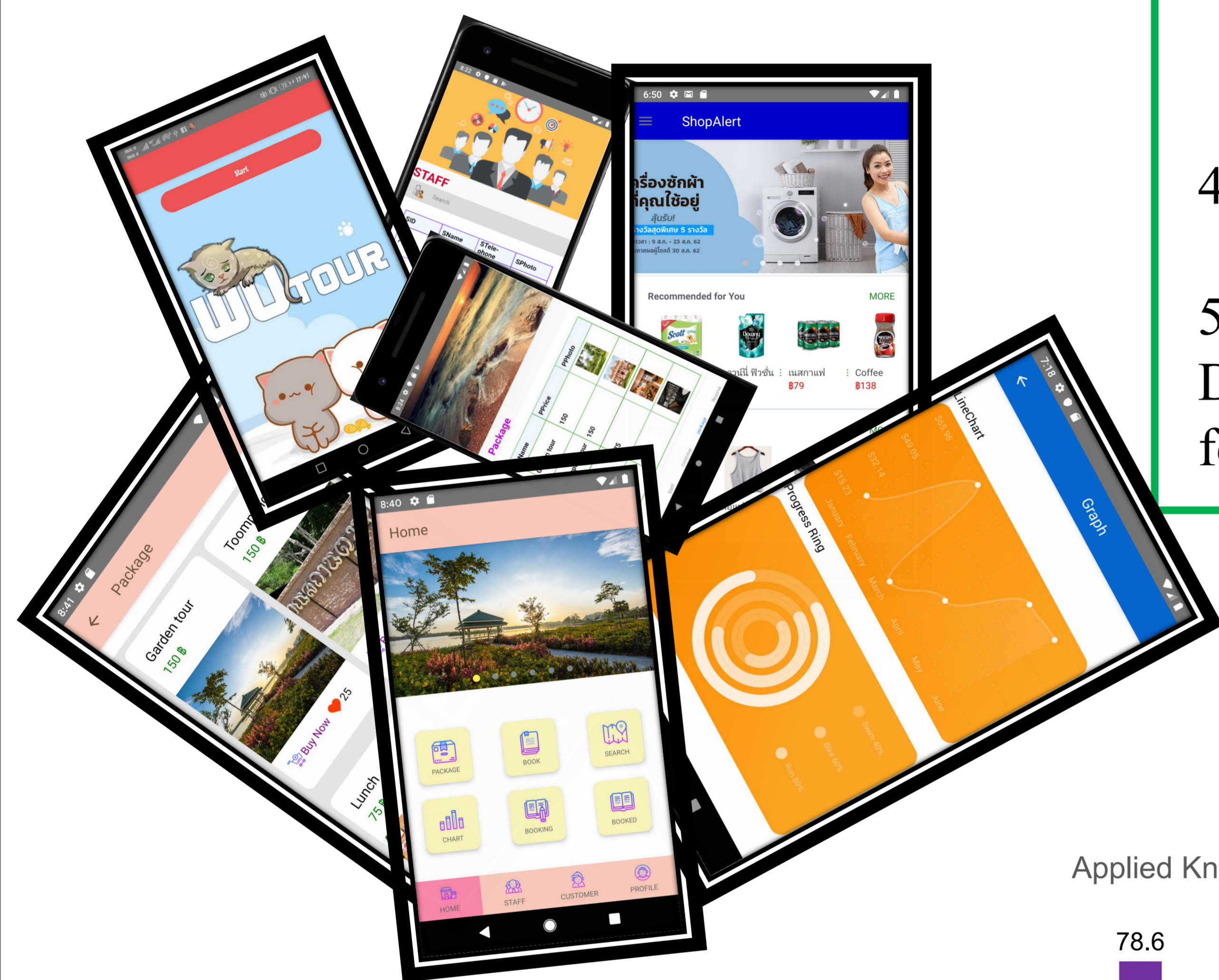
In assignment 3, they implement the incomplete application because of time limitations and their knowledge. Nonetheless, they still gain some experience in mobile device application development. At the end of work, the Google form survey is used to collect student opinions. 78.6% gain experience on application design and error correction, 64.3% have confidential more than 50 percent to implement mobile application under specific scopes, only 7.6% are not confident to implement mobile application and 78.5% think they can learn the new programming package by themselves.

CONCLUSIONS

Project-Based Learning (PBL) is a very powerful tool for mobile application development. Nonetheless, PBL takes time and it makes a heavy workload for student. In exchange, student can gain more experience for all software development life cycles. This subject mainly focuses on software implementing. Nevertheless, students apply much knowledge in their Project as they can be seen in bar graph. Although the final work is not the complete application, students can manage simple projects by themselves. Moreover, some student has more confidential to learn a new thing in the future.

References

1. *Gold Standard PBL* (27 September 2019)
Retrieved from
<https://www.pblworks.org/what-is-pbl/gold-standard-project-design>
2. vans, C. (2013). Making Sense of Assessment Feedback in Higher Education. *Review of Educational Research*, 83(1), 70–120.
<https://doi.org/10.3102/0034654312474350>



Self Learning Confidential

- less than 50%
- 50-70 %
- 70-80%
- Greater than 80%

