COMP2750/COMP6750 – APPLICATIONS MODELLING AND DEVELOPMENT 2024 ASSIGNMENT THREE

Individual Task

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Task2

Native app development vs cross-platform development

The basic difference between Native and cross-platform development depends on for which operating systems an application is supposed to build up. Native applications are built for a specific operating system either Android or iOS. Their application is coded in specific programming language for both Android and iOS. In simpler terms, for both OS there is a different language required just like different languages are required to talk with people from different places. For instance, English to talk to someone from America and Hindi to talk to someone from India. On the other hand, cross-platform application allows a single code that can be used for different operating systems (OS). For example, to speak universal language that can be understood by people from different countries.

Building app with native development gives fast and more efficient performance as they are built for a specific platform using the platform's core programming language and APIs. API stands for Application Programming Interface; it sets rules and protocols that can be helped as intermediary between different components. One application can request data or service from another application through API, just like a waiter listens our food request and brings it from kitchen in a restaurant. Along with this, Native developed app gives more security to user's data, smoother user input and output experience and provide a richer, more integrated user experience. The disadvantage of using Native development would be more cost, more development time needed and lack of code reusability, that is any code can not be reused in any other functionalities.

Using cross-platform development approach has benefits such as low costs, codes can be reused, that is a single codebase can be used for both iOS and Android. Moreover, reusing the code improves productivity that helps to build the application faster. Also, when using a single code, it becomes easier to maintain the application. However, while using cross-platform application, it adds an extra middle man (extra layer of code), which help communicate with device's operating system but eventually lowers performance, difficult integrations; that is some features are needed to integrate on native platform which makes cross-platform integration difficult, delayed platform features that is it takes longer as separate updates are required for newer features. These are some some of the disadvantages which comes along while using Cross platform development.

Selecting Native vs cross-platform depends on the factors like audience, budget, development timeline, performance and security needs. (Schmitt, 2023)

ACS code of Professional ethics

a. relevant points in the code of professional ethics (ACS)

According to the scenario given, there is an unethical behavior done by one of my peers by using my proprietary code and not giving me credit for it. Moreover, this situation is worse when it is downplayed by the development lead of our project. Such behavior compromise principals of code of professional ethics given by ACS (Australian Computer Society).

1. 2.1 HONESTY

- b. Not misrepresent any action, situation or capability of yours, your colleagues, your employer, or others with whom you interact, whether directly, indirectly or by omission.
- My peer misrepresented the origin of the code by not giving proper credit.

2. 2.2 TRUSTWORTHINESS

- d. Respect the privacy, confidentiality and integrity of any personal or proprietary information that comes into your possession, including data relating to individuals or other stakeholders.
- Using code without permission and without giving credits violates the privacy and integrity.
- g. Be competent in all that you attempt to undertake. Strive for quality and highlight resource constraints which may offer outcomes.

- By using the code written by me, my peer was not being competent in what he attempts to undertake.

3. 2.3 RESPECT

- g. Respect others' intellectual property.
- My peer is disrespecting the intellectual property rights of others by using my proprietary code without my permission.

b. choices / options available

There are several choices to raise a voice against this kind of behaviour. The ACS code of professional conduct provides with the possible actions and choices one can opt in such scenarios,

- According to the code 1.2.6 b, taking appropriate action against who engage in behaviours contrary to this code.
 I must firmly reiterate my professional position that using code without permission is unethical, by either reporting or complaining further.
- 2. Under the code 1.2.1 b stating "raise with stakeholders any potential conflicts between your professional activity and legal or other accepted public requirements" and 1.2.6 b, stating "take appropriate action against unethical behaviour", after the problem was downplayed by development lead, the issue can be raised to higher authorities within the organization.
- 3. Seeking guidance from ACS is also an option, ACS code 1.2.6 mentions that "the ACS can help you resolve ethical dilemmas."
- 4. Declining to participate, the codes
 - 1.2.3 a "Reject and not make any offer of bribery",
 - 1.2.4 e "Advice your stakeholders when you believe a proposed project, product or service is not in their best interest"
 - 1.2.6 f "Refrain from any conduct or action in your professional role which may tarnish the image of the profession or detract from the good name of the ACS."
 Reflects that it is better to not participate further in the project until the issue of unethical behaviour is solved.

c. The relevant ACS codes that guide to prioritize this event

1.2.1- The primacy of public interest:

This principle states to uphold public interest higher than personal or sectional interest. Using code without permission violates intellectual property rights, which is not in favour of public interest.

1.2.3- Honest:

The code guides for utmost honesty and to have integrity in professional actions and decisions. They guide to not accept and not be misled by such behaviours of peers or development leads.

1.2.4 Competence:

The code mentions to act with competence, that is to respect stakeholder's proprietary interests and take responsibility of your work. This guides to address the unfair use of code thoroughly.

1.2.6 Professionalism:

The code teaches to take appropriate action against such peers and prioritize resolving the ethical breach.

d. This is what I will do on the basis of above 3 points:

- 1. I would firmly raise the issue with further higher authorities in the organization such as department heads or ethics officer.
- 2. Additionally, I would ask for the guidance to ACS itself.
- 3. Even after such actions, the organization does not come up with any solution. I will refuse to work under such unethical environment, as the code suggests to avoid compromising professionalism.

(ACS, ACS Code of Professional Conduct, 2014)

(ACS, ACS Code of Professional Ethics, 2023)

Test case templates

Summary of tests outlined in this document:

Test Number	Test Name	Page Number	Date Run	Run by
01	Total cost when vegetable selected and fruit not selected	1	14/5/2024	Jhanvi Thakkar
02	Total cost when fruit selected and	2	14/5/2024	Jhanvi Thakkar

vegetable not selected			
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Test Case Number: Test_01

Test Name: Total cost when vegetable selected

and fruit not selected

Test designed by: Jhanvi Thakkar Version number: V 1.0

Date test run: 14/5/24 Test run by: Jhanvi Thakkar

Test priority: High

Test purpose and goal: (what is this test aiming to show?)

Verify total cost when vegetable selected and fruit not selected

Test setup instructions: (what is needed to be able to run this test)

Snack.expo.io; Run this on Android

Test preconditions and dependencies: (Other tests already run)

None

Test Steps:

Step #	Step Instruction	Expected Result (What should the tester see after completing the step	Actual result seen in test	Step passed? (yes/no)
1	User selects a vegetable from the "Select Veggie" dropdown list (e.g. Select Potatoes - \$5)	Potatoes - \$5 should get selected	Potatoes - \$5 is selected	Yes
2	Leave the "Select Fruit" dropdown unselected	No fruit should be selected from the dropdown	No fruit selected	Yes
3	From "Oty" dropdown corresponding to vegetable selected, select a quantity (e.g.2)	"Qty" displayed should be 2	"Qty" 2 is selected	Yes
4	Click on "Calculate Total"	The Total cost should be calculated and displayed. i.e. \$10	Total cost of order = \$10	Yes
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6				
7				
8				
9				
10				
11				
12				

Test post conditions: (Anything that needs to be done after completing the steps)

N/A

Test Signed off: Jhanvi Thakar

Test Case Number: Test_02

Test Name: Total cost when fruit selected and

vegetable not selected

Test designed by: Jhanvi Thakkar

Version number: V 1.0

Date test run: 14/5/24

Test run by: Jhanvi Thakkar

Test priority: High

Test purpose and goal:	(what is this tes	st aiming to	show?)
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Verify total cost when fruit selected and vegetable not selected

Test setup instructions: (what is needed to be able to run this test)

Snack.expo.io; Run this on Android

Test preconditions and dependencies: (Other tests already run)

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Test Steps:

Step #	Step Instruction	Expected Result (What should the tester see after completing the step instruction)	Actual result seen in test	Step passed? (yes/no)
1	User selects a fruit from the "Select Fruit" dropdown list (e.g. Select Grapes - \$5)	Grapes - \$5 should get selected	Grapes - \$5 is selected	Yes
2	Leave the "Select Veggie" dropdown unselected	No vegetable should be selected from the dropdown	No vegetable selected	Yes
3	From "Oty" dropdown corresponding to fruit selected, select a quantity (e.g.2)	"Qty" displayed should be 2	"Qty" 2 is selected	Yes
4	Click on "Calculate Total"	The Total cost should be calculated and displayed. i.e. \$10	Total cost of order = \$10	Yes
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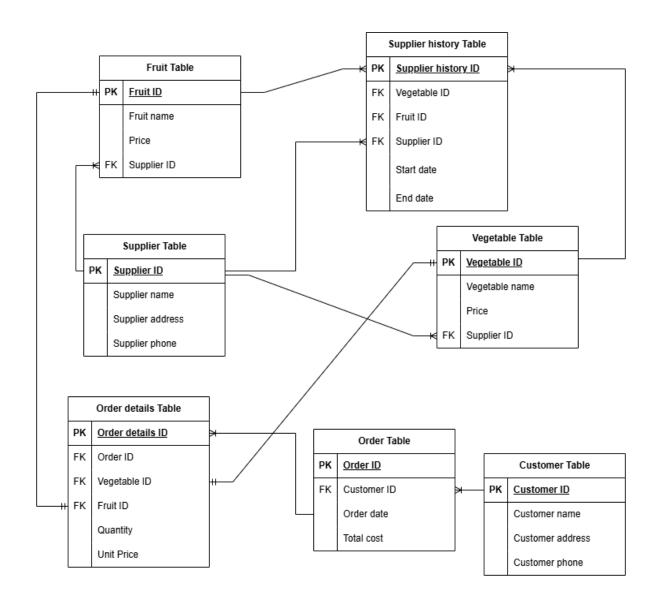
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Test post conditions: (Anything that needs to be done after completing the steps)

N/A

Test Signed off: Jhanvi Thakkar

Relational schema diagram



The relational schema diagram above represents various entities and their relationships. Orders are tied to specific customers; however, a single consumer can place several orders (one-to-many). Fruits or vegetables can be added to an order in multiples, and each item entry is connected to a single order (one-to-many). Over time, a fruit or vegetable may have more than one provider history record; yet, each history record is unique to that one fruit or vegetable (one-to-many). A single supplier is linked to a single product item at any given moment, even though the supplier may offer several fruits or vegetables (one-to-many). Furthermore, each order item may have a one-to-one optional relationship and be either a vegetable or a fruit, but not both.

References

ACS. (2014, 4). ACS Code of Professional Conduct.

ACS. (2023, 3 14). ACS Code of Professional Ethics.

Schmitt, J. (2023, 6 19). *circleci blog*. Retrieved from Native vs cross-platform mobile app development: https://circleci.com/blog/native-vs-cross-platform-mobile-dev/