**Department: Information Technology**

**Advanced Diploma in Information and Communications Technology (ADICT1) & Bachelor of Information and Communications Technology (BINCT1)**

**MODULE / SUBJECT CODE: PBDE401 | PBDV301**

# Project 2 – Native Mobile Application

# Due Date – Refer to the study guide

# Marks - Refer to the <u>Assessment Rubric</u> Project

# Task and General Information

Collaborative projects afford students the opportunity to fully engage in their learning by communicating their needs, ideas, and opinions. This not only helps to cultivate competencies in various areas of software and application development, but also prepares them for future employment opportunities and other projects.

**Establishment of the Project Team**

This is a group project evaluation, and each group must strive to represent diverse knowledge, skills, and expertise. The following are the criteria that ALL groups must satisfy:

1. **Group Name**: Each group must have a unique name that best represents them.
2. **Group Size**: 10 - 12 members per group.
3. **Diversity & Inclusiveness**
   - 4-6 group members must be from the Diploma in ICT in Applications Development.
   - 1-2 group members must be from the Diploma in ICT in Business Analysis.
   - 3-4 group members must be from the Bachelor of ICT.

4. **Group Leader:** Each group must elect a "group leader".

**Each group member must**:
- Contribute to overall project objectives.
- Complete individual deliverables.
- Provide expertise.
- Work respectfully with other group members.
- Find solutions to problems and not make excuses.

Any group that does not meet the criteria outlined in this document will be invalidated except in exceptional cases communicated and acknowledged by the lecturer via email before the project begins. Note that a member of one group may not be allowed to migrate to another group. Any unforeseen challenges should be discussed with the lecturer. Failure to adhere to the criteria will result in penalties that will negatively impact all group members.

While this project emphasizes group work, it is the responsibility of each individual student to ensure that they understand the curriculum for this module and the requirements of the project.

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**Project Ideas**

As a group, you must choose from the following identified challenges/issues that affect the Durban University of Technology (DUT) community and develop a simple yet innovative solution that addresses it. The challenges/issues identified are coded under the following themes:

- **Healthcare**

  A clinic booking system allows students to easily schedule appointments with healthcare professionals without having to physically go to the clinic or spend time on the phone. This saves time and effort for both students and clinic staff. This can lead to better overall care for students and a more efficient use of clinic resources. However, the institution still uses a manual paper-based system to record and keep track of students and staff who need medical attention. To transform this traditional method and help streamline the appointment process, you have been assigned a task of helping the Clinic unit by developing an Android native app that will assist students and staff to easily access clinic services and book appointments. The app should be able to remind students and staff about their upcoming appointments, reducing the likelihood of missed appointments.

- **Student Support**

  In the pursuit of academic success, students may encounter various challenges, including financial constraints and other difficulties that can impede their progress. To address these issues, a supportive framework could prove beneficial by providing a platform for students to extend assistance to their peers who may be experiencing challenges in accessing textbooks, educational resources, or other essential items. In this regard, you have been entrusted with the responsibility of developing an Android native application that can enable students to connect and receive support for both educational and non-educational needs. The app will serve as a comprehensive helper system, empowering students to leverage the collective strength of the community to overcome any obstacles and achieve their academic objectives.

- **Safety and Maintenance**

  Securing a secure and efficient learning milieu for students, staff, and faculty members is paramount in the pursuit of academic excellence. In realizing this objective, the upkeep of a university campus plays an integral role. Nevertheless, with the vast expanse of the campus and the multitude of buildings, keeping tabs on areas requiring maintenance can pose a challenge. To surmount this hurdle, it is vital to instil a culture that encourages students and faculty members to report any maintenance issues they encounter promptly. As such, you have been entrusted with the responsibility of aiding the Maintenance Unit by developing an android application that allows individuals to report campus areas that necessitate maintenance, thereby streamlining the process.

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- **Education**

  Pursuing teaching assistant (TA) and tutor roles offered by academic departments can be highly advantageous for both undergraduate and graduate students. These positions provide a wealth of benefits, including the opportunity to develop teaching skills, gain a deeper understanding of course material, network with faculty and peers, and make meaningful contributions to the academic community. Nevertheless, in order to apply for these coveted positions, academic departments require a streamlined and efficient process. An Android application that allows interested students to submit their relevant details for the purpose of shortlisting and scheduling appointments would be an ideal solution to meet these needs.

You are required to use Java Android Studio is the official integrated development environment (IDE) for Android app development. It offers a range of tools and features to help you build, test, and deploy your app. You can download Android Studio for free from the official Android developer website.

The identified problem for this project must be feasible within the given time-frame, while avoiding triviality and unnecessary complexity. The **Scrum development process**, which is based on iterative and incremental procedures, will be utilized to achieve the project's objectives. Scrum is a fast, adaptable, flexible, and effective agile framework that delivers value throughout the project's development.

The minimum project's assessment requirements include the following:
- application's presentation of a sign-up and login interface,
- a menu interface that handles the solution's essential components,
- creative features that address the identified challenge/issue,
- data store (such as a rational database) that can store and manage application data persistently

Upon conceiving a potential solution for the project, the group leader must immediately contact the lecturer for review and approval, with the aim of exploring new ideas rather than revisiting prior ones. This recommendation serves a dual purpose: it enables students to broaden their knowledge and gain diverse insights to enrich their application development experience, as well as assists them in constructing a portfolio that is appealing to prospective employers.

Approval/decline feedback will be provided within 24 hours of submission. The proposal to be sent to the lecturer should specify how the aforementioned requirements will be met and also include tentative components such as a UML design diagram, wireframing for the mobile app (at least four screens), and highlight potential APIs and frameworks to be employed in the solution. **Due date for proposal: 31/03/2023**

You are required to use Java as the primary programming language for your Android app development. Android Studio is the official Integrated Development Environment (IDE) for Android app development (You can download and install it from the official Android Studio website but the machine in the I.T labs already have it installed). As you start building your apps, it's important to follow best practices for mobile app development. This includes designing your app with a user-friendly interface, optimizing for performance and battery life, and testing your app thoroughly to ensure it works well on a variety of devices.

It is advisable to proactively communicate any unexpected obstacles to the lecturer in a timely manner. Although this project emphasizes collaborative effort, it is incumbent upon each student to comprehend the module's syllabus and the project's demands.

*Furthermore, it is crucial to recognize that each week of this project will be treated as a Sprint, and the lecturer may spontaneously select any group to exhibit their work-in-progress and engage in a Sprint Retrospective.*

*****Additional information regarding the evaluation criteria, documentation requirements, and presentation guidelines will be conveyed at a later time*****