

 School of Computing, Electrical and Applied Technology	ISCG 7424 Mobile Software Development Semester 1, 2023	1
Assignment One Drivers Licence Test Booking System	Total Marks: 100 Weighting of this assignment: 30%	

Assignment 1 – Individual

Learning Outcomes

1. Acquire in depth knowledge of a range of advanced technical features that extend the standard software development environment to cater for the development of software for mobile devices by obtaining information from the internet, manuals, textbooks and supplied sample code.
2. Demonstrate the ability to successfully apply such features and techniques when writing code to solve selected problems in the given language for a mobile device.
3. Communicate the knowledge from learning outcome 1, in a form that other programmers will find usable, relevant and easily intelligible.

Drivers License Test Booking System (DTBS)

Background: The NZTA wants to develop a driver's licence test booking application suitable for Android devices. In order to give this project, they asked all the interested developer to develop a *prototype* DTBS using following requirements.

Assume the following requirements:

- Booking Time slots start at 9:00
- Booking Time slots finish at 17:00 and the last booking slot is 16:30
- Each time slot is 30 min long
- Bookings can be made from Monday to Friday and no bookings can be made on the weekend
- There are 16 booking slots per day
- Each time slot must have a driving instructor (Tester)
- Keep data in files or database
- Three appropriate extra features of your choice

Scope Exclusions (However, you can use as extra features):

- connect your application to a remote server to manage the timeslots

Marks will be allocated for functionality, best practices such as application robustness, code elegance, maintenance, and documentation.

Requirements:

1. Develop a series of wireframe screen designs using a screen design program of your choice to handle the requirements above. Make sure that the user will be able to navigate between each screen using an appropriate control / workflow.

[5 marks]

2. Present the screen design to your lecturer and at least two students for feedback.

[5 marks]

3. User registration

- Record appropriate data for user

[5 marks]

4. Instructor registration

- Record appropriate data for instructor.

[5 marks]

5. Book a time slot for a given licence holder

- A timeslot can be booked by users if instructor available
- One user can only book one time slot per day
- Hint — you can use method
`bookTimeslot(String licenceNumber, String day, int hour)`
Return true if the slot could be booked successfully OR false if the slot cannot be booked

[13 marks]

6. Retrieve all booked time slots for a given licence holder

- Return a sequence of timeslots
- Hint — you can use method
`getTimeslotBooking(String licenceNumber)`

[10 marks]

7. Get a list of summary data for timeslot bookings on a given day.

- Hint — You can use method
`getSlots(String day)`
Return a sequence of hours, bookingCounts ordered by hour

[12 marks]

8. Create a mobile user interface to allow an end user to book a timeslot using appropriate Android widgets and layouts

[10 marks]

9. Use appropriate file handling or database to handle data.
[15 marks]

10. Three appropriate extra features of your choice.

[15 marks]

11. Create a suite of unit tests both positive and negative to exercise the core business functionality.

[5 marks]

12. Present working application to class and explain how the application works. Expect to be asked to make changes on the fly to your application and unit tests.

Marking Schedule

Marks will be allocated for functionality, best practices such as application robustness, code elegance, maintenance and documentation.

Task	Marking Criteria	Marks
Screen Designs	Screen(s) designed with requirements in mind Screens are aesthetically pleasing and allow for an intuitive and easy to follow form.	5
Screen Design Presentation	Screen designs presented and discussed	5
User registration	Appropriate data is taken for user registration	5
Instructor registration	Appropriate data is taken for registration	5
Book Slot	Timeslots run from 9:00 – 17:00 hours Last bookable timeslot is 16:30 hours Each time slot is 30 Min long Bookings can be made from Monday to Friday Instructor is assign to each time slot	13

Get Timeslot Booking	Code to retrieve timeslots by licence number Code to retrieve sequence of timeslots	10
Summary Data	Code to retrieve list of timeslots for a given day Code to generate a histogram / summary count of the booking total per day Code to order summary data by hour	12
Booking Form	Appropriate layout + code to handle booking a timeslot for a given licence number	10
Database or file handling	Database handling or file handling done with CRUD	15
Summary Form	Colour coding of matrix elements to show hotspots or other appropriate controls of your choice	6
Extra	Three appropriate extra features are added	15
Unit tests	Working unit test	5
You must give demo of your assignment and answer all questions about your code. 50 marks will be deducted if this is not done.		
Total Marks		100

For each task scoring is limited to:

- Excellent: 90 - 100%
- Very good 75-90%
- Good: 55-75%
- Satisfactory: 25-55%
- Needs Improvement: 5-25%
- Not completed 0

Late Submission of Assignments

Assignments submitted after the due date and time without having received an extension through Affected Performance Consideration (APC) will be penalised according to the following:

- 10% of marks deducted if submitted within 24hrs of the deadline,
- 20% of marks deducted if submitted after 24hrs and up to 48hrs of the deadline,
- 30% of marks deducted if submitted after 48hrs and up to 72hrs of the deadline,
- No grade will be given for an assignment that is submitted later than 72hrs after the deadline.

Special Assessment Circumstances

A student, who due to circumstances beyond his or her control, misses a test, final exam or an assignment deadline or considers his or her performance in a test, final exam or an assignment to have been adversely affected, should complete the Affected Performance Consideration (APC) form available from the Student Central.

When requesting an APC for an assignment, the APC must be submitted (along with work completed to date) within the time frame of the extension requested; i.e. if the Doctor's certificate is for one (1) day, then the APC and work completed must be submitted within one (1) day.

Assistance to other Students

Students themselves can be an excellent resource to assist the learning of fellow students, but there are issues that arise in assessments that relate to the type and amount of assistance given by students to other students. It is important to recognize what types of assistance are beneficial to another's learning and also what types of assistance are unacceptable in an assessment.

Beneficial Assistance

- Study Groups
- Discussion
- Sharing Reading Material
- Reading the available online and library resources

Unacceptable Assistance

- Working together on one copy of the assessment and submitting it as own work
- Giving another student your work
- Copying someone else's work, this includes work done by someone not on the course
- Changing or correcting another student's work
- Copying from books, the Internet etc. and submitting it as own work; anything taken directly from another source must be acknowledged correctly; show the source alongside the quotation

