



Advanced Databases for MSc

A Database System to Support a Self-Service Email Marketing System

Level 7 — MSc in Databases and Web-based Systems

MSc in Data Science

MSc in Software Engineering

MSc in Advanced Computing

Assignment Information

Assessment Title : A Database System to Support a Self-Service Email Marketing System		
Module Title : Advanced Databases for MSc		
Module CRN Code : 33386, 34902	Level: 7	Semester: 2
Programme Code(s):	Issue date¹:	week 6 (10/03/17)
Weighting : 50 % of the total module mark	Submission date²:	week 12 (08/05/17 16:00)
Assessor(s) : Dr. Mo Saraee	Return date³:	Depends on date of individual demonstration. Final mark will be available max 3 weeks after demo.

¹ Date on which brief was given to students

² Date by which assessment is to be submitted

³ Date by which feedback will be made available to students. This must be within 15 working days of the submission date.

Learning Outcomes of this Assessment

The learning outcomes covered by this assignment are:

- Provide a broad overview of the general field of 'database systems' and to develop specialised knowledge in areas that demonstrate the interaction and synergy between ongoing research and practical deployment of this field of study.

Key Skills to be Assessed

This assignment assesses your skills in:

- Designing and implementing a database system
- Conveying your knowledge of database systems
- Use of T-SQL

Recommended Reading

The module notes are sufficient literature for completing this assignment successfully.

Equipment and Facilities to be Used

The assignment has to be implemented using T-SQL and any data should be stored in a Microsoft SQL server database. SQL statements should be stored in plain text files. Your submission must run on a computer with Microsoft SQL Server 2012, 2014 or 2016.

Workload

For the successful completion of this assignment, a total of 75 hours should be budgeted.

Task

Imagine you are a database developer consulting for a digital marketing company (the client). The client is currently in the process of developing a self-service email marketing system called effectMail with their in-house software development team. effectMail is a simple and low-cost web base self-service software solution for those who are new to email marketing.

Introduction to effectMail



Setting Up an effectMail Account

Start with effectMail free account by creating a username and a secure password. effectMail does not let you start with a paid account right away as it wants to make sure the account is correctly set up and not used for spam. The system takes the spam concerns seriously, so you must activate your account by clicking on the link in confirmation email. effectMail also requires a valid company name, phone number and URL for your website, if you do not have those details, you can still setup an account by calling effectMail sales team.

Multi-user account

effectMail provides multi-user account facility for premium customers. A multiple account enables multiple users to login to the same account in order to do the job according to their permission level. This means that it is possible to maintain a single account for your entire marketing team. The account owner can add as many users as he wants and limit what permissions each of them has. You can choose role for each user: account manager, marketing executive, marketing assistant, etc... or create a customized permission.

Email Marketing Packages

effectMail has a very attractive pricing strategy. Many small businesses will pick up effectMail because it provides professional email marketing services for free. The free plan lets you send 500 emails per month to less than 100 subscribers. This works if you have a fairly small subscriber list. If you email your subscribers more frequently, then you will outgrow this plan. The monthly paid plans let you send unlimited emails and the pricing varies by the number of subscribers. The lowest subscription plan begins at £20 per month for up to 500 subscribers. Pricing then rises to £30 per month for up to 1,000 subscribers and £40 per month for up to 2000 subscribers. You can enter the number of estimated subscribers on the handy calculator available on the website to get an exact price.

Creating a Subscriber List

Upload email contacts by using a Microsoft Excel or CSV file, or by manually adding them one at a time. If you have a very large subscriber list, effectMail technical support team can help uploading those contacts to the system through a special backend tool and this service will be free for the lists contain more than 20,000 contacts.

Setting up a Campaign

When you first log in, you will be prompted to create your first campaign. The effectMail self-service email builder includes over a dozen of predesigned templates to choose; you can customize them with your own images, links, and texts. You can drag and drop elements such as images, spacers, texts, videos, and social buttons, and customize the colour and style of each. Also can easily delete an unwanted element by clicking on it, which reveals a trash icon. You can adjust font style, size, and colour too. Also can preview your email on both desktop and mobile, so you can get a sense of how it looks like on different platforms and devices.

Once you have finished building, you can then preview the campaign. Finally, you need to select your email list (subscriber list) to which you would like to send your email. Before you send the campaign out, you can send a test email to make sure there are no errors. You can either send the campaign right away or schedule it for another date. When you hit Send button, you will see a pop-up message with an overview of the campaign, with the number of contacts, subject, From name, and From email, so you can do one last check. When your campaign is delivered to all the recipients, effectMail will send you a confirmation email.

Tracking a Campaign

effectMail has a special email tracking mechanism, so you can easily see subscriber activity. In-depth analytics data is available for you as soon as you send out your email campaign. The campaign status page shows the standard information about your campaign such as number of opens, clicks, unsubscribes, forwards, and bounces statistics.

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client require your knowledge and expertise to design, implement and test a database system. You will provide a report detailing your suggested schema and advice. You will also provide your SQL statements with appropriate comments and a full backup of your database schema and example content.

In addition to the database schema the client also requires working SQL statements, with comments to achieve the following:

- Inserting, editing, activating and deactivating user accounts.
- Inserting, editing and removing users.
- Inserting, editing and removing subscribers (email contacts). They would also like to be able to have a search facility in the subscribers section .
- Inserting, editing and removing email template data.
- Inserting, editing and removing email campaign data. They would also like to be able to have a searchable history of previous campaign data.
- Show standard information about the campaign including opens, clicks, unsubscribes, forwards, and bounces.

You should demonstrate your knowledge of concurrency techniques in the statements to ensure consistency of the database when multiple users are simultaneously updating.

Extra features to be implemented

To get more than a “Satisfactory” mark, a number of extra features should be implemented. Features include, but are not limited to:

- Use of views
- Use of stored procedures
- Use of system functions and user defined functions
- Use of SSIS package to bring bulk email list into the system for premium customers.
- Use of SSRS Reporting tools to display user and campaign statistics for the client.