**Comp2147- SYS ANALYSIS, DESN AND TESTING (Winter 2018)**

**Group Project – (30%)**

**Due Date: see each deliverable**

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**Project Synopsis**

Your group will design and develop a fictitious case study for your group project. Your group will be assigned one of the following areas for your case study upon submission of your project composition sheet (signed by all members). You may also suggest a case study other than the one assigned to your group (or any other group) and may seek my approval to use that for your project.

You will start with the assumption that some organization (belonging to your assigned area –name it ABC Airlines, or XYZ university etc., DONOT use any real company names) needs to implement a new computer-based information system or significantly redesign/replace an existing one. You may draw upon your life experience or some past interaction with the information system as an end user. Additionally, you may want to do some online/offline research about your project case study domain. Some examples of information systems we use in our daily lives are:

1. Airline booking/ ticketing System

2. Student Registration System

3. Real Estate Listing System

4. Retail Point of Sales System

5. Used Books Exchange System

6. Library Catalogue System

7. Online Banking System

8. Package Delivery/ Courier Management System

9. Car Rental System

10. Online Retail System (E-Retailers)

11. Online Movie Rental System

12. Insurance Quotation and Claim System

The chosen system should be complex enough to handle multiple business processes (at least Fifteen 15 use cases and 4-5 actors) and should provide adequate functionality for the business that it would support. Please be extra careful in the case of two groups who have been assigned same system to avoid any “coincidental” similarities. Please read college policy for further details on cheating and plagiarism.

Following is a list of deliverables that should be included in your submissions. Note that some submissions are due at the end of the course while other are “ongoing work” delivered in each sprint:

**Delivered in Sprint 1: (Due: February 16, 2018; total: 6%)**

1. The document (2-3 pages long) that describes the business processes of your case study. (**1**%)
2. Document describing personas (2-3 personas, 0.5-1 page/persona) (**2**%)
3. Document with user stories. Stories should be prioritized. (**2**%)
4. Project backlog (online) and sprint backlog (online) (**1**%)

**Delivered in Sprint 2: (Due: March 16, 2018; total 10%)**

1. Pick any **one** to **two (1-2)** stories with the highest priority and create use **case diagrams** and based on them their **system sequence diagrams (2%)**
2. Create a **Design Class Diagram** (using Visual Paradigm) that would contain data types and visibility for all attributes and methods (with signatures) based on the message identified during use case realizations. You may add additional methods to your classes (not included in the above mentioned three sequence diagrams) based on overall functionality of your project. Please show associations and generalization hierarchies (if any) in the design class diagrams. Include here only the part of the system covered by selected stories. **(2%)**
3. Create **Method Contracts** for any **three** methods from your class diagram based on the sample contract form provide on page 313 (fig 8-25) of your text book. **(1%)**
4. Create **Method Specifications** for the **three** chosen methods based on the sample method specification form provide on page 315 (fig 8-26) of your text book. **(1%)**
5. Create the **Interface Design Prototype** using **either** the **Language prototype option** for the system’s User Interface using Visual Studio.Net, **or** the **HTML Prototype option** for the entire system (page 377-380 textbook). You are required to only provide the screenshots in project report (no coding required). **(2%)**
6. Implement selected stories. Keep your implementation simple. **(2%)**

**Delivered in Sprint 3: (Due: April 20, 2018; 14%)**

1. Since you have been asked to use a Relational database for object persistence, so create an **ER diagram** using Visual Paradigm ® by mapping your problem domain objects into a RDBMS (physical ER Diagram) by making necessary modifications. Your ER Diagram should include columns with their data types, key fields and relationships. Use “Mapping Problem Domain Objects to RDBMS” rules provided on Page344 (fig 9-9) on your text book and make sure that all resulting relations are in 3rd Normal Form (3NF). **(4%)**
2. Create the **Interface Design Prototype** using **either** the **Language prototype option** for the system’s User Interface using Visual Studio.Net, **or** the **HTML Prototype option** for the entire system (page 377-380 textbook). You are required to only provide the screenshots in project report (no coding required). **(2%)**
3. Create Deployment Diagram of (Low Level) Network Model for your information system (page 437 textbook) **(2%)**
4. Create a software and hardware oriented Deployment Diagrams of layers for your information system (Fig 11-A and AA-B Patterson Superstore case study p-89) **(2%)**
5. Complete implementation of additional **two (2)** user stories and provide use case and class diagrams for them. **(4%)**

**Submission**: Create all models using Visual Paradigm®/Visio/Visual Studio or any other software and then create required documents (one per group) in **MS Word** by copying all of your models in that report. Reports delivered in each sprint should be combined into a single document. Please upload a copy of your project report (MS Word) on **Black Board** on or before the due date of each sprint. Please include a cover page that should have project name, names and ID’s of all members, organize your report neatly in different sections and also create a table of contents for your report. There is 10% of each mark reserved for proper organization/formatting of your report. **NO HARD COPY/EMAIL SUBMISSIONS!**