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**Assignment Cover Sheet**

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| **Subject Code: CSCI251** |  |
| **Subject Name: Advanced Programming** |  |
| **Submission Type: Assignment** |  |
| **Assignment Title: Assignment 3** |  |
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| **Lecturer Name: Dr Lim** |  |
| **Due Date: 17/06/2022** |  |
| **Date Submitted:17/06/2022** |  |

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| |  |  | | --- | --- | | **Lecturer Assignment Receipt**(To be filled in by student and retained by Lecturer upon return of assignment) | | | **Subject:** | **Assignment Title:** | | **Student Name:** | **Student Number:** | | **Due Date:** | **Date Submitted:** | | **Signature of Student:** | | |

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| |  |  | | --- | --- | | **Student Assignment Receipt** (To be filled in and retained by Student upon submission of assignment) | | | **Subject:** | **Assignment Title:** | | **Student Name:** | **Student Number:** | | **Due Date:** | **Date Submitted:** | | **Signature of Lecturer** | | |

# Introduction

In this assignment we were tasked by a large transport company in Dubai to make a Seating Plan Allocation program. This assignment was designed to test our skills in both Object- oriented Programming and Procedural Programming. The Objective of the assignment was to create a program that would allocate Men, Ladies and children seats on a bus depending on a computer generated plan. There were some basic rules that we had to follow:

1. The seating plan should be computer generated and not dependent on user inputs
2. Families and ladies should be seated in the families and ladies section
3. Children must never be seated close to a door. Assuming that only immediate seats are the “dangerous ones”
4. Male passengers must not be seated in the ladies and families section
5. To display the seating allocation the “D” Key must be pressed
6. The program must also store the previous seating allocations from previous stops
7. The program must also allow the administrator to reset the seating plan and set it to a default one
8. Each seating plan must be kept in safe records and must have the ability to be accessible by an administrator.

We also had to do this assignment in both Procedural Programming format and Object-Oriented Programming.

I started off with procedural programming. I began my first making the menu system. I hadn’t encountered any problems creating the menu other than the "eof" flags that stopped the program from looping. I fixed it by using the following code:

stopsOn.clear();

stopsOn.seekg(0, std::ios::beg);

stopsOff.clear();

stopsOff.seekg(0, std::ios::beg);

All this did was clear the “eof” flags that would appear if the program display the seating allocations until stop F. When I tried to reset the program all it would do is reset the 2d vector and stop the printing of the “Stops” again. After that I went on to create a single function to set and display the seating plans.

I found the Object-oriented part of the assignment much easier to do as I had already completed the procedural part and most of the functions that were needed for OOP already existed. I had made 4 classes of which 2 were inherited and there was a polymorphic function

In conclusion, I found the assignment enjoyable and a good challenge. It taught me some valuable skills that would have otherwise been missed out.