MCAST

ASSESSMENT AND INTERNAL VERIFICATION FRONT SHEET (Individual Criteria)

(Note: This version is to be used for an assignment brief issued to students via Classter)

Course Title	**B.Sc. (Hons.) in Software Development** **B.Sc. (Hons.) in Creative Computing**		**Lecturer Name & Surname**	**James Decelis**	
Unit Number & Title	ITMSD-506-2308				
Assignment Number, Title / Type	Cross Platform Development				
Date Set		**Deadline Date**			
Student Name	Lara Valentino	**ID Number**	0110706L	**Class / Group**	SWD 6.2A

Assessment Criteria	Maximum Mark
R&U1 Using accessibility tools, evaluate if a mobile application is accessibility-compliant	2
E&C2 Develop user interfaces that adhere to both iOS and Android design guidelines while maintaining a consistent user experience across platforms.	8
E&C3 Analyse app performance to identify and address performance bottlenecks.	6
R&U3 Use device-specific features such as camera, GPS, and sensors using platform APIs.	6
R&U4 Access native device functionalities through platform-specific code.	6
A&A3 Integrate third-party libraries and SDKs effectively into cross-platform applications.	8
A&A4 Implement notifications and background services to enhance app functionality.	6
R&U5 Implement effective version control practices using Git workflows.	6
R&U6 Monitor application performance and user feedback using analytics and monitoring tools.	8
R&U7 Plan app updates and maintenance for execution ensuring backward compatibility.	8
A&A5 Set up continuous integration and delivery pipelines for automated builds and deployments.	8
Total Mark	72

Notes to Students:

- This assignment brief has been approved and released by the Internal Verifier through Classter.
- Assessment marks and feedback by the lecturer will be available online via Classter (Http://mcast.classter.com) following release by the Internal Verifier
- Students submitting their assignment on Moodle/Turnitin will be requested to confirm online the following statements:

Student's declaration prior to handing-in of assignment

- ❖ I certify that the work submitted for this assignment is my own and that I have read and understood the respective Plagiarism Policy

Student's declaration on assessment special arrangements

- ❖ I certify that adequate support was given to me during the assignment through the Institute and/or the Inclusive Education Unit.
- ❖ I declare that I refused the special support offered by the Institute.

INSTITUTE OF INFORMATION AND COMMUNICATION TECHNOLOGY

ITSFT-506-2308-Cross Platform Development

B Sc (Hons) in Software Development

B Sc (Hons) in Creative Computing

Instructions to Students

- This is a Home-Based Assignment
- The deadline for this assignment is 2 weeks from date of issue
- Develop the required application using Flutter and Dart
- Use the provided template to Submit all screenshots and descriptions
- You will be presenting your app in class during the scheduled lectures
- Compress the following folder and files and upload them to the VLE.
    - lib
    - assets (if any)
    - pubspec.yaml
    - info.plist (iOS)
    - AndroidManifest.xml (android)

1. Overview

You are required to design and implement a fully functional cross-platform mobile application using Flutter. The application must be original and not replicate any examples demonstrated during lectures or tutorials. The solution should follow established mobile development best practices and incorporate core concepts covered in class. The application must include at least two distinct screens, with user interaction implemented on at least one screen. Development should combine knowledge acquired during lectures with independent research, allowing you to create an application that reflects your own design choices and technical decisions.

The application must include at least one feature or package form the list below (research required):

- **Advanced State Management (beyond setState)**
  - Examples: *Provider, Riverpod*
- **Local Persistent Storage**
  - Examples: *Shared Preferences, SQLite (sqflite), Hive*
- **Push Notifications** (beyond local) – (only for android devices)
  - Examples: *Firebase Cloud Messaging (FCM)*
- **Sensors & Hardware Beyond GPS/Camera**
  - Examples: *accelerometer, Gyroscope, Proximity Sensor, Battery Status*
- **Authentication**
  - *Examples: Firebase Authentication*

2. App Details

R&U1 – Accessibility Evaluation (2 marks)

Run one accessibility evaluation tool on your app (e.g. Flutter accessibility checker, TalkBack, VoiceOver).

- Submit screenshots or output showing results.

Marks Allocated	
• Tool used correctly	**1**
• Screenshot	**1**

E&C2 – Cross-Platform UI Design (8 marks)

Design the app UI using Figma, Adobe XD, or similar

Ensure UI respects Material (Android) and Cupertino (iOS) principles (choose 1)

Screens must show platform-aware design choices

Marks Allocated	
• Design tool used	**3**
• Implementation of design in actual app	**5**

E&C3 – Performance Analysis & Optimisation (6 marks)

Use Flutter DevTools to identify one performance issue

Submit a Screenshot of DevTools before optimisation

Describe what is the issue and why do you think that happens

Marks Allocated	
• Performance issue identified	**2**
• Issue describtion	**4**

R&U3 – Device-Specific Feature (6 marks)

Implement one of the following:

- GPS
- Camera

Submit the Code snippet where this was used

Submit a screenshot of feature working on device/emulator

Marks Allocated	
• Feature implemented correctly	6

R&U4, A&A3– Native Platform Functionality (RU4 6 marks, AA3 8 Marks)

Implement 1 of the functionality/pagkages listed in page 2

Describe what was implemented and why this was chosen in context of your application

Marks Allocated	
• Implementation of both stateless and statefull widgets	3
• Implementation of functionality	5
• Description	2
• Meaningful usage in app context	4

A&A4 – Notifications / Background Services (6 marks)

Implement one:

- Local notification

Submit a screenshot of notification firing

Code snippet triggering it

Marks Allocated	
• Implementation of local notifications	6

R&U5 – Version Control with Git (6 marks)

Use Git throughout development.

Submit Git repository URL (**Make sure that it's public of lecturer is added to the repository)**

Submit a commit history screenshot

Minimum 8 meaningful commits

Descriptive commit messages

Marks Allocated	
• Git used consistently	4
• Implementation of Application logic	2

R&U6 – Analytics & Monitoring (8 marks)

Integrate Firebase Analytics or equivalent.

Submit a screenshot of analytics dashboard

Marks Allocated	
• Analytics tool integrated	4
• Correct use of Widgets in your app	4

R&U7 – Updates & Maintenance Planning (8 marks)

Plan three future updates focusing on:

- Feature expansion
- Performance or UX improvement

Marks Allocated	
• **3 realistic updates described**	**8**

A&A5 – CI/CD Pipeline (8 marks)

- Provide a brief description of GitHub Actions workflow and its role in CI/CD.
- Submit code with descriptions demonstrating how GitHub Actions can be integrated into a Flutter application.

Marks Allocated	
• Description of git hub actions worflow	5
• Submit code with descriptions	3