Practical Assignment

Design a database system suitable to implement an on-line food ordering system (e.g. FoodPanda).

Learning Outcomes Being Assessed	1. Design of the relational database model for the new system. 2. Ability to implement the designed database using Oracle DBMS. 3. The completeness and the quality of the database implemented for your application.
Tutors for Practical	Choong Yun Loong
Outline of Problem	This assignment requires the students to analyse and design a database system to cater for the needs of an integrated bus ticketing system for the many stage bus companies.

Your Tasks.

No	Task	Deadline
1.	A complete ER data model in 3rd Normal Form. **All assumptions and enhancements must be clearly written and presented.** **All primary keys, foreign keys, relationships and attributes** must be clearly shown.	
2.	Prepare the Data Definition Language (DDL) statements to implement tables for the new system using the Oracle database system. Include **relevant integrity constraints** to ensure database integrity must be applied to each table. Include also the **necessary check constraints and default values** to enforce your business rules. You are advised to **insert sufficient data records** for each table that you have created in the Oracle database server. Transaction tables would have more records than base tables. For example, if there are 20 students and 5 subjects per semester, then the student enrolment table would have [20 x 5 = 100 records]. If you maintain the enrolment for 5 semesters, you would have 500 enrolment transaction data. Furthermore, you should create sample data that has different date/month/year to simulate a real-world environment.	
3.	Produce queries to extract relevant information for decision making. **Single table queries are not allowed.** Make use of multiple tables and aggregate functions where necessary. **Each student is to produce at least 3 queries. The queries produced by the team must address the informational needs of**	

	management at 3 different levels: *Strategic, Tactical and Operational*.	
4.	Design and create the stored procedures that cater for the various use case scenarios for new system. **Each student is to produce at least 2 stored procedures.** **Procedures can be used for data manipulation (Add, Update, Delete), validation, etc.**	
5.	Design and create triggers that enforces system-wide **business rules and policies**. **Each student is to produce at least 2 triggers.**	
6.	Write procedures to generate reports (include summary, detail and on demand basis reports) for the company. On demand basis report is a report that will be generated once it is called by the users, and parameter value(s) might be passed in during the call. **Each student is to produce at least (one summary, one detail and one on demand) report. Use cursor in report generation.**	

- Every student must be involved in every part of the assignment. Each student must produce SQL statements, procedure(s), trigger(s), report(s), do presentation and etc. **Marks will be awarded individually.**

- Higher marks will be awarded for work that link up all the requested parts instead of presenting each part as individual, separate component. Extra efforts in doing research by incorporating ***sequences, views, indexes, functions, user defined exceptions and internally defined exceptions, formatting the outputs and etc.*** will be rewarded accordingly. Students from the same group are not to produce similar work. Thus, group discussion is necessary to **prevent overlapping work from being produced**.

- A final, **group report**, comprising of all the tasks from No. 1 to No. 6, must be submitted on **Friday, Week 11, 18 Aug 2020 by 5pm**. The DDL **statement and outputs of the execution of queries, stored procedures, triggers and reports need to be printed**. Make use of the SPOOL command to capture the output. **Explain the need and the importance** of the queries, stored procedures, triggers and reports created for the company.

Presentation in the lab (Week 12-14) - 20 minutes presentation and Q & A. - Demo Task 3-6.	
Assessment Criteria	**% of allocation**
Completeness of the logical database designed based on the enhanced original case study.	10%
Relevancy and completeness of DDLs, the quantity and quality of records inserted.	10% + 10%
Relevancy & correctness of the SQLs.	10%
Stored procedures.	10%
Triggers.	10%
Relevancy of the designed reports.	10%
Linking of Task 2 - 6 to form a coherent information system. Effort to incorporate elements such as sequences, functions, etc. That enhances the efficiency and effectiveness of the system.	15%
Presentation and Q&A.	10%
Personal reflection report.	5%
Total	**100%**