

Secure Chat SMS Plugin

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Business Requirements

BR1 Provide a communication channel between banks and their clients such that both parties are confident that their communication cannot be interfered with or intercepted.

Accutech wants a secure communication line between banks and their clients because this communication contains sensitive financial information. Clients need to know that their credentials and personal information will truly be sent to their bank representative, while banks need confidence that their messages are truly sent to the client, not an impersonator. Accutech hopes to create a communication channel that protects against impersonation attacks, giving banks and clients confidence in the confidentiality and integrity of the messages sent.

BR2 Improve relationships with banks' middle aged clients by adopting a modern communication strategy.

As generations of retirement aged Americans pass away, many will leave an inheritance to their middle-aged family members. Accutech hopes to create lasting relationships with these middle-aged family members, who are sometimes more comfortable with text and instant messaging than phone calls. Accutech hopes that adapting to modern communication channels will improve its relationships with middle-aged Americans.

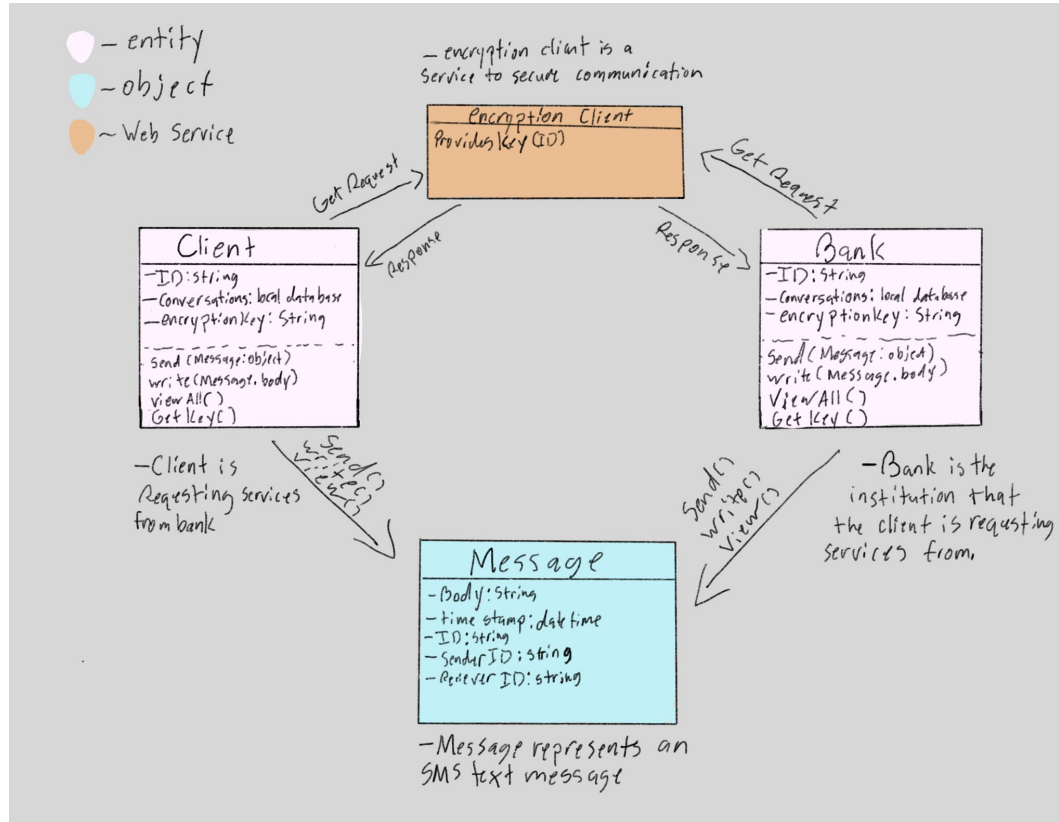
Functional Requirements

- FR1 - The banks and their clients will compose messages, which contain the text message body, the sender's identity and a timestamp for the message.
 - Priority: High
 - Relates to BR2
- FR2 - The banks and their clients will send the messages they compose.
 - Priority: High
 - Relates to BR2
- FR3 - The banks and their clients will view previous and incoming messages, which contain the text message body, the sender's identity and the message's timestamp.
 - Priority: High
 - Relates to BR2
- FR4 - The web application will send an API key and encrypted passcode to the encryption service to authenticate the client's and bank representative's accounts.
 - Priority: Medium
 - Relates to BR1
- FR5 - The server will store all text messages and their metadata in a relational database.
 - Priority: Medium
 - Relates to BR1

Nonfunctional Requirements

- NR1 - The messages will be sent via SMS
 - Priority: High
 - Relates to BR2
- NR2 - The system will adhere to REST API standards
 - Priority: High
 - Relates to BR2
- NR3 - The web application UI will be responsive to the size of the window, supporting full screen and half screen on desktop computers, and full screen on smart phones and tablets.
 - Priority: Low
 - Relates to BR2

Domain Model



Actors

- Bank representative
 - Store sensitive financial information
 - Need to maintain high credibility
 - Most of their communication must be confidential
- Bank clients
 - Invest/Save money through Banks
 - Trust banks with sensitive information
 - Need confidential communication with banks

Use Cases

UC1 - Create a written message

Middle-aged Americans prefer to have the option to communicate with businesses through text messages rather than being restricted to more traditional options such as in person meetings, letters and phone calls. In order to create a text message, bank representatives and bank clients need to have a system that allows them to create messages.

- Actors: Bank representatives and bank clients
- Related Business Req: BR2

UC2 - Send a messages to and from banks and their clients

Middle-aged Americans prefer to have the option to communicate with businesses through text messages rather than being restricted to more traditional options such as in person meetings, letters and phone calls. Bank representatives and bank clients need to be able to send the messages they create to each other.

- Actors: Bank representatives and bank clients
- Related Business Req: BR2

UC3 - Read messages sent from the bank or client

Middle-aged Americans prefer to have the option to communicate with businesses through text messages rather than being restricted to more traditional options such as in person meetings, letters and phone calls. Bank representatives and their clients need to have a system that allows them to read past and incoming messages.

- Actors: Bank representatives and bank clients
- Related Business Req: BR2

TechStack

- [.NET 5](#) (soon to be upgraded to [.NET 6](#) in November)
- [Visual Studio 2019 IDE](#) (upgrading to Visual Studio 2022 in November)
- [ASP.NET MVC](#) and [ASP.NET](#) Razor Pages for web development
- [ASP.NET MVC API](#) for back-end API service
- [Vue.js](#) for single page applications (SPA) and overall JavaScript framework
- Most hosting of our applications are done with Linux-based [Docker](#) containers

This tech stack was given to us by our client, Accutech.

First Iteration Features

FR1 - The banks and their clients will compose messages, which contain the text message body, the sender's identity and a timestamp for the message.

FR2 - The banks and their clients will send the messages they compose.

FR3 - The banks and their clients will view previous and incoming messages, which contain the text message body, the sender's identity and the message's timestamp.

FR5 - The server will store all text messages and their metadata in a relational database.

NR1 - The messages will be sent via SMS

NR2 - The system will adhere to REST API standards

Mentor Feedback

- Need to decide between SSR and SPA architecture
- Remove functionality from nonfunctional requirements

Client Feedback

- Use Vue.js and Bootstrap for the web application
- Use postgres relational database to store all messages and corresponding metadata
- Remove end to end encryption and digital signature requirements