University of Makati
College of Computer Science

COMPROG2
Computer Programming 2

MERC AIRLINE TICKETING SYSTEM

<STUDENT NAME>
<SECTION>

<PROFESSOR>

<DATE>

I. INTENDED LEARNING OUTCOMES

At the end of this project, students should be able to:

1. understand the topics they have learned from topics 1-14;
2. declare and create class variables, methods, and objects;
3. use control structures and apply the five key OOP concepts;
4. Apply GUI standard libraries and Java Applets and Graphics;
5. write, test, and debug the program; and
6. appreciate the concept behind this case study.

II. BACKGROUND INFORMATION

A class is a user defined blueprint or prototype from which objects are created while class is a basic unit of Object Oriented Programming and represents the real life entities.

Polymorphism refers to the ability of OOPs programming languages to differentiate between entities with the same name efficiently.

Inheritance is the mechanism in java by which one class is allowed to acquire the features (fields and methods) of another class.

Encapsulation is defined as the wrapping up of data under a single unit. It is the mechanism that binds together code and the data it manipulates.

Data Abstraction is the property by virtue of which only the essential details are displayed to the user.

In order to accomplish this project, the student must have a clear understanding of the following topics:

- Control Structures and Arrays
- Objects and Classes
- Attributes and behavior or methods
- Inheritance
- Polymorphism
- Abstraction
- Encapsulation
- Graphical User Interface
- Applets and Graphics

III. PROJECT ENGAGEMENT

Overview

This case study will assess the learning of the student by designing a solution to a given problem applying the five key OOP concepts.

Engage

Create and design your own desktop *Airline Ticketing* application with the following requirements:

1. Required Class: Airline Type, Passenger, Destination, Transaction
2. Create an auto generated control number for every transaction (auto-generated means control numbers are not allowed to be repeated).
3. Accepts passenger/s details: Name, Age, number of passenger, travel type, and travel destination.
4. The application will accept a booking for the passenger/s flying LOCAL or INTERNATIONAL flights.
5. Type of Airplane

AIRPLANE TYPE	MAXIMUM CAPACITY	INCLUDED IN THE HEAD COUNT
Private	20	2 pilots and 4 stewardess
Business	30	2 pilots,1 assistant pilot, and 4 stewardess
Regular Fare	100	2 pilots, 2 assistant pilots, and 8 stewardess (assume there are 40 reserved/ taken seats)

6. Additional Transaction Processing Fee of PHP 550.00 pesos per transaction (for Private and Business Class). Regular class transaction processing fee is PHP255.00.
7. Travel Tax Charges per flight destination:

TRAVEL TAX	TRAVEL TAX CHARGE
Private	4,260.00 per passenger
Business	5,700.00 per passenger
Regular	2,500.00 per passenger

8. Age Restriction Requirements:

AGE	CATEGORY	PASSENGER AGE RESTRICTION
Below 19	Child	Cannot travel alone and must be accompanied by at least one (1) Adult and/or Senior Citizen
19 - 59	Adult	Regular Computation applies
Above 59	Senior Citizen	Tax Exempted and will get Total Travel Destination computation only and 20% discount

9. The following are the destinations can be made per booking transaction:

TRAVEL DESTINATION

Option	FROM	TO	Travel Type	Private Class Fare (per person)	Business Class Fare (per person)	Regular Class Fare (per person)
A	Manila	Batanes	Local Flight	8,000.00	12,500.00	3,500.00
B	Batanes	Manila		9,800.00	12,950.00	3,900.00
C	Manila	Palawan		9,100.00	10,500.00	3,200.00
D	Palawan	Manila		9,850.00	10,975.00	3,575.00
E	Manila	South Korea	International Flight	27,450.00	37,390.00	12,055.00
F	South Korea	Manila		30,890.00	39,650.00	13,100.00
G	Manila	Japan		40,450.00	45,355.00	27,800.00
H	Japan	Manila		43,855.00	49,780.00	29,400.00
I	Manila	Vietnam		8,505.00	12,345.00	3,200.00
J	Vietnam	Manila		14,300.00	16,320.00	4,600.00

10. All flights will be charged of class type baggage fee per person:

Flight Type	Baggage Fee
Private Class	1,250.00
Business Class	2,850.00
Regular Class	950.00

11. Prompt the user if the customer would like to avail travel insurance:

Flight Type	Travel Insurance
Private Class	4,500.00
Business Class	6,500.00
Regular Class	950.00

12. The application will also compute and display the entire details of the transaction.
13. Prompts message if:

#	Error	Display Message
1	Exceed the number of passenger reservation	Sorry! You have exceeded the number of passengers required
2	Invalid Amount	Invalid Amount
3	Invalid Age	Invalid Age
4	No Details Accepted	Input Necessary Details
5	No Travel Destination Accepted	Input Travel Destination
6	Invalid Entry	Invalid Input
7	Others Possible Errors	Invalid Input
8	Invalid Travel Insurance Input	Invalid Input

RUBRICS

	RUBRICS FOR LABORATORY EXERCISES					
Criteria	**Excellent 25**	**Very Good 20**	**Good 15**	**Developing 10**	**Not Evident 5**	**SCORE (25-5)**
PROGRAM FLOW AND EXECUTION	The program works, executes correctly with no syntax or runtime errors and exceeds the expected specifications.	The program works, executes correctly with minimal syntax or runtime errors and meets all of the specifications.	The program works, executes with a minor (easily fixed error) but produces the correct results and displays them correctly. It also meets most of the other specifications.	The program produces correct results but does not display them correctly.	The program is producing incorrect results.	
SYSTEM REQUIREMENTS	The student is able to extensively meet system requirements based on the instructions gven.	The student is able to sufficiently meet system requirements based on the instructions gven.	The student is able to apply meet system requirements based on the instructions gven.	The student is able to meet some system requirements based on the instructions gven.	The student is not able to meet system requirements based on the instructions gven.	
LOGICAL DESIGN	The whole system was logically design excellently as stated in the requirements.	Most modules were logically design as stated in the requirements.	Some modules of the system were logically design as stated in the requirements.	Less modules were logically design as stated in the requirements.	Modules were not logically design as stated in the requirements.	
VISUAL DESIGN	The design is exceptionally attractive and has usable layout. it is user-friendly.	The design is attractive and has usable layout. It is user-friendly.	The design has a usable layout, but may appear plain or dull.	The design has a cluttered or confusing layout.	The design has an unusable layout.	
					TOTAL	/100

IV. QUESTION AND ANSWER

Explain the application of the key OOP concepts on the project.

Criteria	Exceptional 25	Exceeds Expectations 20	Meet Expectations 15	Poor 5	SCORE (25-10)
CONTENT	The student has gained new knowledge or perspective. Aruguments are made with a clear claim, strong evidence and if needed, a qualifier and rebuttal. Engaging, substantial and specific content.	The student has gained new knowledge or perspective. Aruguments are good but there could be minor problems. Interesting and sufficiently developed content with adequate elaboration or explanation.	The student has gained new knowledge or perspectivebut arguments are adequate and there could be problems. Limited content with inadequate elaboration or explanation.	The student has not gained any new knowledge or content, There is a seious problems wirh the contents or arguments. Minimal content.	
REQUIRED ELEMENTS	Appropriate amount of posts appear for each question/category. All blog posts and questions were answered correctly and in relation to the topic.	Appropriate amount of posts appear for each question/category. Most of the blog posts and questions were answered correctly and in relation to the topic.	Appropriate amount of posts appear for each question/category. Some of the blog posts and questions were answered correctly and in relation to the topic.	Fewer than half of the required questions were answered correctly.	
ORGANIZATION	Sophisticated arrangement of content with evident and or subtle transitions.	Functional arrangement of content that sustains a logical order with some evidence of transitions.	Confused or inconsistent arrangement of content with or without attempts of transition.	Minimal control of content management.	
CONVENTIONS	Evident control of grammar, mechanisms, usage and sentence construction.	Sufficient control of grammar, mechanisms, usage and sentence construction.	Limited control of grammar, mechanisms, usage and sentence construction.	Minimal control of grammar, mechanisms, usage and sentence construction.	
				TOTAL	/100

V. REFERENCE/s

https://www.geeksforgeeks.org/object-oriented-programming-oops-concept-in-java/