# FC723 Project – Submission Guidance

Please see the FC723 Project 1 ATI for precise information regarding your assessment, this document is meant to supplement the ATI.

## https://pathways.kaplaninternational.com/mod/resource/view.php?id=677627

## Task Information

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| You have been approached by the Apache airlines to develop a software product to support the expansion of their operation. The management of the Apache airlines produced a briefing of the specification as described below.  The Apache airlines purchased a new fleet of Burak757 passenger jets and requires a new software to make seat bookings. The diagram below shows the floor plan of a Burak757. The customers can book a seat or seats. If the customer books a seat then the letter "R" is stored to indicate the booking, the rest of the free seats must be indicated by storing letter “F”. A seat is booked only if a the given seat is free. The "X" denotes the isles on the floor, therefore, no booking must be made on those spaces. Likewise the “S” denotes storage area, therefore, no booking must be made on those spaces either. The Apache airline needs this software product (software and all deliverables)     |  |  |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | | 1A | 2A | 3A | 4A | ... | ... | 77A | 78A | 79A | 80A | | 1B | 2B | 3B | 4B | ... | ... | 77B | 78B | 79B | 80B | | 1C | 2C | 3C | 4C | .. | ... | 77C | 78C | 79C | 80C | | X | X | X | X | .. | ... | X | X | X | X | | 1D | 2D | 3D | 4D | .. | ... | S | S | 79D | 80D | | 1E | 2E | 3E | 4E | .. | … | S | S | 79E | 80E | | 1F | 2F | 3F | 4F | .. | ... | S | S | 79F | 80F |       **Part A:**  1. Describe a software development process in detail that you would choose for the development for the above description. Your answer must provide at least three rationale for the choice you make.  (3 marks)  2. As a systems analyst, study the description provided by the Apache airlines and produce a formal Functional Requirements Specification document to capture the requirements of the prospective software system of Apache airlines. At least five requirements must be identified in the Functional Requirements Specification document.  (5 marks)  3. Produce an activity diagram that will represent the identified functionalities of the prospective system.  (2 marks)  4. Develop a seat-booking application in Python that will provide the following functionalities given below. The functionalities must be listed in a menu as options. The menu must be available to the used until the program is terminated. Provide comments within your programs in such a way that the comments can be later used for producing documentation of your program.   Menu functionalities:   1. Check availability of seat    2. Book a seat  3. Free a seat  4. Show booking status    5. Exit program  (10 marks)    5. Describe and implement a common functionality that may be available in a airline booking system but not described in Apache airlines description above (you may have to update your activity diagram).  (3 marks)   6. In order to maintain version control of your code base, create a publicly accessible github repository within your account and commit your code to the remote repository. Describe in detail the steps you followed to achieve this task. Provide the link to your repository.   (2 marks)    **Part B**   In a later date, the Apache airline provided more information related to the requirements of the future software. The airline decided allocate a booking reference to each customer, therefore, when a new booking is made the system must store store a booking reference in place of letter “R” and traveller details such as passport number, first name, last name,  seat row and seat column to be maintained in a database table. **Refactor** your code from part A to satisfy the following requirements.   1. Develop a functionality based on an algorithm that will produce a random booking reference. The booking reference must have exactly eight alphanumeric characters. When a new reference is produced the system must make sure the reference is repetitive. You must comment your code and describe in detail the implementation logic of your algorithm.  (5 marks)   2. Refactor your functionalities from part A in such a way that when a booking is made the reference is stored in the data structure and customer data is stored on a database table. Likewise, when a seat is freed the letter “F” is stored and any booking details from the database is removed. On completion of this task, make the second commit to the remote repository.   (8 marks)   3. Describe the git command that can be used show the updates you have made to the program. Give an example using your own repository.    (2 marks)  **Part C**  Write a 1000 word essay, with UML diagrams. The essay should describe, referencing Use Case Diagrams, Activity Diagrams and Class Diagrams that you have drawn, what your software does and how your software works.  (40 marks)  **Please note:**  This is an individual assessment so you should not work with any other student. |

## Marking Criteria

**There are a total of 80 marks available for this project.**

## Submission Guidance

Please make sure you do the following when submitting your project via the VLE Turnitin link:

* All files containing code should have the ‘.py’ file extension and should be contained in a folder named ‘**FC723 Project - Application**’.
* All written documents should be completed in Microsoft Word and should be in a folder names ‘**FC723 Project – Documentation**’.
* The folders ‘**FC723 Project - Application**’ and ‘**FC723 Project – Documentation**’ should themselves be contained in another folder called ‘**FC723 Project – PXXXXXX**’ where you should fill in your P-Number. This folder should then be converted to a zipped folder (**with the .zip extension**). Guidance will be given in class on how to do this.