UNIVERSITY of BRADFORD

Mobile Application Development **final** COURSEWORK

SUMMARY

This is an android app development exercise using Java and the associated report that test all the following Learning Outcomes (LOs):

- **LO 1**: Demonstrate mastery of developing an Android application addressing any business/end-user need.
- **LO 2**: Demonstrate the ability to use atleast one media resource delivery in a target Mobile application.

Assessment Method	Assessment type	Weighting	Hand in date/ time	Feedback method	Feedback date
Main mobile application project (All LOs assessed)	• App's Source Code • Report • Screencast	100%	13/01/2024 05:00PM	Canvas	Three weeks after Submission
Reassessment Method		**Weighting**	**Hand in date**	**Feedback method**	**Feedback date**
Main Mobile application project (All LOs assessed)	• App's Source Code • Report • Screencast	100%	TBA	Canvas	Four weeks after Submission

PLAGIARISM

Plagiarism is considered as academic misconduct. The University takes cases of plagiarism very seriously, and all alleged cases of academic misconduct will be investigated thoroughly by an EI Investigatory Panel. Students are advised to ensure that any coursework submitted is their own work or, where the work of others is referred to (this includes **any** third-party material, e.g., text, images, diagrams, drawings, audio, videos), it is correctly referenced. The University defines plagiarism in the following way:

- The representation of the work, written or otherwise, of any other person, from any source whatsoever, as the candidate's own. Examples of plagiarism may be as follows:
- The verbatim copying of another's work without clear identification and acknowledgement – including the downloading of materials or program code from the internet without proper referencing and acknowledgement
- The close paraphrasing of another's work by simply changing a few words or altering the order of presentation without clear identification and acknowledgement.
- Unidentified and unacknowledged quotation of phrases from another's work.
- The deliberate and detailed presentation of another's concept as one's own.

For more information, you are directed to following the university websites:

- Information regarding ***Academic misconduct***:
https://unibradfordac.sharepoint.com/sites/appeals-misconduct-and-complaints-intranet/SitePages/Information-for-students.aspx

- Information on ***study skills***:
https://unibradfordac.sharepoint.com/sites/academic-skills-advice-intranet/SitePages/Short-Guides.aspx

https://unibradfordac.sharepoint.com/sites/academic-skills-advice-intranet/SitePages/Effective-Study-Resources.aspx

https://unibradfordac.sharepoint.com/sites/academic-skills-advice-intranet/SitePages/Reading,-Reviewing-%26-Researching-Skills.aspx

COURSEWORK SPECIFICATIONS

BRIEF

In this group coursework, you are required to first form a group of maximum three students, then choose a case study and use it to define, design, develop and test an android mobile app. In addition, you should conduct good research and produce a good quality app and report with the following three parts.

PART 1 – Problem identification/definition, analysis, and design

This is the part where you identify the case study area and extract the problem that your app will solve. Use this to give the scenario/case study, and specify the problem you aim to solve by developing the app. An analysis of the problem should follow the problem definition. The analysis involves decomposing or breaking the problem into more minor subproblems. These smaller problems should aggregate into the bigger picture you are trying to address. Next, after the analysis, is the design of the proposed solution. Here you specify the design guidelines/principles used, including any architectural considerations you made, such as detailed MVC or relevant framework used and the associated diagrams.

Note: You have to include this part in your report (See Part 3).

PART 2 – Android mobile app development:

Here, you have to implement your design by developing an android app using Java language. Your app should:
  i.   Comprise of good quality UI with at least two fragments separating all the components.
  ii.   Use the activity life cycle states through its various methods (such as onStart, onPause, onDestroy, etc.).
  iii. Utilise at least one: device location/ Google Maps/ Media player/ Camera/ microphone/ any native android apps, service, sensor, or sensor API.
  iv.   Use persistence data storage (e.g. SQLite, ROOM/ Firebase/Firestore, etc.).
  v.   Use MVC or similar (java-based frameworks such as MVP, MVVM, etc.) framework.

PART 3 – Report:

You are required to write a detailed report of 2000 – 4000 words maximum on your app. You may use the following headings.
  i.   Title of the Project/Case study
  ii.   **Group Contribution**
  iii. Abstract/Summary
  iv.   Introduction/Overview/case study brief
  v.   Problem definition
  vi.   Design specification requirements
  vii. Design
  viii. Implementation and testing
  ix.   Conclusion
  x.   References

In addition, you can include screenshots to explain your code/design.

Important Note about Report: You must include Group Contribution right at the beginning of report. It must include:

1. Group Name & Members UB with names
2. A short para (max. 3-4 lines) about distribution of work
3. Group contribution scores for each member on a scale of **5 (5 being the 100% contribution as per the member's share, 0 being the no or very little contribution as per the member's share)**.

PART 4 – Screencast:

Prepare two screencasts:

Screencast 1 (Maximum length: 2 minutes) : solely for demonstrating the apps functionality. You are expected to showcase the full spectrum of application features in a brief video clip of not more than 2 minutes (Make sure your screencast does not exceed 2 minutes).
Your screencast must:

- Show your face as you and the emulator's or mobile phone screen simultaneously.
- Demonstrate how your app works (each UI feature and function should be tested).
- Not waste time in introducing the app and yourself.
- Be named as "UB-NO_FirstName_SC1".

Screencast 2 (Maximum length: 3 minutes) : solely for explaining the design (code and resource). You are expected to explain the code section and any other resources utilized in a brief video clip of not more than 3 minutes (Make sure your screencast does not exceed 3 minutes).
Your screencast must:

- Show your face as you and the Android Studio IDE simultanesouly.
- Include the explanation of whole code section (Java) and other resources (res) with the aim of answering "WHYs" and "HOWS" about the code.
- Use the jargon of key components used by your designed app such as: Activities, Fragments, SQLite (OpenHelper or less preferred), LifeCycle, MVC, Firebase, Google Maps API, Services, Intent, Content Provider, Services, Broadcast Receiver etc.
- Explicitly point out the MVC architecture by showing segregation among MVC components.
- Not waste time in introducing the app, yourself, and content of screencast-1 (SC1).
- Be named as "UB-NO_FirstName_SC2".
- Prepare and practice before recording to distribute the time uniformly among all sections of code and resource.

Note: Please make sure the time limits do not exceed and prepare two screencasts carefully. They essentially test your app's functionality and reflect a lot about your actual contributiuon in developing your app. They should clearly reflect to the examiner that it is your work, otherwise the whole authencity of your project could be jeopardized and may affect the overall score. Screencasts can be recorded by anyone among the group members.

See the Guide to Marking Criteria below for information on how marks will be allocated.

GUIDE TO MARKING CRITERIA:

	Distinction 70% & Above	Merit 60-69%	Pass (Higher) 50-59%	Pass (lower) 40-49%	Fail 39% or less
User Interface and Fragments (15 Marks)	Interface is functional, with **excellent user interaction** and usability. Use of **two or more** Fragments.	Interface is functional, with **very good user interaction** and usability. Use **at least two** Fragments.	Interface is functional, with **good user interaction** and usability. Use of **at least one** Fragment.	Interface is functional but has **limited user interaction** and usability. Use of **only one Fragment.**	Interface is present but not functional.
Activity Life Cycle (10 Marks)	Fully utilising all relevant activity life cycle states by implementing all the relevant methods e.g. onStart(), onResume(), onDestroy(), etc.	Good utilisation of most relevant activity life cycle states by implementing all the relevant methods e.g. onStart(), onResume(), onDestroy(), etc.	Good utilisation of some relevant activity life cycle states by implementing all the relevant methods e.g. onStart(), onResume(), onDestroy(), etc.	Average utilisation of some relevant activity life cycle states by implementing all the relevant methods, e.g. onStart(), onResume(), onDestroy(), etc.	Little or no use of any activity life cycle states and methods.
Device location/ Google Map/ Media player/ Camera/ microphone/ any native android apps, service or sensor or sensor API (10 Marks)	App uses at least one of the stated features and is excellently implemented and working fully and correctly.	App uses at least one of the stated features, has good implementation and works correctly.	App uses at least one of the stated features, has exemplary implementation and works OK.	App uses at least one of the stated features, moderate implementation and working OK.	Little or no use of any of the features listed.
Persistent Data Storage (10 Marks)	Excellent use of one of the persistent data storage systems such as SQLite, ROOM, Firebase or FireStore, and it is fully working.	Good use of one of the persistent data storage systems such as SQLite, ROOM, Firebase or FireStore, and it is fully working.	Good use of one of the persistent data storage systems such as SQLite, ROOM, Firebase or FireStore, and it is partially working.	Moderate use of persistent data storage systems such as SQLite, ROOM, Firebase or FireStore and is partially working.	Little or use of any of the persistent data storage and it is poorly working or not working at all.
MVC or relevant Framework (15 Marks)	Report and implementation demonstrate correct understanding of MVC (or other relevant) architectural Framework. Clearly showing model, view and controller class(es) and adding relevant code to appropriately as well as excellent explanation in the report and screencast.	Report and implementation demonstrate a correct understanding of MVC (or other relevant) architecture. It is also clear how MVC (or other relevant) architecture is followed in the implementation. However, MVC (or other relevant) architecture is not strictly adhered to in the implementation.	Report and implementation demonstrate a correct understanding of MVC (or other relevant) architecture, but It is not clear how MVC (or other relevant) architecture is followed in the implementation.	Report and implementation demonstrate a flawed understanding of MVC (or other relevant) architecture.	Application is not implemented using MVC (or other relevant) architecture.
ScreenCast 1 (General functionality of the app) (10 marks)	**Excellent demonstration**(having all must's) of functional app that has an implementation of more than one activity and fragment. The app uses Persistent data storage and is working, The app uses the activity life cycle methods and are all working. The app uses Location/Maps/other sensors or native apps and are fully working The app uses MVC or relevant Framework and is **fully working**.	**Good demonstration** of functional app that has an implementation of more than one activity and fragment. The app uses Persistent data storage and is working, The app uses the activity life cycle methods and are all working. The app uses Location/Maps/other sensors or native apps and are fully working The app uses MVC or relevant Framework and is **fully working.**	**Moderate demonstration** of functional app that has an implementation of at least one activity and fragment. The app uses Persistent data storage and is working. The app uses the activity life cycle methods and are working The app uses Location/Maps/other sensors or native apps and are working The app uses MVC or relevant Framework and is **working.**	**Moderate app demonstration** that has an implementation of at least one activity and fragment. The app uses Persistent data storage and is partially working, The app uses the activity life cycle methods and are partially working The app uses Location/Maps/other sensors or native apps and are working The app uses MVC or relevant	**Poor demonstration** missing the required information and app **is not working.**

				Framework and is **partially working.**	
Report (15 marks)	Fully adheres to student guidelines No spelling and grammatical errors Exellent good use of appropriate language and relevant terminology Excellent structure and organisation Excellent referencing and citation where applicable	Mainly adheres to student guidelines Minor spelling and grammatical errors Good use of appropriate language Well-structured with a logical organisation.	Some adherence to student guidelines Some spelling and grammatical errors Inconsistent use of appropriate language Organisation and progression evident	Does not adhere to student guidelines Major deficiencies in spelling and grammar Lack of appropriate language A disorganised report with a lack of evident structure	No report submitted. Paperwork submitted does not constitute a meaningful report.
Screencast-2 (15 Marks)	**Excellent explanation** of all the source code and resources reflecting **sound** understanding of the used concepts from the lectures and labs. Including all the must's of screencast-2 instructions.	**Good explanation** of all the source code and resources reflecting **good** understanding of the used concepts from the lectures and labs. Including all the must's of screencast-2 instructions.	**Moderate explanation** of all the source code and resources reflecting **moderate** understanding of the used concepts from the lectures and labs. Including all the must's of screencast-2 instructions.	**Moderate explanation** of partial source code and resources reflecting **partial** understanding of the used concepts from the lectures and labs. Including all the must's of screencast-2 instructions.	**Poor explanation** reflecting **poor** understanding of the concepts and learning objectives.
Total 100 Marks					

NOTE: All the marking criteria will be assessed by examining the functionality of your app through running the app, inspecting your app source code and associated files and your screencast.

SUBMISSION:

You are to submit the following:
1. Report first to Turnitin via Canvas in PDF format preferably. Word format also acceptable.
2. All your app's project folder and screencasts video file as one zip file via Canvas. Main Folder (UB-NO)-> Two Sub-folders (One for screencasts files , other for android project files).