5COM0053 Computer Science Development Exercise

2021\_22

5COM0061 Information Technology Development Exercise

2021\_22 Mega Independent Cinema Experience - MICE

Integrative Assignment Case Study

From: **Mr Bill Payer, CEO DoITSystems**

Date: **10-Oct-2021**

To: **your Team**

Subject**: Major Opportunity for DoIT: MICE- System**

I am pleased to inform you that DoITSystems has won a contract to produce a booking system for the Mega Independent Cinema Experience.

Ms Penny Pincher, our Business Development Director and I visited the customer MICE, last week and she wrote the following “Interview Notes”, which is your starting point. Ms Pincher believes she has captured all the essential requirements and is very busy at the moment but is prepared to accept questions you might have to clarify the customer’s exact needs.

Part 2: Interview Notes

**2021 MICE Feasibility Study**

**Notes on Meetings with the MICE Executive Group**

written by: **Ms P.Pincher, Business Development Director, DoIT Systems**

**NOTE:** the text in blue is relevant to the first stage of the project *[implemented for the DB module]*

1. Background

MICE is small group of independent cinemas showing what they regard as quality films. There is a membership scheme for film enthusiasts which offers MICE members common deals and benefits.

MICE wish to make use of internet and mobile technology to attract new audiences and provide better facilities for existing users. Initial prototype designs for their new booking system must be completed by the early Jan 2022, with working prototypes completed by the end of April 2022. The best prototype will be awarded the contract to implement the MICE system, which must be in place by the end of May 2022 so that implementation can be completed well before their Summer Movie Festival in July 2022. The "best" prototype will be the one which, in the view of the client, has best captured the system requirements and provides the best implementation.

2. Cinemas - general details

There are a number of cinema venues in Hertfordshire. Each screen only shows one film an evening, although some of the venues have more than one screen with different capacities (number of seats) – therefore the venue can show more than one film in an evening. A specific film will be performed over a number of evenings on the same screen, the collective performances are known as a showings. Start/end dates for showings may be different for different screens. A film performance would be for a specific film performed on a specific screen, at a specific venue on a specific date. The same film may be shown at different venues, or may be moved to different screens at the same venue.

For each performance of a film, the owners would like to know how much money was taken so that they can work out how much a film brings in overall for a showing, and collectively from the different cinemas in which it is performed, thus indicating which is the most popular film (and the least!).

Each cinema employs a group of employees with certain job types such as: Administrator, Receptionist, Cinema Manager, Projectionist, Booking Office clerk, Usher, Cleaner. Employees only work in one cinema. Each cinema only has one manager and some employees supervise other employees. A manager can only manage one cinema. At its administrative centre, MICE also has staff which help administer the group, such as Accountant, CEO, Central Advanced Booking Sales staff, assistants.

Film enthusiasts may join a membership scheme (renewable each calendar year) which gives them discounts on seats and preferential access to events such as talks, exhibitions, outings. On joining the scheme, members get a membership card with a membership number. There are plans to extend this to include different types of memberships with a range of special offers, but this will not be included in the initial prototype.

3. Booking system

A "booking" specifies a film performance at a specific screen of a specific venue and acts as a ticket to that event. The booking may be for one or more seats. Each booking has the name of the person making the booking. For group bookings there are no individual tickets and all members of the group are allowed entry to the screen together.

Currently, cinema goers may make a booking on arrival at the cinema venue and pay in cash or card at the time. A printed booking allows them to enter the screen for the performance. Or they may phone Central Advanced Ticket Sales (CATS) to make a booking for a future performance. Advanced bookings must be paid for by debit/credit card at the time. MICE operate a "one-price seats" policy which means that all of the seats at a specific screen have the same price, but prices may differ between screens/venues/films. In addition, screens will have different capacities (number of seats), and it is important that booking sales for a specific performance do not exceed the capacity of that screen. Bookings, (currently printed on paper) must be presented to an usher at the entrance to the screen, and ushers must check that the booking entitles the holder to entry for that specific performance.

MICE would like to be able to offer an online booking system (to take over most functions currently done by CATS), flexible facilities for payments using a range of electronic media. Booking offices at cinemas will continue to operate for casual cinema goers, but will use the same online booking system with an option for cash payments. It is also expected that in the future, ushers will be replaced by bar code reading turnstiles, which will allow/deny entry to screens.

CATS and booking offices frequently get enquiries asking for the venues/screens performance specific films, or for other information about films/performances/venues. The new website should allow cinema goers to browse and query all of the cinema venues in the MICE scheme and the films they are/will be offering. In addition, it should allow Cinema Mangers facilities to manage the performances and showings at their cinemas.

4. High Level Objectives for MICE System

The system needs to provide facilities to manage bookings and entries to film showings, as well as management of the showings provided by MICE.

The prototype needs to provide facilities to manage bookings and entries to film performances, as well as management of the showings provided by MICE.

The MICE prototype should be able to:

1. cinema manager to maintain information about MICE cinemas, their film showings and performances
2. allow a cinema goers to make a booking for a film performance. The booking may be for one/several seats
3. decide whether a booking is authorized to enter a screen for a showing.
4. allow bookings to be cancelled. Note: requests to amend a booking will cause the cancellation of the old booking and creation of a new one.
5. allow film performance dates/screens to be changed, cancelled or moved by the cinema manger(and then manage re-funds/re-bookings)
6. allow people to sign up for the membership scheme, provide membership cards(on screen) and include membership discounts in booking.
7. provide flexible access to information about films/showings/screens/venues
8. provide management information about booking sales and attendance.
9. allow a cinema to join or leave the MICE group
10. present data in a variety of ways, including graphically, e.g. for managers to get an overview of attendance, for staff to get information on seat availability, for cinema goers to get required information/make bookings

**NOTE: the following are NOT part of the system:**

1. **provision of paper bookings and taking payments. However, costs, bookings and receipts will be displayed on screen**
2. **entry by barcode reading turnstiles. However, data for entry to a showing will be entered at a keyboard and the results displayed on a screen.**
3. **provision of actual membership cards. However, membership details will be available on line**
4. **operation of the website on mobile devices**

5. MICE system

To support the above requirements, the MICE prototype should have a system delivered through standard PCs with appropriate user interface(s) at cinemas/CATS and make use of internet connections The current end-users for this will be the cinema booking office staff, the CATS staff, ushers (eventually bar code reader turnstiles), members as well as others who may need to view information available on the system. The extension to mobile technology is not part of the prototype.

4.1 Other Considerations:

The use of graphics, where relevant and useful, is considered desirable by MICE. They explicitly mentioned, use of colour codes to distinguish different cinemas, screens, film types, and accessibility to visually impaired users. The web interface should have an easy-to-use layout and show the MICE logo. Computer screens should only show data which is appropriate to the access privileges of the user. Only the Cinema manager should be allowed to manage showings, performances and set seat prices. Cinemas already have computer hardware and this should be used for the new system whenever possible. In addition, the system must be GDPR compliant. Cinema goers should be able to use the web site without signing up to the membership scheme.

4.2 Out of scope  
The following aspect of the booking system will NOT be considered at this stage:

1. the software/hardware to support printing out bookings
2. the software/hardware to support the use of bar code reading turnstiles
3. the software/hardware for online payments or CCVS
4. the software to provide applications for mobile devices.

However any future software developed for the main MICE would need to integrate with the above systems. The contract for the MICE prototype does not include integration with these components i.e. is outside the scope of the prototype. However, the prototype must be capable of appropriate input/output which demonstrates the capabilities of the system.

6. MICE system implementation

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7. MICE system data design

In discussions with MICE, it has been established that the first priority of MICE is to have a way of managing and displaying films which will be showing in the MICE cinemas, as well as providing facilities which allow users to interrogate/query this information. This however is only part of the much larger system which you will be expected to develop.

Some preliminary data design has already been done on this and you will be expected to implement this aspect of the MICE system.

***Penny Pincher***

Assignment considerations

As part of your Databases module, you will be implementing 6. above. This will form part of the much wider system which will be considered by the CS/ITDE assignments.