1.0   OBJECTIVES OF THIS COURSEWORK

- Develop the practical ability to describe, justify and implement an object oriented system.

- Introduce current technical issues in the field of object oriented programming (OOP).

2.0   LEARNING OUTCOMES

At the end of this coursework, you should be able to:

- Create different basic coding solutions for small problems.

- Explain on the object oriented concepts and apply them using C#.

- Create an application by applying object oriented techniques.

3.0   TYPE

- Group Assignment

4.0   GROUP ASSIGNMENT DESCRIPTION

Pacific is a renowned tour operator desires to implement a new reservation system to improve the total reservation process. The system will enable staff to reserve holiday tour packages and hotel rooms for its customers. Customers will need to register with the staff for the reservation services. Each customer is identified by a customer number (IC/Passport may be used as the customer search number) and other details such as customer name, home address, contact number, email address and the date of booking will be recorded for each customer.

- The system should provide reservation for holiday tours and hotel reservation packages:

    - **Hotels** - The system should offer hotel reservations. The available hotels and guesthouses should can be searched. The hotels range from luxury to budget accommodations.

      Note: Hotel rooms will only be assigned during check-in at the hotel. At the moment, the system to be developed only takes in one reservation from a customer and the reservation will then be forwarded to the respective hotels.

    - **Holiday Packages** – The system should provide the options to book available Holiday Package.

The following holiday packages and hotels options are currently available:

Holiday Tour Packages	Cost
Langkawi Island Tour (4 days 3 nights)	RM 1200
Cameron Highlands Tour (3 days 2 nights)	RM 800
Tioman Island Tour (5 days 4 nights)	RM 1000

Hotel	Room Type	Price
Cameron Highlands Resort	Single	RM 180
	Double Bed	RM 350
	Family Suite	RM 500
Century Pines Resort	Single	RM 200
	Double Bed	RM 360
	Family Suite	
Berjaya Langkawi Resort	Single	RM200
	Double Bed	RM380
	Family Suite	RM600
Adya Hotel Langkawi	Single	RM180
	Double Bed	RM240
	Family Suite	RM400
Tunamaya Beach & Spa Resort	Single	RM220
	Double Bed	RM350
	Family Suite	RM480
Berjaya Tioman Resort	Single	RM250
	Double Bed	RM380
	Family Suite	RM520

The system should be able to include and exclude Holiday Packages and Hotel as when required.

Discounts are offered to holiday-goers who make reservations **<u>for both</u>** the holiday tours and hotel reservation packages as follows:

	Room Type	Discount
Any Tour Package	Single Bed	10%
	Double Bed	20%
	Family Suite	40%

Customers will need to pay 20% of the selected package(s) amount upon successful booking for any of the Holiday Packages. The remaining amount will need to be paid 3 days before the commencement of the holiday package, otherwise the deposit will be forfeited. Cancellations may be made 5 days prior to the scheduled date. If the payment made is late, an administrative charge of RM50 may be applicable. A receipt for payments made should be generated using the Reporting feature of Visual Studio.

System Modules should include the following:

- Holiday Package search and booking
- Hotel search and reservations
- Reservation/Booking Cancellation module
- Reservation/Booking modification module
- Payment
- Report

- Detailed system features should include the following:
    - Flexible search capabilities to enable quick retrieval of holiday and hotel results
    - Cancellation policy check
    - Search result display for holiday destinations and related hotels.
    - Availability information for all hotel rooms
    - Average room rates on weekly and monthly calendar.
    - Payment Options
    - Report generation for Manager on daily transactions which should be generated using Microsoft Visual Studio Report Viewer. The report should be visible only by Manager and no other staffs should be able to access it.

IMPORTANT INSTRUCTIONS:

This is a group assignment. Each group should consist of between 2 – 3 members only. Upon submission of your assignment, you are required to present your assignment at a date and time specified by your module lecturer.

Each team member is required to contribute towards some features in the system and documentation, present and explain his or her work accordingly. Each team member should also be able to answer questions during presentation with regards to the overall systems project and or specific question(s) related to the codes used in the development.

5.0   GENERAL REQUIREMENTS

The program you submit should be able to compile without errors using Visual Studio. You should comply with the following coding style guidelines for the system:

- Use C# features
- Use GUI for the user interface
- Use object-oriented concepts in the solution
- Document your codes by using comments where necessary
- Use indentation
- Use meaningful names for identifiers

You should store all the data in a database management system such as Microsoft Access or Microsoft SQL Server Express Edition (this is bundled with Visual Studio), so that the information can be retrieved later. Alternatively you may also store the data using a database in Microsoft SQL Server or any database type.

You have to assume that this system is a stand-alone application and used by the specified users. **Validation of input data** should be implemented in the system to prevent errors. The implementation code must include **at minimum** the use of object oriented programming concepts such as classes and objects.

DELIVERABLES:

6.1   GROUP ASSIGNMENT DELIVERABLES

- **The Tour Operator Reservation System** with complete codes submitted in softcopy via CD or DVD.
- Documents delivered in printed and softcopy form.

Submission of deliverables should be made to the administrative counter on or before **7.00pm, dated 6th February 2017.**

6.1.1   *TOUR OPERATOR RESERVATION SYSTEM IN CD / DVD:*

- The completed application must be compiled into an executable file (*.exe) and burned onto a CD / DVD

- The CD / DVD should also include all relevant source code (*.cs) in the systems project.

- The program must contain all the relevant source code.

- You are advised to limit the number of pages of the report to a maximum of **TWENTY (20)** pages. The font size used in the report must be **12pt** and the font is **Times New Roman**. Full source code is not to be included in the report. The report must be typed and clearly printed.

- *Header and Footer*
  Ensure that headers and footers are included in the documentation.
  - *Header*: Module code and module name on the left followed by page number (right).
  - *Footer*: The intake code (left) and institution name (center) of the footer.

6.1.2   *DOCUMENTS: GROUP ASSIGNMENT REPORT*

- As part of the assessment, you must submit the project report in printed and softcopy form, which should have the following format:

- *A) Cover Page:*
  All reports must be prepared with a *front cover*. A protective transparent plastic sheet can be placed in front of the report to protect the front cover. The front cover should be presented with the following details:
  - Module
  - Title : **Tour Operator Reservation System**
  - Intake
  - Student's name and id
  - Date Assigned (the date the report was handed out).
  - Date Completed (the date the report is due to be handed in).

B) Contents:
- Storyboard that shows the draft design of the screens to be implemented in the system. This may be documented through free-hand sketches or may be documented using a wire-framing tool such as Pencil (*https://pencil.evolus.vn/*), an open-source software. *(refer to Appendix A for sample)*
- Description and justification of the design in terms of the classes to be implemented in the system – class diagram demonstrating the relationship between classes
- Description and justification of the implementation codes in terms of object oriented programming concepts – class & objects used in the implementation
- Test Plan and test cases documenting the functions tested in the system. At least 15 test cases should be documented. *(refer to Appendix B for sample)*

C) Conclusion
- A critical assessment of the system developed which includes the strengths, the weaknesses and recommendations to enhance the system.

D) References
- You may source algorithms and information from the Internet or books. Proper referencing of the resources should be evident in the document.
- All references must be made using the Harvard Naming Convention as shown below:

> *The theory was first propounded in 1970 (Larsen, A.E. 1971), but since then has been refuted; M.K. Larsen (1983) is among those most energetic in their opposition……….*
>
> */***
> ** Following source code obtained from (Danang, S.N. 2002)*
> **/*
> *int noshape=2;*
> *noshape=GetShape();*

- List of references at the end of your document or source code must be specified in the following format:

> *Larsen, A.E. 1971, A Guide to the Aquatic Science Literature, McGraw-Hill, London.*
>
> *Larsen, M.K. 1983, British Medical Journal [Online], Available from http://libinfor.ume.maine.edu/acquatic.htm (Accessed 19 November 1995)*

> *Danang, S.N., 2002, Finding Similar Images [Online], The Code Project, *Available from http://www.codeproject.com/bitmap/cbir.asp, [Accessed 14th *September 2006]*

- Further information on other types of citation is available in *Petrie, A., 2003, UWE Library Services Study Skills: How to reference [online], England, University of Western England, Available from http://www.uweac.uk/library/resources/general/info_study_skills/harvard2.htm, [Accessed 4th September 2003].*

E) *Workload Matrix (refer to Appendix C for template)*
The workload matrix should indicate the section or task completed by each team member. Individual Marks will be distributed accordingly by each team member's contribution towards the assignment.

6.0   GROUP ASSIGNMENT MARKING CRITERIA

Individual Component (30%)
- Presentation (10%)
- Q & A (10%)
- Contribution (10%)
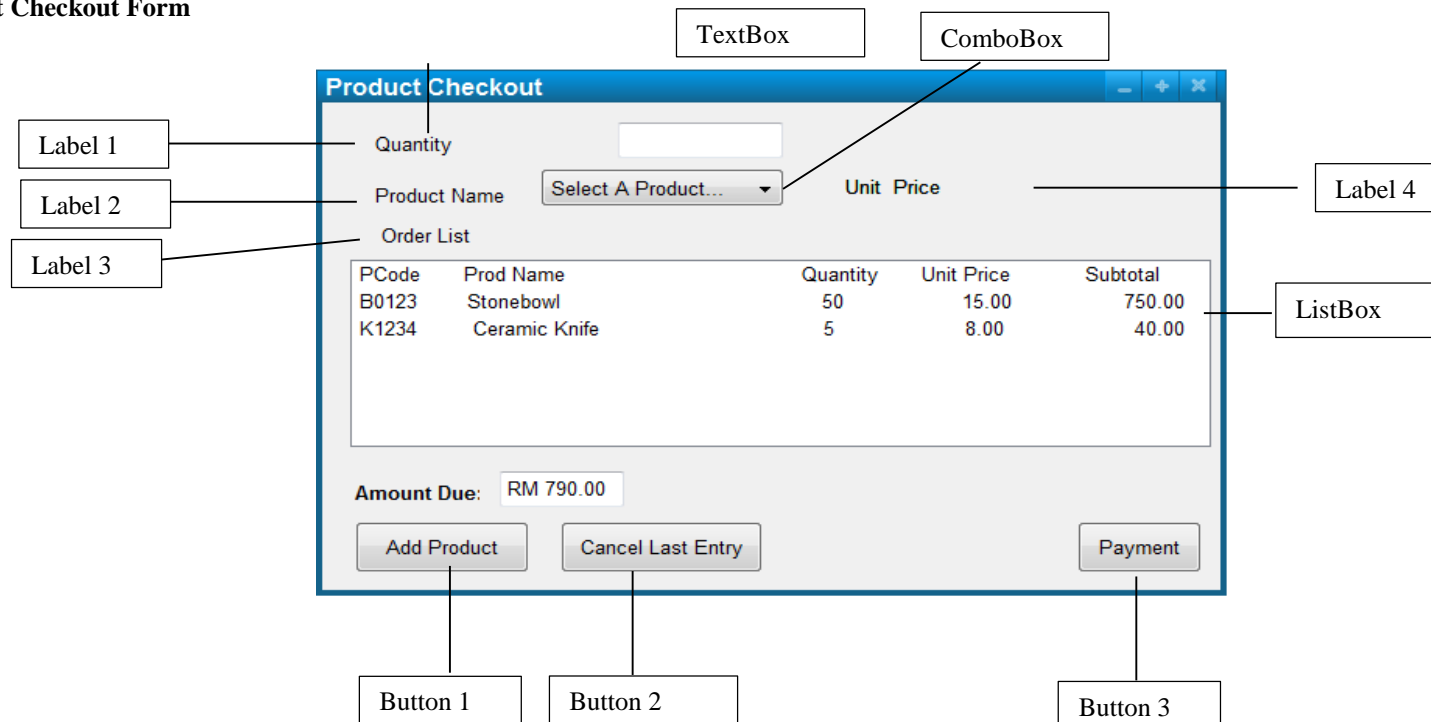
Group Component (70%)
- Standard Layout and Content (10%)
- System Modelling (10%)
- Test Plan and Cases (10%)

7.0   ACADEMIC INTEGRITY

- You are expected to maintain the utmost level of academic integrity during the duration of the course.

- Plagiarism is a serious offence and will be dealt with according to APU and Staffordshire University regulations on plagiarism.

Appendix A – Sample Storyboard Documentation

Product Checkout Form

TextBox		ComboBox

Product Checkout

Label 1 — Quantity

Label 2 — Product Name   Select A Product...   Unit Price — Label 4

Label 3 — Order List

PCode	Prod Name	Quantity	Unit Price	Subtotal
B0123	Stonebowl	50	15.00	750.00
K1234	Ceramic Knife	5	8.00	40.00

ListBox

Amount Due: RM 790.00

Add Product   Cancel Last Entry   Payment

Button 1   Button 2   Button 3

Control	Control Name	Description
Label 1	Label 1	
Label 2	Label 2	To label the related controls to the right
Label 3	Label 3	
Label 4	lblUnitPrice	To display the unit price of a selected product
ComboBox	cboProduct	To allow selection of products from a list
TextBox	txtQuantity	To allow entering of product quantity needed
Button 1	btnAddProduct	To enable adding of a selected product to the order list
Button 2	btnCancel	To enable removing or editing of the last product entry in the order list
Button 3	btnPayment	To calculate the total order amount and print the receipt for the products ordered

Appendix B –Test Plan and Test Cases Template (*Two sample entries are shown*)

Test Case	Function Name	Test Objective	Expected Result	Actual Result	Remarks
1	*Name of the function to be tested*	*The test objective will indicate what is to be tested*	*The expected result of the function as how it is supposed to work*	*The result from the function execution during testing*	*Optional, add remarks if needed correction to the function*
2	*Add Member – validate email address*	*To test whether validation of email is correct*	*Display error message if the email entered does not have the "@" and "." in the text string*	▪ *Only display error message if "@" is omitted in the email.* ▪ *No error displayed for the "." omission*	*Function codes need to be checked again*
3	*Update Member status*	*Member details can be updated*	*Display notification when update is successful*	▪ *Notification is displayed correctly*	*None*

Appendix C – Workload Matrix Template

No.	Assigned Task & Brief Description	Assigned Member Name	Completion Status / Comment
1.			
2.			