

Final Report

ModsDesigns

Mitch Dusina, Robert Gregory, Rory Olsen

Abstract

The ModsDesigns website's main purpose is to provide a method for parents to play an active role in their children's lives using modern technology that is both easy to use for parents and relevant to the child. The site enables parents to send electronic textcards™ (picture messages) to their child's mobile phone. A future version of the website will be a revenue source for the client as well as a source of money for donations to charity organizations.

The goal of this project was to transform the existing electronic textcard™ idea and client-provided site mock-ups into a functioning database-backed website. Our focus was primarily on the functional aspect of the solution, specifically on the picture messaging portion. Aesthetic aspects were deemed less relevant, since it would take little technical knowledge to enhance the look-and-feel than to extend the functionalities.

Our solution was to use a tethered modem connected to the client's computer to send picture messages. A desktop application communicating with the tethered modem was implemented using C#, a website for interacting with the system was implemented using PHP, and a database for storing all associated data was implemented using MySQL.

The resulting solution is a work-in-progress. Due to time constraints, we were unable to fully implement all aspects of the project as the client had originally envisioned. The currently existing project allows users to log in on a website and send free textcards™.

Introduction

ModsDesigns is a start-up company based in Golden, Colorado and headed by Jill Modesitt. The client was seeking a website that allows users – particularly families – to better stay in touch by providing the ability to send picture-based textcards™ to mobile phones. The primary purpose of the website is to bring family interactions into the 21st century. The idea being that today's youth might respond better to a picture message than a traditional paper card. An important secondary purpose was to create a revenue source which can be used to fund kid-centric charities (this feature was not implemented in this version).

Requirements

Functional

The three main components of the project are: the website to interact with customers, the tethered modem and associated desktop application to send textcards™ to phones (the MMS component), and the database to store pertinent information used by both the website and MMS component. All textcards™ are provided and created by the client.

Website

The website must allow users to select a textcard™ from the full Gallery or a temporary Free Greetings section. The Free Greetings section is a small, temporary collection of textcards™ that are free for anyone to send. The Gallery is a larger collection that requires users to subscribe and pay a time-based fee in order to send textcard™ greetings (although unsubscribed users may view a watermarked version of the Gallery). Additionally, subscribed users may schedule textcards™ to be sent at a future time – delayed delivery. The website has the following pages:

- Home Page
 - Non-Subscriber Home - This version of Home has text areas, a Free Greetings Gallery of approximately five textcards™, and data fields to allow sending of those images. Also, this page allows users to create or delete contacts.
 - Subscriber Home - This page shows a customer-oriented version of Home. Customers can see links to the My Account and My Cart pages and the complete gallery of textcards™ (the Gallery), which can eventually be searched by selecting tags. This page also contains data fields to allow sending of those textcards™ and allows users to create or delete contacts. Users must have subscribed and logged in to see the Subscriber Home.
- FAQs - The FAQs page shows a list of Frequently Asked Questions.
- View-Only Gallery - This page allows users who are not subscribed or logged in to see the images from the Gallery but not to send them.
- Phone Requirements - The Phone Requirements page describes what phones can and cannot be used with the site.
- Privacy Policy - The Privacy Policy page describes the privacy policy regarding personal information.
- Subscription Plans - The Subscriptions Plans page describes the three different subscription plans.
- Service Agreement/Terms of Use - This page describes legal information pertaining to the service agreement and terms of use of the website.
- Log-in - This is the page that provides data fields for the user to securely log in and the user interface for creating a new account.
- Administrator Page - The Administrator Page displays a full version of the Gallery, a free version of the Gallery, and a watermarked version of the Gallery so that the

administrator can easily tell what the different versions of the Gallery look like without having to log out and log back in as different users. These Gallery display sections could be extended to allow an admin to choose which textcards™ are free. This page provides the following functions to admins:

- Card Uploading - This function allows an admin to upload textcard™ images by using a “Browse” button to select an image from a location on the admin’s local machine. Textcard™s can be selected as free or not (in which case they are unavailable for sending by non-subscribed users). Textcards™ can be paired with multiple existing tags.
- Adding tags - This function allows an admin to enter the name of a new tag in a text box and select a parent tag from a drop-down box of existing tags. If no parent tag is selected, the tag is a top-level tag.

The website currently:

- Provides navigation bars on all pages of the website.
- Automatically sends emails to customers to:
 - confirm account creation.
 - confirm delivery of textcards™.
 - remind of account renewal.
- Allows new tags to be added by an admin
- Allows new textcards™ to be uploaded by an admin along with associated tags.
- Interfaces with the database.
- Watermarks images in the view-only Gallery
- Displays the textcard™ Gallery
 - Free version and full version
- Allows user logins
- Adds textcards™ to be sent
 - Immediately or scheduled
- Displays legal and marketing text
- Has some formatting

Database

The database:

- Stores user account information.
- Stores textcard™ information.
- Has a time-delay/scheduling mechanism to facilitate delayed textcard™ delivery
- Interfaces with the MMS Component

MMS Component

The MMS Component:

- Sends the textcards™ to recipients’ phones.

- Confirms delivery of textcards™.
- Interfaces with the database.
- Caches downloaded textcard™ images.
- Is completely configurable

Non-Functional

- The website is designed to be viewable on desktop and laptop computers (the website is not specifically meant to be accessed from a mobile phone).
- BlueHost is the host.
- The client is rather cost conscious, so minimizing cost was particularly important (the cost of tools, product licenses, and MMS method).

Scope

Optimally, we wanted to implement full website functionality, full database functionality, and full MMS component functionality. However, we were given a limited time frame and were not able to implement all desired functions of the project to the full extent of the client's wishes.

We have worked diligently towards producing a product that is of the most use to the client. We have made all possible efforts to make the project expandable, as originally planned.

In Scope

The MMS component was our primary focus. Without this, the other components serve no purpose. It was imperative that we determined the best MMS option for the client and produced an implementation that sends a textcard™. This required at least a bare-bones website and database component to allow users to select a textcard™ and enter a destination phone number. Time-delayed delivery was another important functional aspect of an acceptable solution.

Overall, the website allows users to log in and send a free textcard™ and allows admins to log in and alter the database. Specifically, the following functions are implemented:

- textcard™ Gallery display
- Admin option for adding tags to database
- Admin textcard™ uploads
- Admin option for tagging
- Admin option for re-tagging textcards™
- Send free textcard™ page
- Display of marketing/legal text
- User login
- Admin login

Out of Scope

The visual and artistic aspect of the website falls outside the scope of the project. Our goal was first and foremost to provide the functional aspects of the system in a form that is conducive to future aesthetic improvement. However, some Cascading Style Sheets formatting was done in order to demonstrate the potential visual appeal of the website.

Use Cases

1) Non-Subscriber Sending a textcard™

Goal: Sally, a mother of two who has never been to the website, wants to send her son a good luck textcard™ for his upcoming soccer game.

Actors: Sally

Preconditions: None

Trigger: Sally hears about the site from her friend.

Events:

1. Sally, after hearing about the website from one of her soccer mom friends, Googles for the website on her home PC. It's the first result (no doubt the product of some good search engine optimization).
2. She arrives on the homepage and is immediately struck by one of the free textcards™ that are dominantly shown on the page.
3. Sally selects the greeting to get a closer look.
4. Sally decides that it is the perfect textcard™ to encourage her son to win his game and decides to enter his phone number and send it. The game happens to be in one hour – Sally is a procrastinator. She makes note that if she were to subscribe, she'd gain the ability to schedule textcards™ to be delivered at a later date (and perhaps help with her procrastination problem).
5. Sally notices that she has a new email that describes the greeting she just sent.

Exceptions:

Post Conditions:

- A textcard™ has arrived on Sally's son's mobile phone.
 - Sally has an email in her inbox stating that the textcard™ was sent.
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2) User Registers an Account to Send a Gallery textcard™

Goal: Bob, a father of three, has used the site before to send textcards™. He wants to register for a subscription because he wants to send cards that he's noticed in the Gallery to his kids.

Actors: Bob

Preconditions: None

Trigger: Bob remembers some great textcards™ from the Gallery.

Events:

1. Bob navigates to the website.
2. Bob easily finds the Register page and views it.

3. Bob fills out the Register page with his information and submits.
4. He navigates to the gallery and finds a textcard™ that would be perfect for his daughter's birthday (which happens to be next week, he's on top of things).
5. He enters his daughter's phone number and indicates that he wants the textcard™ delivered one week from today in the afternoon (his daughter likes to sleep in so he doesn't want to wake her).

Exceptions:

1. Bob incorrectly fills out some information such as:
 - a. Leaving an important field blank
 - b. Incorrectly filling out his credit card or PayPal information
 - c. Not matching the passwords or email given in the password/email confirmation fields
2. The website politely asks Bob to correct the incorrect fields and easily shows him which fields those are. Once Bob corrects the fields, he submits the information again.
3. Bob accidentally entered the year incorrectly, indicated a date in the past. He cannot proceed until he enters a valid delivery date. Time travel is not a feature of the website.

Post Conditions:

- Bob has an account from which he can send unlimited (or a reasonable amount) of textcards™ from the Gallery. In other words, Bob can navigate to the Gallery and send textcards™, either immediately or set up the textcards™ to send at future times.
- Bob has a new email in his inbox thanking him for signing up, explaining the automatic renewal process, and detailing the charge to his credit card.
- The textcard™ appears on his daughter's mobile phone on the specified date
- Bob has another email indicating that the textcard™ has been sent to his daughter's number (arrives on his daughter's birthday when the card is actually sent).

3) *Uploading a New textcard™*

Goal: A member of the company has received some new textcard™ designs and wants to make them available to users.

Actors: Artists, Site Manager

Precondition: The Artists have created a new textcard™ image with appropriate tags that describe it.

Triggers: New textcard™ creation

Events:

1. Ginny, an artist, drops by Jill's desk with a new textcard™ design and tag list.
2. Jill loves the new textcard™ and decides to make it a part of the site's Gallery.
3. Jill navigates to the site and logs in using her special admin login.
4. A special area of the site becomes visible that allows site-management activities to be performed.
5. Jill navigates to that section of the site and chooses to upload a new textcard™.
6. She browses her computer's hard drive for the image and selects it.

7. She enters in each of the descriptive tags by selecting them from a list of existing tags (Jill doesn't like to type them in each time).
8. Seeing that everything looks good, Jill completes the process.

Exceptions:

- If there is a new tag that has not been previously used, Jill simply enters in the new tag.

Post Conditions:

- The newtextcard™ is present in the Gallery and can be found under each of the categories that were specified.
 - Any new tags that were entered appear in the list of categories.
-

4) *Changing the Free Greetings (Free-to-Send textcards™)*

Goal: Betty is a company employee. The Free Greetings have been up for a week, so she needs to change them.

Actors: Betty

Precondition: There are enough textcards™ in the Gallery (or some kind of Free Greetings queue) to fill the Free Greetings section.

Triggers: Time has passed and the Free Greetings are now old.

Events:

1. Betty realizes it's time to change up the Free Greetings again.
2. She navigates to the website and log in using her administrator login.
3. An area of the website that is only shown to employees appears allowing Betty to edit which textcards™ are featured.
4. Betty selects which textcards™ she wants to get rid of.
5. She then browses the Gallery and finds textcards™ that would be appropriate replacements.

Exceptions: None

Post Conditions:

- The Free Greetings section has been changed. There are new textcards™ in Free Greetings that were previously not in Free Greetings.
-

5) *Fixing an Incorrect Tag*

Goal: Jordan – an employee – has noticed that a textcard™ that is obviously meant for daughters is incorrectly tagged as being for sons. She wants to correct this as soon as possible.

Actors: Jordan

Precondition: A textcard™ is incorrectly tagged

Triggers: The vigilance of employees

Events:

1. Jordan logs in to the site using her special company login.

2. She quickly finds the textcard™ in the gallery and indicates that she wants to edit the associated tags.
3. She chooses “daughters” instead of “sons” and saves her choice.

Exceptions: None

Post Conditions:

- The offending textcard™ now has correct tags.
-

6) *Changing a Send Date for a textcard™*

Goal: Zoe, a subscribed customer, has scheduled a textcard™ to be sent for her daughter’s school trip. However, the date of the trip has changed, so Zoe needs to change the date the scheduled textcard™ is sent.

Actors: Zoe

Precondition: Zoe has scheduled a textcard™ to be sent in the future.

Triggers: A changing date or time for an event

Events:

1. Zoe navigates to the site and logs in.
2. Zoe navigates to the Pending Cards that she has set up to be sent. She is presented with a list of all the textcards™ that are awaiting delivery (she has a lot).
3. She changes the delivery date for the textcard™ destined for her daughter.

Exceptions:

- The date she accidentally changes the textcard™ to is in the past, so the website disallows the new date and asks for a new one.

Post Conditions:

- The textcard™ Zoe had previously scheduled for an incorrect date is now scheduled for the correct date and time, and eventually gets sent on that correct date.
 - Zoe receives an email indicating that the delivery time has changed.
 - Zoe also eventually receives an email on the date the textcard™ is sent, describing the card she sent.
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7) *Viewing all the Pending Cards to be Sent*

Goal: Larry is a subscribed customer. He scheduled a lot of textcards™ one day, but in the middle of the night one night, Larry suddenly realized it is his son’s birthday soon. Unsure of whether or not he scheduled a textcard™ for his son’s birthday, Larry wants to check.

Actors: Larry

Precondition: Larry is a subscribed user with Pending Cards.

Triggers: Larry’s uncertainty

Events:

1. Larry navigates to the site and logs in.

2. Larry easily finds the Pending Cards section of the site and navigates to it.
3. Larry sees that he already scheduled a textcard™ with a fun-looking heart-dude character for his son's birthday and breathes a sigh of relief.

Exceptions:

- Larry apparently didn't schedule a textcard™ to be sent on his son's birthday (he's got five kids, so it's understandable). He picks out a textcard™, and schedules it to be sent on his son's birthday.

Post Conditions:

- Larry is all set. He will receive an email when the textcard™ is sent.
 - His son, Larry Jr., will receive the textcard™ on his phone.
-

8) *Searching for an Appropriate textcard™*

Goal: Susan, a grandmother, feels like sending her grandson a textcard™ but has no idea what to send.

Actors: Susan

Precondition: Susan is a subscriber

Triggers: Susan wants to send her grandson a textcard™.

Events:

1. Susan navigates to the site.
2. Susan browses through the Free Greetings, but can't seem to find the perfect textcard™.
3. Susan decides to search the Gallery. She searches for "boys" and finds a great textcard™, which she then sends.
 - a. Alternatively, Susan searches by using a list of tags.

Exceptions:

- Susan doesn't find the right textcard™ the first time, so she searches again using different tags.
- Susan is not registered, so she registers before sending the textcard™ she finds.

Post Conditions:

- Susan has found a good textcard™ and sent it to her grandson. The textcard™ arrives on her grandson's phone.
 - Susan gets an email telling her the textcard™ was sent.
-

9) *Account Renewal*

Goal: Susan's account is about to expire and the company would like her to renew her subscription.

Actors: Susan

Preconditions: Susan has a paid account that is nearing its expiration date.

Triggers: The passage of time

Events:

1. Susan created an account and subscribed for one month.
2. Three weeks pass.
3. The system sends Susan an email indicating that her account is about to expire and without intervention from her, will automatically renew and charge her credit card.
4. Susan reads the email and wants to continue using the service, no action is required.

Exceptions:

- Susan doesn't want to continue using the service and clicks on a link in the email that opts-out of the automatic renewal process. Susan could have also performed this action on the website. An email is sent to Susan indicating that her account won't be renewed.

Post Conditions:

- Susan's credit card is charged for another month of service.
- Her account has an additional month of active time.
- Susan receives an email detailing the charge.

Current System

This project is independent of all existing systems, although the client provided a set of visual site mock-ups. The visual appeal of the site was outside the scope of this project although the mock-ups were used to guide our design.

Risks

MMS Method

This was the single most important choice to be made regarding the system. There are several different methods for generating and delivering MMS Messages and due to time constraints, this choice could not be easily modified. To help mitigate this risk, a separate document was written describing each choice in detail and listing their pros and cons (MMS Options). The solution that was chosen was the tethered phone option because it was both relatively cheap and reliable. The cost to the client was the fixed cost of the modem (\$150) and a \$15 per month phone bill.

Technology

Due to cost constraints, we selected to use open source or free tools for this project as much as possible. Unfortunately, project members were not familiar with the selected tools and needed to become proficient with them. The website component uses PHP which was unknown to all team members. The database component uses MySQL which was known to some team members. The host server employs a Linux operating system which was partially known to every team member.

Privacy

For the current version of the website, no sensitive customer data such as credit card or PayPal information is being stored and therefore cannot be compromised. The only other semi-private information stored in the system are users' contacts. These are stored in a password-secured database that cannot be accessed remotely. The website will only display contacts for logged-in users and only that user's own contacts.

Like any service, it has the potential to be abused. There are mechanisms in place to stop all delivery of picture messages to blocked numbers. However this feature has not been activated for this version.

Security

We have opted to only store a salted-hash of the users' password. This minimizes the risk to users even if the entire database is stolen. Although security breaches are of low risk, the security system would be enhanced by including captchas to prevent automated programs from using the website, rate limits (for the same reason), and automatic watermarks to protect the intellectual property of the client.

System Design

This is a multi-part system (see Figure 1). At a high-level, end users and staff interact with the website component which saves the results of their actions to the database component. Primarily, the database is responsible for storing information about end users and textcards™. The third component resides remotely on the client's desktop and monitors the database to initiate the delivery of any textcards™ that are ready to be sent. There are several other sub-components as described below.

Website Component

This component provides the sole means of interacting with the system for both end users and ModsDesigns staff. The website, written in PHP and hosted by BlueHost, currently provides a GUI for:

- End Users
 - Browsing the textcard™ Gallery
 - Scheduling a textcard™ for delivery
 - Managing contacts (the recipients of textcards™)
 - Obtaining information about the service
- ModsDesigns Staff
 - Uploading and modifying textcards™
 - Selecting free textcards™
 - Tagging textcards™

Additionally, the website still needs to provide a GUI/functionality for:

- End Users
 - Creating accounts (UI implemented)
 - Optionally subscribing to the full service (UI implemented)
 - Contacting website support (UI implemented)
- ModsDesign Staff
 - Obtaining usage and accounting information

The website's UML diagram mirrors the database schema diagram (Figure 2). Each table is designed to have a corresponding class for the purpose of making the website more object-oriented and therefore more intuitive to program. However, due to time constraints, we were unable to fully mirror the website's classes to the database's tables. The website classes that have corresponding database tables are charity, contact, subscription plan, tag, timezone, user, and user subscription plan. No other database table is utilized by the website yet. Foreign key relationships are represented as lazy-loaded references or lists of references depending on the cardinality of the relationship.

The website additionally has a class to handle database connections and queries as well as "control" objects to insert reoccurring code. These control object include textcard™ Gallery display, contact list display, and drop-down menus for charities, contacts, subscription plans, tags, and timezones.

Database Component

A single MySQL database acts as the primary repository of data used throughout the system (see Figure 2). The only information not contained within the database are the textcard™ images themselves, which reside on the server's file system and are referenced by the database. The database is hosted on the same BlueHost server as the website component. The database has two sub-components that reside within the MySQL database but provide auxiliary functions.

The first is the email subsystem which is responsible for delivering account information and textcard™ status information to the end users. An email queue acts as a staging area for all outgoing email. Unlike SQL Server, MySQL does not provide a mechanism for sending email directly from the database. We have considered the following options:

- Create a BASH script that is run on regular intervals by the Unix operating system hosting the web application that sends all queued emails
- Take advantage of our application component that, in addition to polling for textcards™, can also poll for queued emails to be sent
- Research MySQL components that can automate this task

The final design of our emailing system is a two-part system. The first part is the sending engine which does the sending. This is written in PHP and makes use of the PHP mail function. It makes use of email templates that are stored within the database and allows each email to contain relevant information when it comes to each client (username, expiration date, etc). This is accomplished by utilizing a templating process. The second part of the system polls the database for account expiration. This allows for a hands-off approach when dealing with account expiration. CronJobs were then implemented to run each script at a regularly scheduled interval.

The second subsystem is the event scheduler which determines when a textcard™ is ready to send. This component was originally going to be implemented with MySQL Events (similar to SQL Server's Jobs) but BlueHost does not allow them. Instead this functionality was combined into the Desktop Application.

MMS Desktop Application

After analyzing four different methods for delivering picture messages to mobile phones (see MMS Options Report), only one method was in the client's price range and reliable enough to be acceptable. The system is as follows: a modem is tethered (connected via USB port) to the client's Windows computer and acts as the originator of all outgoing picture messages. An application located on the machine continuously polls the database checking for textcards™ that are ready to be delivered.

The application uses a third-party API (ActiveXperts SMS and MMS Toolkit) to format the picture message and transfers it across the tether to the modem where it is then sent to its

destination. After receiving confirmation that a message was delivered, the database is updated to reflect the new status.

The application provides only a basic user interface, with all user interaction occurring from the system tray icon (the group of icons next to the clock on a standard Windows setup). The only configurable aspects of the application are how often it should poll the remote database for new textcards™ and connectivity information. The purpose of these configuration options is so that the client can manually manage database traffic on a per-system basis and update connection information in case the environment is changed.

Currently, there is a single modem tethered with a single desktop application. However, the system is designed in such a way that additional modem/application pairs can be added with no additional work. The efficiency of the multi-modem system could be improved with additional design work which is outside the scope of this project.

Implementation

Database

The database was implemented using MySQL. MySQL was chosen because it is free, supported by BlueHost, and generally considered a good database system. Stored procedures were created for all website interactions with the database. Stored procedures were chosen due to their security benefits, centralized control and maintenance of database queries, and reliability.

Website

The website was coded using PHP. PHP was chosen because it is free, supported by BlueHost, and relatively easy to learn. To interact with the database, PHP MySQLi functions were used. Since the standard PHP MySQL functions have limited ability to call stored procedures, the MySQLi functions made database connections more robust. This was especially important because stored procedures are used as the sole means of database interaction.

MMS Component

The tethered modem option was chosen because it is cost-effective, scalable, and reliable. In principle, cell phones could be substituted for modems, but a tethered modem was chosen over a tethered phone because the data transfer rate is typically higher with a modem than with a cell phone.

Project Progression

At the beginning of the project, our team decided on using third-party software to handle account management and payment processing. The criteria and features used to select the third-party content management system (CMS) included:

1. Secure user log-in
2. Secure credit card or PayPal authorization
3. Email verification
4. Captchas handling
5. Price
6. Size
7. Learning curve

Given these requirements, Joomla! was chosen as the best option. Joomla! is an extensible, open-source CMS. Joomla! is SSL (Secure Socket Layer) compatible, providing security for sensitive information transfer. Based on initial research, Joomla! seemed like it could easily interface with the website and database to provide user and payment authentication, captchas, subscription management, image gallery displays, file uploads, web statistics, and website administration. However, the the learning curve of Joomla! turned out to be too steep, and at the end of week four it was decided to discontinue work with Joomla! and instead script the website in PHP by hand.

Conclusions and Future Directions

The efforts trying to get Joomla! to work taught our team to research third-party code more carefully and ensure that adequate documentation is available. Although Joomla! may be great for some applications, for our project it was too central to easily allow customization and it was too big to learn with the given time constraints.

Working in PHP proved to make progress quicker. Our team would recommend future students learning PHP to practice with actual code as much as possible during the learning/research phase of the project, since simply reading tutorials is of far less use. To help debug PHP, we recommend setting up PHP's configuration file on the development environment to display as many errors, warnings, and notices as possible.

Due partially to the setback we encountered of reverting to PHP coding after abandoning Joomla! and partially to the large size of the project, we were unable to implement as much of the website as we had hoped. The following pages still need to be implemented:

- **Subscribe Page** - This page will be used to register and provide relevant data, including name, email, charity of choice, and PayPal or credit card information. The Subscribe page will have a captcha spam filter. Currently, this page is partially implemented.

- Contact-Us Page - This page will display text encouraging users to send a comment or question and functioning data fields to do so. Currently, this page displays text and non-functioning data fields.
- My Account - This page will show the logged-in user's subscription information. This page currently displays subscription plan information but needs to display more information such as email address.
- My Cart - This page will show the textcards™ which are scheduled to be sent for a logged-in user. This page is currently blank.
- Report Abuse Page - This page will have data fields allowing a phone number to be blocked. This page currently does not exist.

Additional features that the website will eventually implement:

- SEO (Search Engine Optimized) tactics
- Allow additional text to be added by the user before the textcard™ is sent
- Captcha spam filters
- Allow the Free Greetings to be changed by an admin
- Account creation
- Payment processing
- Accounting information displays for admins
- Scheduled textcard™ displays for users
- Number-specific abuse blocking
- High-quality formatting (website visual appeal)

Images

Figure 1. System Overview

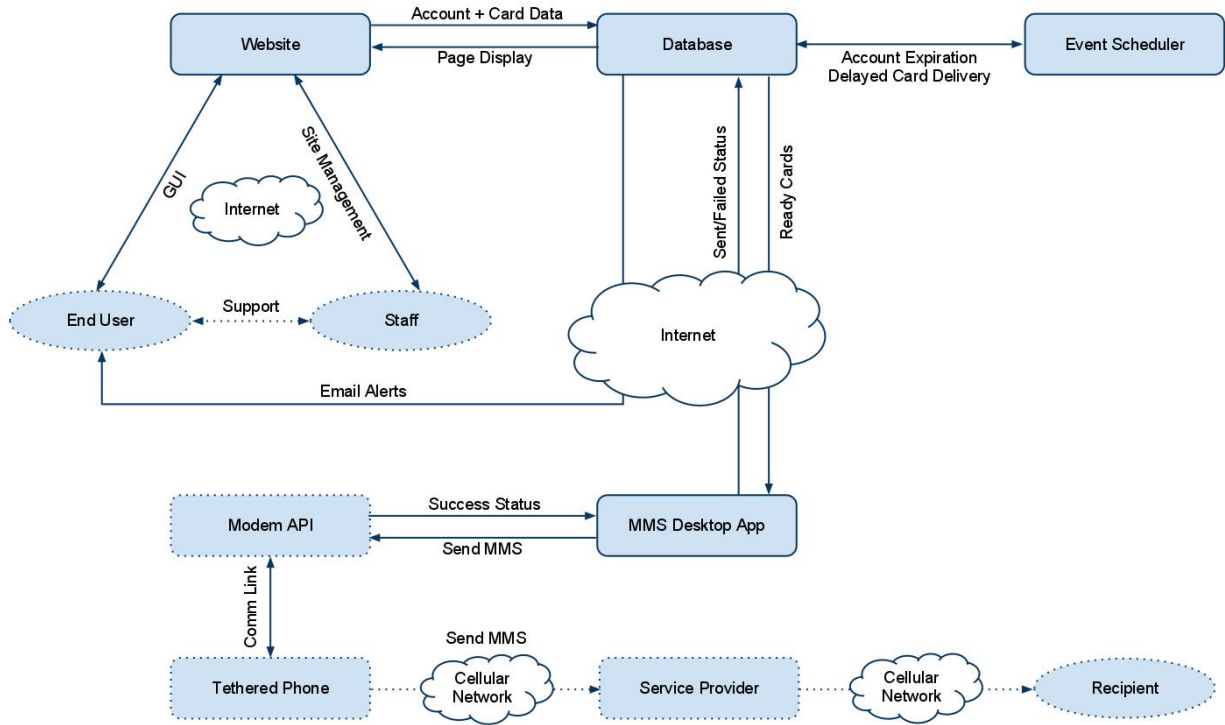
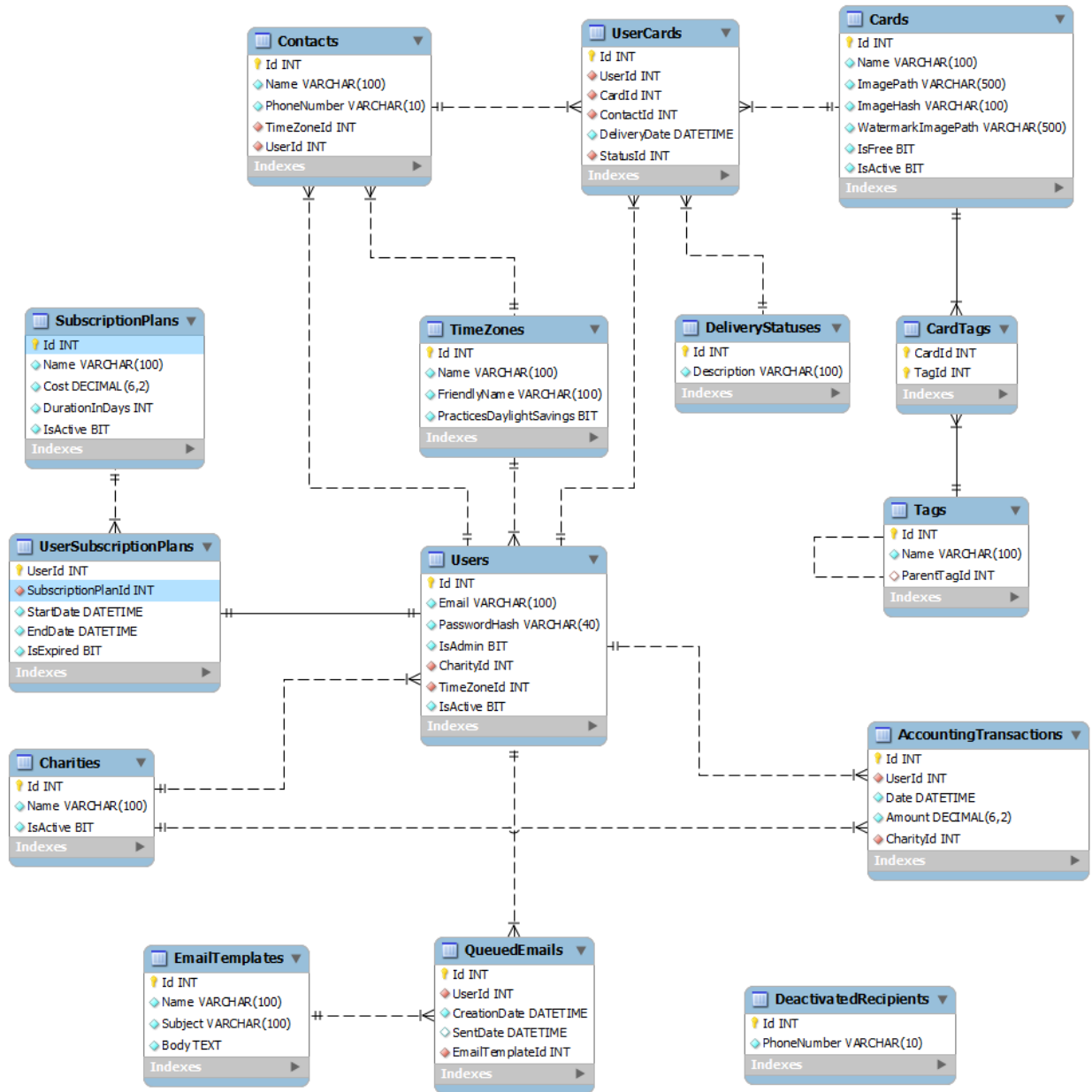


Figure 2. Database Diagram



Glossary

Admin: An administrator of the website. This is a person (usually an employee of ModsDesigns) with access to the Administrator Page.

Captcha: A method for preventing computer controlled “bots” from creating accounts or sending cards. Displays text that is difficult for bots to decipher, confirming that the user is indeed a human being.

CronJobs: are time-based jobs in Unix-like computer operating systems.

Free Greetings: A location on the website that organizes and displays a small number of textcards™ which may be sent for free.

Gallery: A location on the website that organizes and displays all available textcards™.

GUI: A **G**raphical **U**ser **I**nterface.

MMS: **M**ultimedia **M**essaging **S**ervice - a worldwide protocol for sending messages that contain picture, video, and/or audio components.

Modem: A device that is equivalent to a mobile phone but without an interface.

Pending Cards: textcards™ which have been scheduled by a subscribed customer to be sent at a future date. This will be a section in the My Cart page.

Tag: A descriptive word that describes a subset of Cards.

textcard™: A digital picture (including text) that is delivered to mobile phones.

References

MMS Information:

<http://www.activexperts.com/>

List of Carrier Configurations:

<http://www.activexperts.com/xmstoolkit/mmsclist/>