      Mongoose Games Computing NEA

Discussion

Introduction

I have been hired by Mongoose Games to design and develop a system with a core functionality of buying and selling games to an array of customers. More importantly I am required to test and evaluate the finished system to establish if it conforms to the prescribed user requirement. The client currently employs 3 members of staff and commands a portfolio of 250 different games between different consoles. The client has an average of 500 customers. As customer numbers are increasing, the current system that has been running since the store was first opened (15 years ago) no longer fit its purpose with the size of the company. Currently most calculations are done on paper such as coming up with buying and reselling prices which is particularly time consuming and as there are shift changes, different employees have different opinions on the suggested prices which can lead to loss of money detrimental to the profitability of the business. The new system the client requires will be able to calculate all these prices by using complex algorithms which take various factors into account in order to ensure profit and eliminate human error. This extra money will help the company increase the number of games in order to appeal to a wider range of people and in turn increasing business.

Aims of the project

This section of the project will describe the broad aims of the computer system that I propose to design and develop for Mongoose Games. Bullet listed below are the aims of the proposed project.

The proposed solution should:

* Contain a preset algorithm implemented into the system which is used when coming up with selling prices for certain games.
* Contain a preset algorithm implemented into the system which is used when coming up with buying prices for certain games brought in by customers.
* Allow authorised members of staff to login using their preset logins
* Allow users to login to their existing account or create a new account to allow them to access the features that a customer account offers such buying or selling games.
* Allow users to be able to change their credentials by entering whether they want to change their username or password, and then the data they wish to change it to.
* Allow users to view all of the information that the system has stored about them
* Allow employees to sell games to customers by entering the game ID, customer ID and Price which will update the system.
* Allow employees to buy games from customers by entering the game ID, customer ID and Price which will update the system
* Allow employees to add games that have been bought from customers into the system by entering their customer ID, game ID and Price.
* Allow employees to enter new games into the database.
* Allow games to be deleted from the database once they are sold.
* Allow games to be deleted for other valid reasons (e.g. lost or stolen).
* Allow the viewing of games that have previously been bought by customers.
* Allow the viewing of games that have previously been bought from customers.
* Allow employees to check the quantity of each game in store
* Allow the front covers of each game to be shown when being viewed by anyone.
* Allow employees to view and update customer information.
* Allow anyone to view all the games currently in stock.
* Allow anyone to search through the games currently in stock.
* Allow anyone to order all available games by a certain field (e.g. Price, Release date, Genre, Publisher)
* Allow employees to check game information (e.g. Release date, Publisher, Number in franchise, Genre).
* Allow customers to reserve games from home to later pick up in store.
* Allow customers to receive a quote for their game.
* Allow games that are bought from customers to be put up as available to be bought in the system instantly but for a higher price (determined by a set algorithm).
* Develop the program so that customers can access the system from home via an app to set up a sale for a game they have or buy games for them to collect from the store.

When the new system is created it will help the company to save a lot of time with monotonous tasks such as manually inventing selling and buying prices. Overall the company will be more efficient with the new system.

Limitations

* When employees are shown games that the customer wants to sell or if they are selling a game to a customer, they will only have the game title and ID on their monitor. It would be helpful if they would see the cover of each game to confirm if it’s the right one and to provide overall visual aid. Currently the system will not have this feature and will have to be added in the new system.
* It could prove difficult to be able to develop an application that will allow customers to be able to connect to the system at home. This is due to the fact that all of the different devices will have be able to communicate with the central database. Moreover, the application would have to be able to run on multiple devices and so it would have to be compatible with them. It may be hard to achieve within the time frame given.
* When games are bought from customers the amount they should be given in pounds will be determined by taking the release date, popularity and damage to the case into account in the algorithm that determines this. A similar algorithm then needs to be applied to the price it was bought from the customer to determine how much it should be increased by before being listed for sale on the system to ensure a realistic price while maintaining profit. Currently the system does not have these algorithms and they will have to be added.

Possible limitations of a solution to the problem

This section will describe the potential limitations I proposed to solve Mongoose’s Games current problems.

* When trying to make both a system for the store and an app for the customers at home and on the go, the problem is that the app and the main system will both have to be programmed in VBA for them to be able to communicate correctly. They will also both need to be linked together securely over the internet in order to function properly e.g. actions to be recorded in real time. This could be time consuming and security would also a required feature to accommodate this and so extra measures would have to be implemented to secure user information.
* The system would need to be compatible with a range of devices and operating systems to appeal to all customers and to function properly. As I will use Visual Studio 2017 as the IDE to create the code, it would be challenging to install the .NET Framework on mobile devices due to compatibility issues.
* Storing pictures of all the games on the database may not be feasible as it is a lengthy process. The storage space to store high quality images also needs to be taken into consideration as it will be demanding on RAM which could in turn affect the speed of the program.
* The algorithms that will be used to calculate prices for games need to be very accurate, considering a wide range of factors to ensure that reliable prices are given.

Feedback

The feedback that I have received from the client was that the system idea was excellent and the possibility of adding an application for users to log in at home although being deemed ambitious given the time constraints to deliver the project, it’s an exceptional idea. The client has also mentioned that it would be essential if I would be able to come up with accurate and appropriate algorithms to come up with prices to offer customers for their games as well as resell prices to reduce the need of human opinion to come up with the prices which has proven to be inaccurate and detrimental to the profitability of the business. I had identified this issue within my limitations section and it will be further explored.