UNIVERSITY
OF
JOHANNESBURG

FACULTY OF SCIENCE

ACADEMY OF COMPUTER SCIENCE & SOFTWARE ENGINEERING

MODULE	IT18X37/IT00137
	Mobile Programming
CAMPUS	APK
Exam	July 2020

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MODERATOR   PROF BL TAIT (UNISA)

DURATION   120 minutes   MARKS   100

MEMO

Question 1

You have been asked to design an application for a community to help them with the Covid19 crisis. The head of the Community Groups Association (CGA) has asked you to propose an application that will help them track physical encounters with other people. To provide important news updates on the Covid19 virus as well as the lockdown level rules and how they apply to your community. The application should also allow people to communicate with one another on any Covid19 related topics.

The CGS represents a range of communities in diverse circumstances
The proposal should be sure to include:

- [10] An introduction to outline the essay
- [30] A background section to provide basic information for non-technical people to be able to understand the essay and decisions being made. Make sure to include a discussion on how the development will consider the diverse range of communities
- [50] A body that discusses all the consideration that should be taken as well as the recommendation for the two applications. You have to make consideration based on the broad range of people that will have to use this application and how you intent to make is easy for them to use the application. ALL consideration must be clearly stated and motivated.
- [10] A conclusion to tie everything together.

Introduction [10]:
The student should clearly indicate each section of essay and outline the design in a logical order.
The student should add a small overlap from the introduction into the background sections.
Background [30]:
The background should include all the component that decisions and consideration are based on for the body of the essay.
The background should focus on the security and communication aspects of the first application as well as the security concern of the second application.
Marks are awarded based on the depth of the background as well as the logical consideration of each section.
Body [50]:

Each consideration and recommendation must be motivated (a mark is only awarded if the consideration/recommendation is logical and motivated).

Key points that should be include:

- Target audience -> broad -> how to make it easy for everyone
- User interface -> for young and old
- User Experience -> How will the application help people and would everyone be able to use the application
- How will contact be tracked
- Design principles based on the universal design principles

Universal design (UD) principles	Guidelines
Principle one: Equitable Use The design is useful and marketable to people with diverse abilities.	1a. Provide the same means of use for all users: identical whenever possible, equivalent when not. 1b. Avoid segregating or stigmatizing any users. 1c. Provisions for privacy, security, and safety should be equally available to all users. 1d. Make the design appealing to all users.
Principle two: Flexibility in Use The design accommodates a wide range of individual preferences and abilities.	2a. Provide choice in methods of use **to allow users to feel they are in control [39]**. 2b. Accommodate right- or left-handed access and use. 2c. Facilitate the user's accuracy and precision. 2d. Provide adaptability to the user's pace.
Principle three: Simple and Intuitive Use Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.	3a. Eliminate unnecessary complexity. 3b. Be consistent with user expectations and intuition. 3c. Accommodate a wide range of literacy and language skills. 3d. Arrange information consistent with its importance. 3e. Provide effective prompting and feedback during and after task completion. **3f. Design dialogs to yield closure [39].**
Principle four: Perceptible Information The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.	4a. Use different modes (pictorial, verbal, tactile) for redundant presentation of essential information. 4b. Provide adequate contrast between essential information and its surroundings. 4c. Maximize "legibility" of essential information. 4d. Differentiate elements in ways that can be described (i.e., make it easy to give instructions or directions). 4e. Provide compatibility with a variety of techniques or devices used by people with sensory limitations. **4f. Design for multiple and dynamic contexts [39].**
Principle five: Tolerance for Error The design minimizes hazards and the adverse consequences of accidental or unintended actions.	5a. Arrange elements to minimize hazards and errors: most used elements, most accessible; hazardous elements eliminated, isolated, or shielded. 5b. Provide warnings of hazards and errors. 5c. Provide fail safe features. 5d. Discourage unconscious action in tasks that require vigilance.
Principle six: Low Physical Effort The design can be used efficiently and comfortably and with a minimum of fatigue.	6a. Use reasonable operating forces. 6b. Minimize repetitive actions. 6c. Minimize sustained physical effort.
Principle seven: Size and Space for Approach and Use Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.	7a. Accommodate variations in hand and grip size.

Conclusion [10]:

Does the student provide a conclusion the ties everything together?

Does the consideration makes sense?

Does the student refer back the essay and provide a satisfactory conclusion?

[100]

Total 100