UNIVERSITY *of* SAN CARLOS
Department of Computer Engineering
CpE 414N – Object-Oriented Approach in Programming
Transistion Semester | AY 2017 - 2018

Assessment reviewed and approved by the DCpE Instruction Committee

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FINAL EXAMINATION

Name : ____ ID Number : ______________

Instructor : ____________________ Schedule : __________________ Score : __________

Target Course Outcome:
CO3: Demonstrate the application of the concepts and principles of object-oriented programming through software applications and its corresponding documentation.

Instruction:

Below will be a scenario that you will be designing and implementing using object-oriented approach concepts and principles.
Your design shall contain of the following diagrams:

a. Class Diagram
b. Object Diagram
c. Use Case Diagram
d. Activity Diagram
e. Sequence Diagram

Your implementation shall have the following preliminary requirements:

a. Proper Project File Implementation
b. Completely Robust
c. Implementation of File-Handling
d. Use of all applicable Object-Oriented Principles
e. Use of Error-Trapping and Arrow-Key-Navigation Classes

Scenario:

Nintendo would like to manufacture a new Pokemon game based from the first generation of Pokemons. Because of this, Nintendo looked for a team capable to develop a certain component of the game, in which they have selected your team. The component Nintendo would like you to develop is a Pokedex for their new Pokemon game that would contain all 151 Pokemons.

The Pokedex will have the following users:

- Pokemon Master
- Pokemon Trainer
- NPC (Non-Playing Characters)

In order to access the Pokedex, the users must log into the system. Any NPC would not be able to log into the system, as nobody can be registered unless they are a Pokemon Master or a Pokemon Trainer. Upon log-in, the system will identify if the user is a Pokemon Master or a Pokemon Trainer.

The **Pokemon Master** shall have the following capabilities:

- Create, Display, and Delete Users (Pokemon Master or Pokemon Trainer)
- Display the list of registered users
- Create, Update, and Delete Pokemons
- Display the list of registered pokemons
- Identify which pokemons s/he has caught

The **Pokemon Trainer** shall have the following capabilities:

- Update and Display his own Profile
- Display the list of registered pokemons
- Identify which pokemons s/he has caught

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In this Pokedex, the **Pokemons** shall have the following information:

- Pokemon Registry Number
- Name
- Primary Type
- Secondary Type
- Description
- Previous Evolution
- Next Evolution

Other specifications of the Pokemons are as follows:

- The Pokemons shall be navigated as a list, with an indication whether the pokemon has been caught by the trainer/master or not. From the list, the users may access the pokemon, in which after, all the information of the pokemon shall be displayed.
- Primary and Secondary Types shall be a chosen from a selection. A pokemon may not have a secondary type, however a primary type is a must. No pokemon shall have similar primary and secondary types.
- It shall be that no previous nor next evolution shall be entered unless they are respective evolutions have been registered already in the Pokedex.

Any Pokemon Master or Trainer shall have the following information:

- Username
- Password
- User Type
- User Registry Number
- First Name
- Last Name
- Birthdate
- Sex
- Address
- Contact Number

Pokemon Trainers are not allowed to change any information except for Address and Contact Number. Only the Pokemon Master can register a trainer to the Pokedex. All registered users are allowed to change their passwords, passwords should not also be displayed in anyway in the system.

Data in this Pokedex shall be non-volatile.

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FINAL EXAMINATION

[CpE414-103] Assessing and evaluating ability to demonstrate the application of the concepts and principles of object-oriented programming through software applications and its corresponding documentation.

Level Criteria	Expert	Proficient	Competent	Novice	Beginner	Not Acceptable
	1.0	1.3	2.0	3.0	4.0	5.0
UML Diagrams (30%)	UML Diagram is correct for the given problem satisfying all of requirements 1 to 4. 1. **Optimal:** Ability to apply technique with optimal (or best known) approach for the given problem. 2. **Clarity:** Ability to present clear ideas with detailed and accurate information. 3. **Organization:** Ability to present ideas in an organized and a logical order. 4. **Syntax:** Ability to understand and follow the rules of the algorithm development.	UML Diagram is correct, and satisfies partially requirement 1 and ALL of requirement 2 to 4	UML Diagram is correct satisfying partially requirement 1 and AT LEAST TWO of requirements 2 to 4	UML Diagram is correct satisfying partially requirement 1 and ONLY ONE of requirements 2 to 4	UML Diagram is significantly incorrect. The UML Diagram does not follow the correct syntax nor elements.	No UML Diagram presented.
Program (30%)	Program demonstrates the application of object-oriented concepts and principles, and executes flawlessly satisfying all of requirements 1 to 5 1. **Cohesiveness:** Program follows the object-oriented models presented in their UML Diagrams. 2. **Specification:** Program works correctly and meets the specification(s). 3. **Modularity:** Decompose a problem into coherent and reusable functions or files appropriate for the programming language and platform. 4. **Syntax:** Understand and follow the rules of the programming languages and documentation standards. 5. **Robustness:** Exception handling implemented	Program demonstrates the application of object-oriented concepts and principles, and meets requirement 1 and 2, executes satisfactorily with requirements 3 to 4, and partially meets requirement 5.	Program demonstrates the application of object-oriented concepts and principles, and meets requirement 1, satisfying partially requirements 2 (majority) and 5, and executes satisfactorily with requirements 3 and 4.	Program demonstrates the application of object-oriented concepts and principles, satisfying partially requirements 1 to 2 (majority) and 5, and executes with at least minimal satisfaction for requirements 3 and 4.	Program does not demonstrate the application of object-oriented concepts and principles, even if it meets requirements 1 to 5.	**CASE 1:** Program is submitted with complete UML Diagrams. Program does not execute at all, even if requirements 2 to 6 are satisfied or not. **CASE 2:** No program is submitted.

FINAL EXAMINATION

Application of Principles and Concepts of Object Oriented Approach (20%)	Object-oriented concepts and principles are efficiently used in the application. The application of OO-concepts and principles are cohesive and reflected in the presented models, diagrams, and program.	Object-oriented concepts and principles are mostly efficiently used in the application. However, few improvements can be applied to the application of the object-oriented concepts and principles. The application of OO-concepts and principles are cohesive and reflected in the presented models, diagrams, and program.	Object-oriented concepts and principles are mostly fairly used in the application. However, minor improvements can be applied to the application of the object-oriented concepts and principles. The application of OO-concepts and principles are cohesive and reflected in the presented models, diagrams, and program.	Object-oriented concepts and principles are not efficiently used in the application. The application of OO-concepts and principles are cohesive and reflected in the presented models, diagrams, and program.	Object-oriented concepts and principles are not efficiently used in the application. The application of OO-concepts and principles are not cohesive but reflected in the presented models, diagrams, and program.	Object-oriented concepts and principles are not efficiently used in the application. The application of OO-concepts and principles are not cohesive and not reflected in the presented models, diagrams, and program
Integrity of Object-Oriented Models (20%)	All required UML Diagrams are cohesive with each other.	High priority UML Diagrams are cohesive with each other. Minority of low priority UML Diagrams are not cohesive.	High priority UML Diagrams are cohesive with each other. Most of low priority UML Diagrams are not cohesive.	High priority UML diagrams have minimal issues with being cohesive disregarding cohesiveness of low priority UML diagrams.	High priority UML diagrams have major issues with being cohesive disregarding cohesiveness of low priority UML diagrams.	No UML Diagram is submitted.