***Lab 5 –Class Diagram***

***Answer the following questions.***

Draw a class diagram which consists of all the classes in your system attributes and operations, relationships between the classes, multiplicity, and other model elements that you find appropriate.

1. APComp consists of several departments. The departments are located in one or more offices. One office acts as a headquarter. Each department has a manager who is recruited from the set of employees.
2. Consider the following Java code:

import java.util.Vector;

public class Driver {

private StringContainer b = null;

public static void main(String[] args){

Driver d = new Driver();

d.run();

}

public void run() {

b = new StringContainer();

b.add("One");

b.add("Two");

b.remove("One");

}

}

class StringContainer {

private Vector v = null;

public void add(String s) {

init();

v.add(s);

}

public boolean remove(String s) {

init();

return v.remove(s);

}

private void init() {

if (v == null)

v = new Vector();

}

}

1. To be a collector you have to have one or more collections. Each collection must have 2 or more items. Each collection belongs to one collector. A collection is made up of items owned. A particular item may be in more than one collection.

Consider the following scenario.

You, as an Information Technology manager of AsiaMax Airline Company, are required to develop a new Flight Ticket Booking System (FTBS). The new computerised system can support the work of the flight ticket booking activities to the administration clerk and report generation to the manager. In booking flight tickets, the customers can walk in to the counter to book the tickets.

The administrative clerk is able to register, update and search customer’s details when the registration is required for ticket booking. In this registration, customers are required to provide name, identity or passport number, date of birth, address, contact number and email address. The system will generate unique customer ID automatically and this customer information will be stored in database.

Following the registration, customers can proceed to book the tickets by providing the place to go, the date of departure and return, number of tickets (adult or kids), type of seat (business or economy), and passenger information. The attended clerk will search the desired tickets with the flight schedule. In this search process, a list of available flight schedule will be displayed for customer selection. The selected schedule and customer information will be placed to the customer booking file. This file contains customer information and booking details. The customer will then do final confirmation regarding the reservation with the total payment required inclusive of tax. Once the confirmation is made, customers are required to make payment of their reservation. A receipt will be generated when the payment is recorded.

The manager is able to read reports of monthly sales, detail customers, peak season ticket sales. The administrative clerk and manager have the authority access to report generation feature. The system is required to record the generated report date and time, person who generates that report and report title.

All the end users are required to login to the system in order to use the functions.

**TASK 1**

Analyse the above scenario and construct a use case diagram that depicts the functional requirements for the AsiaMax Airline Company.

**TASK 2**

Create a class diagram for FTBS of AsiaMax Airline Company. Look for opportunities to use the generalisation and composition and/or aggregation symbols. The class diagram should include main attributes and some methods for the major classes only. You may make any relevant assumptions about the business rules to support your answer.