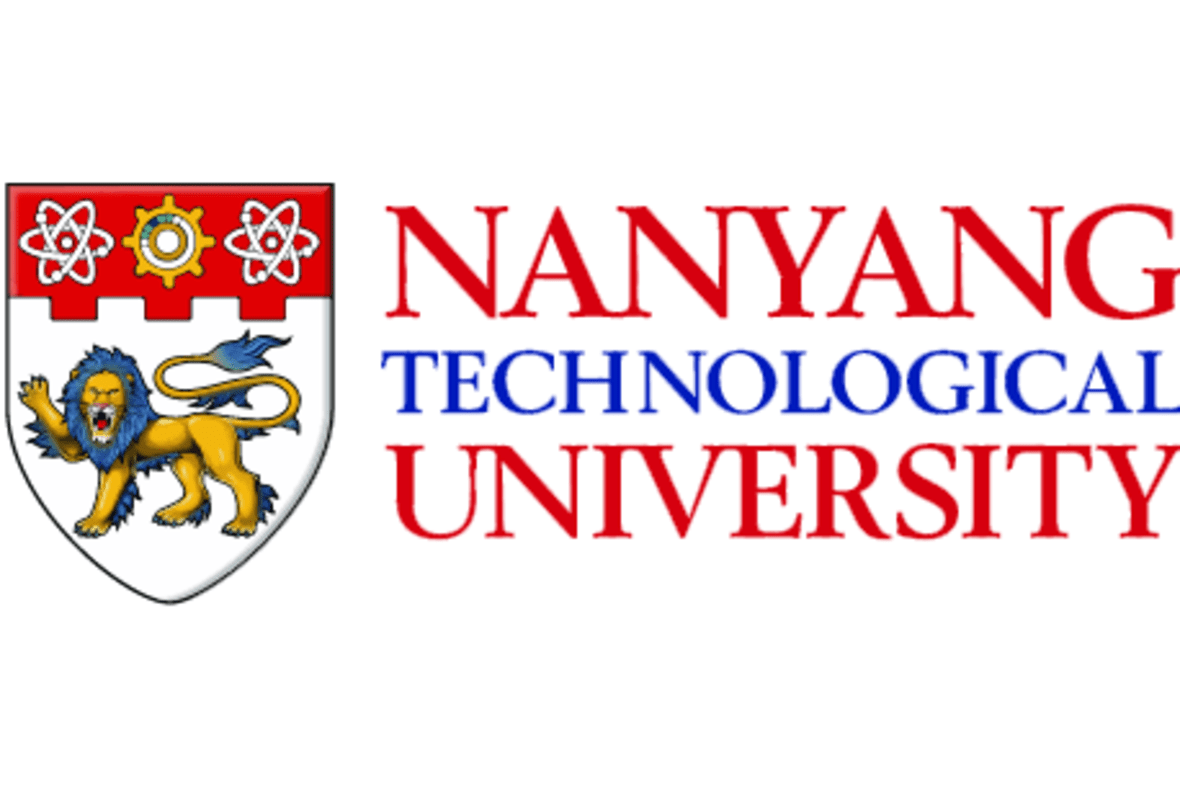
**SCHOOL OF Computer Science and Engineering**



**CZ2002**

**Objected-Oriented Design & Programming**

**Assignment**

**Written by:**

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Lee Shan Chao Charles  
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# **Declaration of Original Work for CE/CZ2002 Assignment**

Declaration of Original Work for CE/CZ2002 Assignment We hereby declare that the attached group assignment has been researched, undertaken, completed and submitted as a collective effort by the group members listed below. We have honored the principles of academic integrity and have upheld Student Code of Academic Conduct in the completion of this work. We understand that if plagiarism is found in the assignment, then lower marks or no marks will be awarded for the assessed work. In addition, disciplinary actions may be taken.

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| Lee Shan Chao Charles | CZ2002 | 3 | 21 Apr 2020 |
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1. **Design Consideration**

**Design Patterns:**

Considering our application is used by hotel stuff in different scenarios such as making reservations, creating orders, etc. Different boundary classes are created for different use cases. Therefore, Factory Design Pattern is implemented in the top layer of our system.

The benefits and OO concepts we implemented Factory Design Pattern are:

1. Use polymorphism for boundary object creation and encapsulate the boundary creation from clients.
2. Easy to extend, which satisfies the open-closed principle. For example, we can extend our application to support checking employee information of the hotel by adding the Employee Boundary with the corresponding entity and control classes without affecting other objects and classes.
3. Support lazy initialization and singleton pattern, which the returned boundary object is based on the selection of user.

From entity layer to boundary layer, Entity Control Boundary (ECB) pattern is implemented to support different use cases for hotel stuff. In our application, one type of entity class has a corresponding control and boundary class, and all the communications between the boundary class and entity class are processed in control classes.

The benefits we implemented ECB Pattern are:

1. Separate the data layer and user interface layer to reduce the coupling.
2. One type of entity class has one control class, single responsibility with high cohesion.

**Assumptions:**

# **Detailed UML Class Diagram**

1. **Detailed UML Sequence Diagram of stated function**

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# **Testing**