



OLLSCOIL NA GAILLIMHE
UNIVERSITY OF GALWAY

2023-2024 Semester 1

CT326 Programming III

Individual Assignment 1

Objective	Demonstrate the use of test-driven development approach in Java; throwing and catching of user defined exceptions; and Java programming fundamentals.
Lecturer	Dr Adrian Clear Email: adrian.clear@universityofgalway.ie
Marks Awarded	This assignment is marked out of 60 marks and is worth ~6% of the overall grade for the module.
Submission	<p>The deadline for submission is 23:59 on Wednesday, September 20th, 2022.</p> <p>Your attempt should be submitted through Canvas.</p> <p>Please provide a single zip file of your answers. See further details below.</p>

Please complete all parts. All parts are worth equal marks.

1. Use a test-driven development approach (TDD) to create a class representing a booking for the National Car Test (NCT). A booking must be created with a vehicle registration number, a test centre (a test centre should be represented with a test centre name and test centre address), and a date and time. Use the `LocalDateTime` class from the `java.time` library as the type for the date and time variable.

See <https://docs.oracle.com/javase/8/docs/api/java/time/LocalDateTime.html> for details and examples of how to use this class.

2. It should be possible to query for the test centre of the booking. The value returned should be the value that was set when the booking was created.
3. It should be possible to query for the registration number of the booking. The value returned should be the value that was set when the booking was created, or the value entered in the last edit.
4. It should be possible to edit the vehicle registration number of the booking.
5. It should be possible to create a booking without specifying a date and time. In such cases, the date and time should be set by an external API. You can assume the interface below is available to you for this.

```
public interface NCTBookingSlotWebservice {  
    public LocalDateTime getBookingDateTime(TestCentre testCentre);  
}
```

6. It should not be possible to create a booking with a date and time in the past. Invalid dates and times should be handled with an appropriate user defined exception.
7. Bookings should have a unique Booking ID Number that is generated when they are created.
8. A `toString()` method should return a string representation of the booking in the following format:

```
Booking ID Number: 58964158  
Registration Number: 16-WH-59741  
Centre: Ballinasloe  
Address: Unit 9, Pollboy Industrial Estate,  
Ballinasloe, Galway H53 NW94  
Date & Time: On Friday, 22 September 2023 at 08:00
```

Submission instructions:

Include your name and student number in a comment in each java source file and explain your code with comments. Submit your work in a single zip file using the name format **assignment1_firstname_lastname.zip** via Canvas - other file formats will NOT be accepted, and email submission will NOT be accepted. Include a screen shot of the testing / results in the same zip file. Use proper indentation in your source code. If you submit more than one attempt, then only the last attempt will be marked.

Plagiarism will be awarded a grade of zero!