

**CSC 490**

**BEIRUT MUNICIPALITY**



**By SpeedDev**

A REPORT submitted to DR. IBRAHIM ALBITAR in partial fulfillment of the requirements for the course “CSC490: Software Engineering” in Computer Science

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3/3/2024

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**Preface**

This Software Requirements Specification (SRS) document aims to provide all stakeholders involved in the project with a comprehensive understanding of the Municipality Service Management System (MSMS). It outlines the essential requirements and overall structure of the system, with the objective of establishing an agreement between the client and the contractor. The document adheres to IEEE standards for defining software requirements and specifications. By detailing implementation specifics, limitations, and restrictions, it enables system designers to grasp the project's requirements fully. It is strongly recommended that all stakeholders thoroughly review this document as it forms the foundational basis for the project's development. Any future changes to these requirements will be clearly communicated in subsequent versions.

1. **Introduction**

The Municipality App is a groundbreaking digital platform designed to transform the way citizens interact with their local municipal bodies. This innovative application aims to digitize various municipal services, making them easily accessible to citizens at their fingertips. It serves as a comprehensive platform where citizens can report issues in their locality, request services from the municipality, and stay updated with local news and events. The app is envisioned as a tool to foster better engagement between the municipality and its citizens, enhancing transparency and efficiency in public services.

* **Objectives:**

The primary objective of the Municipality App is to build a digital bridge between the municipality and its citizens. By providing a platform for easy access to municipal services, the app aims to improve the efficiency of municipal operations and enhance citizen satisfaction. The app also aims to provide a platform for citizens to voice their concerns and report issues, fostering a sense of community involvement and shared responsibility. Furthermore, the app seeks to keep citizens informed about local news and events, promoting community engagement and participation.

In terms of usability, the Municipality App aims to provide a user-friendly interface that is easy to navigate, even for those with little to no technical experience. The app also aims to ensure the security and privacy of user data, adhering to the highest standards of data protection.

* **Constraints**

Despite the clear objectives, the development and implementation of the Municipality App are not without challenges. One of the primary constraints is ensuring that the platform is accessible and usable for everyone, regardless of their technical proficiency. This requires careful design and testing to ensure that the app is intuitive and easy to use.

Ensuring fairness and equality is a major constraint. The app needs to be designed in a way that serves all citizens equally, regardless of their location, age, or socio-economic status. This requires careful planning and consideration to ensure that the app does not inadvertently exclude or disadvantage any group of citizens.

Internet Access: Not all citizens may have consistent access to the internet. This digital divide could prevent a portion of the population from using the app effectively. Strategies need to be developed to ensure that these citizens can also benefit from the municipal services. This could include offline functionality for certain features or alternative ways to access the services provided by the app.

Data Privacy and Security: Protecting user data is paramount. The app must adhere to all relevant data protection laws and regulations. Robust security measures need to be in place to prevent data breaches.

Scalability: As the user base grows, the app should be able to handle the increased load without performance issues.

In conclusion, the Municipality App represents a significant step forward in leveraging digital technology to improve municipal services and citizen engagement. Despite the challenges and constraints, the potential benefits of the app for both the municipality and its citizens make it a worthwhile endeavor.

1. **Glossary**

- Municipality Service Management System (MSMS): A digital platform designed to streamline municipal services and facilitate interactions between citizens and the municipality.

- Emergency Reporting and Response System: Feature enabling residents to report emergencies, such as accidents, fires, and infrastructure damage, on the MSMS website, with real-time notifications sent to relevant municipal authorities for swift response.

- User Registration and Authentication: Process allowing users to register on the MSMS website using their details, including name, email, password, address, date of birth, phone number, and city, and authenticate their identity for access to website features.

- Requirements Dependency Graph: Visual representation illustrating the interrelation of different requirements within the MSMS project, helping in understanding the impact of changes and planning the development process.

- Backward Compatibility: Ensuring that changes to the MSMS system do not disrupt the experience for existing users, maintaining support for older versions of the app, or designing new features to work alongside existing ones.

1. **Background**

The MSMS project arises from the growing need for modernization and efficiency enhancement within municipal services offered to citizens. Across various municipalities, traditional methods of service delivery and communication have often proved to be outdated, cumbersome, and inefficient. Recognizing these challenges, the initiative to develop a comprehensive digital platform aimed at streamlining municipal operations and improving citizen engagement was conceived.

The idea for the MSMS project came about after a lot of hard work looking at how municipal services were currently being delivered in the area. We talked to people from the city government, residents, and people who study how cities work, and they all agreed that there was a real need for a central and easy-to-use system for getting information and using municipal services.

We also saw how other areas were using technology to make it easier for people to interact with their city governments, and we thought this could be a great way to improve things here too. Seeing how successful these other projects were made us feel confident that the MSMS project could have a big positive impact.

Key drivers behind the initiation of the MSMS project include:

* Citizen-Centric Approach: The project aims to place citizens at the forefront by providing them with convenient access to municipal services, information, and resources. By prioritizing citizen needs and preferences, the MSMS project seeks to enhance overall satisfaction and engagement with municipal governance.
* Efficiency and Transparency: Traditional methods of municipal service delivery often involve bureaucratic processes, paperwork, and long wait times. The MSMS project endeavors to streamline these processes, reducing administrative burden and enhancing operational efficiency. By digitizing service requests, applications, and payments, the project aims to minimize delays and increase transparency in service delivery.
* Data-Driven Governance: Leveraging data analytics and insights is essential for informed decision-making and strategic planning within municipalities. The MSMS project aims to establish robust data collection mechanisms to capture valuable information on service usage, citizen preferences, and community trends. By harnessing this data, municipalities can optimize resource allocation, identify areas for improvement, and tailor services to meet evolving needs.
* Digital Inclusion: In an increasingly digital world, ensuring equitable access to digital services is crucial. The MSMS project is committed to promoting digital inclusion by designing accessible and user-friendly interfaces that cater to users of all ages, backgrounds, and technical abilities. Efforts will be made to bridge the digital divide and ensure that no segment of the population is left behind.

1. **User Requirements**

**Functional:**

1. **Citizen Portal for Government Services:**

The website shall feature a citizen portal providing access to essential government services such as vehicle registration, property tax payment, and birth certificate issuance.

1. **Online Permit Applications:**

Residents and businesses shall be able to submit permit applications online for activities such as construction, renovation, event organization, and street vending.

1. **Community Events Calendar:**

A centralized calendar shall be available on the website, listing upcoming community events, festivals, public meetings, and municipal initiatives to encourage civic engagement and participation.

1. **Tourism and Heritage Information:**

Visitors and residents shall have access to comprehensive information about Lebanon's cultural heritage sites, tourist attractions, historical landmarks, and guided tours, promoting tourism and cultural appreciation.

1. **Municipal News and Announcements:**

Regular updates, news articles, and announcements from municipal departments shall be published on the website to keep residents informed about local developments, policies, and initiatives.

1. **Online Payment Gateway:**

An integrated online payment gateway shall be available for residents to securely pay municipal bills, fines, and fees, with support for multiple payment methods including credit/debit cards and mobile wallets.

1. **Feedback Mechanism:**

Users shall be able to leave reviews and ratings for the services they have utilized, providing valuable feedback to improve service quality.

1. **Online Service Provision:**

Residents can book appointments and request municipal services online. They will need to provide their name, phone number, and email for processing. Unpaid reservations are automatically cancelled to prevent holding appointments unnecessarily.

1. **Login:**

Residents can log in using their email and password to access the platform. They will see a confirmation message upon successful login and an error message with guidance if login fails. Their account may be disabled after multiple failed attempts for security reasons.

1. **Registration:**

Residents can create an account using their name, email, password, address, date of birth, and optional phone number. They will receive a verification email with a link or code to activate their account and access the platform's functionalities.

1. **Notification:**

Residents will receive automated email notifications for various purposes, including:

Reservation confirmations with details like date, time, and service type.

Informational updates about new services, upcoming events, or service disruptions.

Verification upon successful registration, requiring them to confirm their email address and activate their account.

1. **System Requirements**

**Functional Requirements:**

1. **Online Payment Gateway:**

* Functionality:

The online payment gateway will require the following user and system inputs to facilitate transactions:

-User identification information: This includes login credentials (username and password) or account number to verify the user and access their account information.

-Payment details: This encompasses the specific payment method chosen by the user, such as credit/debit card information (card number, expiration date, CVV) or mobile wallet credentials (depending on the chosen method). Additionally, the payment amount being submitted must be provided.

-Billing information: The system requires details about the specific bill or fee being paid, including the type of bill (e.g., water, trash, permit), due date, and outstanding amount.

The online payment gateway will generate the following outputs for the user and internal systems:

-Payment confirmation and receipt: Upon successful payment completion, the user will receive a confirmation message and a digital receipt for their records.

-Updated account balance (if applicable): If the payment is for a recurring bill with an associated account balance within the MSMS system, the balance will be automatically updated to reflect the completed payment.

-Notification to relevant department: The system will notify the relevant municipal department of the completed payment, ensuring the information is received by the appropriate party for further processing.

* Additional Considerations:

Transaction fees: To ensure transparency, the system should clearly communicate any transaction fees associated with different payment methods. This information should be readily available to users before they initiate a payment.

Reporting: The system should generate comprehensive reports on transaction volume, the types of payment methods used, and the total revenue collected. These reports will be valuable for internal analysis and decision-making.

* Implementation:

Partnering with a third-party payment processor: This is the most common and often recommended approach. It leverages the expertise and existing infrastructure of established payment processing companies.

1. **Tourism and Heritage Information:**

* Functionality:

The system will serve as a comprehensive resource center for visitors and residents to access information on:

-Cultural heritage sites: Detailed descriptions, historical significance, location, photos, and accessibility details.

-Tourist attractions: Information on attractions like museums, national parks, and recreational facilities, including opening hours, ticket prices, and accessibility options.

Historical landmarks: Descriptions, significance, location, photos, and historical context.

-Guided tours: Listings of available guided tours, including schedules, prices, descriptions of tour itineraries, and contact information for tour operators.

-Search and filter: The system should offer intuitive search and filter options based on various criteria, such as: Location (city, region), Category (heritage site, attraction, landmark, tour).

1. **Municipal News and Announcements:**

* Functionality:

The system will allow authorized personnel from different municipal departments to easily publish:

-Regular updates on local developments and ongoing projects

-News articles on relevant topics and initiatives

-Official announcements regarding policies, service changes, and important information for residents

* Content Management:

The system should provide a user-friendly content management system (CMS) for authorized personnel to:

-Create and edit news articles and announcements

-Schedule publication dates and times

-Categorize content by topic or department

-Upload relevant images or multimedia content (optional)

1. **Online Service Provision:**

* Functionality:

Online reservation: The system shall allow residents to conveniently book appointments or schedule requests for various municipal services offered online.

User information collection: To process reservations, the system will collect the user's first name, last name, and contact information (phone number and email address). This information is essential for communication and confirmation purposes.

Automatic cancellation: For reservations that are not guaranteed (meaning they require payment to be confirmed), the system will automatically cancel them if payment details are not provided by a predefined deadline. This ensures efficient resource allocation and avoids holding appointments for users who do not intend to follow through.

* Inputs:

-User information (first name, last name, phone number, email)

-Selected service and desired date/time for the reservation

* Outputs:

-Confirmation message with reservation details (date, time, service type) sent to the user's email and/or phone number (depending on their preference)

-Notification to the relevant municipal department about the new reservation.

1. **Customer Interaction and Feedback:**

* Functionality:

Feedback and review collection: The system will provide residents with various avenues to submit feedback and reviews about their experiences with different municipal services. This could include:

Text box for open-ended feedback

Star rating system for overall satisfaction

Specific question prompts related to different service aspects.

FAQ management: The system will serve as a repository for frequently asked questions (FAQs) related to municipal services. Users can easily access this information to find answers to common inquiries.

* Inputs:

User feedback/review (text and/or ratings)

FAQs and their corresponding answers

* Outputs:

Display of submitted feedback/reviews (optional, depending on privacy settings)

Searchable database of FAQs and answers

* Additional Considerations:

Categorization and analysis: Implement mechanisms to categorize and analyze feedback data to identify trends and areas for improvement.

Response mechanism: Consider options for responding to user feedback publicly or privately, depending on the nature of the feedback.

* Implementation:

This functionality can be implemented using various tools and approaches, such as:

Online forms for feedback and review submission.

1. **Notification System:**

* Functionality:

Reservation confirmation emails: Upon successful reservation booking, the system will automatically send confirmation emails to users. These emails should clearly outline the following details:

-Reservation details (date, time, service type).

-Contact information for the relevant municipal department.

-Cancellation policy information (if applicable).

Informational emails: The system can also send automated emails to residents to:

-Inform them about new services offered online through the MSMS platform.

-Announce upcoming events or initiatives relevant to municipal services.

-Provide updates on service disruptions or modifications.

* Inputs:

User information (email address) upon registration or reservation creation

System triggers: Reservation confirmation, New service launch, Upcoming event, Service disruption/modification.

* Output:

Automated emails delivered to user inboxes.

* Additional Considerations:

Frequency: Establish a clear strategy for the frequency of informational emails to avoid overwhelming users with too much communication.

Unsubscribe option: Provide users with a clear and easy way to unsubscribe from receiving future emails if they no longer wish to receive them.

* Implementation:

This functionality can be implemented using various email marketing tools or platforms that integrate with the MSMS system. These tools allow for automated email sending, user management, and campaign creation, ensuring efficient and effective communication with residents.

1. **User Registration and Authentication:**

* Functionality:

User registration: The system will provide a user registration form allowing residents to create an account using their personal details:

-Name (first and last)

-Email address (used for login and verification)

-Password and confirmation

-Address (including street, city, and postal code)

-Date of birth

-Phone number (optional)

Email verification: Upon successful registration, the system will automatically send a verification email to the user's registered email address. This email will contain a unique verification link or code that the user needs to click or enter to confirm their account and activate their access to the MSMS platform's functionalities.

* Inputs:

User registration details (name, email, password, address, date of birth, phone number)

* Outputs:

-Confirmation message upon successful registration

-Verification email sent to the user's registered email address

* Security Considerations:

Implement secure password hashing and storage techniques to protect user credentials.

Enforce strong password policies, encouraging users to create complex and unique passwords.

Offer features like two-factor authentication for an additional layer of security.

Resend verification: Allow users to resend the verification email in case they do not receive it initially.

Account activation: Upon successful verification, the user's account becomes active, granting them access to the full functionalities of the MSMS platform.

1. **User Login:**

* Functionality:

Authentication: Users will be able to log in to the system using their registered email address and password. The system will verify the provided credentials against the stored user database.

Successful login: Upon successful login, the system will redirect the user to the designated home screen, providing access to various features and functionalities based on their user permissions.

Error handling: The system should handle failed login attempts gracefully, providing informative messages to the user, such as indicating incorrect credentials or disabled accounts.

* Inputs:

-User email address

-User password

* Outputs:

-Successful login: Redirection to the user's home screen

-Failed login: Error message with guidance for the user (e.g., "Invalid email or password" or "Account disabled")

Security Considerations:

Implement secure password hashing and storage techniques to protect user credentials.

Enforce strong password policies, encouraging users to create complex and unique passwords.

Offer features like two-factor authentication for an additional layer of security.

* Additional Considerations:

Password reset: Provide a mechanism for users to reset their passwords in case they forget them.

Account lockout: Consider implementing a temporary account lockout after a certain number of consecutive failed login attempts to prevent brute-force attacks.

1. **Citizen Portal for Government Services:**

* Functionality:

Government service access: The portal shall provide residents with a centralized platform to:

Access information and complete online applications for essential government services, including:

-Vehicle registration renewal

-Property tax payment and viewing

-Birth certificate issuance and request for other official documents

-View the status of submitted applications and track their progress

-Download relevant forms and documents

* Additional Considerations:

Accessibility: Ensure the portal is accessible to users with disabilities, adhering to relevant accessibility standards.

Security: Implement robust security measures to protect user data and information, including secure login protocols and data encryption.

Integration: Integrate the portal seamlessly with existing government back-end systems to ensure smooth data exchange and efficient service delivery.

1. **Online Permit Applications:**

* Functionality:

Allow residents and businesses to submit permit applications online for various activities (construction, renovation, events, etc.).

* Inputs:

Online application form capturing details like applicant information, project description, and supporting documents (uploaded electronically).

* Outputs:

System processes applications, manages workflows, and sends notifications to relevant departments for review and approval.

1. **Community Events Calendar:**

* Functionality:

Maintain a centralized calendar showcasing upcoming community events, festivals, meetings, and municipal initiatives.

* Inputs:

Event information (date, time, location, description, category) provided by authorized personnel.

* Outputs:

User interface displaying events with search and filter functionalities (location, date, category) to enhance discoverability.

**Non-Functional Requirements:**

1. **Usability:**
2. **Intuitive Navigation:**

Clear and consistent structure: Organize the website with clear and consistent navigation menus and layouts. Users should be able to easily find the information they need without getting lost.

Intuitive labeling: Use clear and concise labels for menus, buttons, and other interactive elements. Users should understand what each element does without needing excessive explanations.

Breadcrumbs: Implement breadcrumbs, a navigation element that shows the user's current location within the website hierarchy. This helps users understand their context and navigate back to previous pages easily.

1. **Multilingual Support:**

Cater to diverse audiences: Offer the website content in multiple languages relevant to the community served by the municipality. This promotes inclusivity and accessibility for users who might not be comfortable with the primary language.

Language selection: Provide a simple and intuitive way for users to select their preferred language. This could be a dropdown menu, a flag icon, or other user-friendly options.

1. **Attractive Interfaces:**

Visually appealing design: Create a visually appealing website with a clean and uncluttered layout. Use high-quality images, graphics, and color schemes that are aesthetically pleasing and consistent with the municipality's branding.

Balance aesthetics and functionality: While aesthetics are important, ensure the design doesn't compromise usability. Functionality and information clarity should remain a top priority.

1. **Enhancing User Experience:**

Search options: Implement a robust search function that allows users to search for specific keywords, information, or topics on the website. This helps users find what they need quickly and efficiently.

Meaningful color schemes: While color can be aesthetically pleasing, ensure color choices have a purpose and are used thoughtfully. Avoid using excessive or overwhelming color combinations that could hinder readability or accessibility.

Accessibility considerations: Adhere to web accessibility guidelines to ensure the website is usable for people with disabilities. This includes features like alt text for images, proper keyboard navigation, and color contrast adjustments.

1. **Performance Requirements:**
2. **Database Updates and Query Results:**

Database updates and query results shall be processed within a specified range of timeframes to ensure responsiveness. These timeframes should be defined based on the complexity of the operation and user expectations. For example, simple queries might be expected to return results within 1-2 seconds, while complex data updates might have a reasonable timeframe of 5-10 seconds.

1. **User Interface Load Time and Login Validation:**

The load time of the user interface and login validation shall meet predefined benchmarks. These benchmarks should be established based on industry standards and user experience best practices. For instance, the website should ideally load within 3-5 seconds, and login validation should be completed within 2 seconds.

1. **Data Backups and Recovery:**

The system shall maintain backups every 12 hours and be able to restore operations within an hour in case of failure. This ensures minimal data loss and quick recovery in the event of unexpected issues.

1. **Security Requirements:**
2. **Data Protection:**

Strict Security Measures: The system must implement robust security measures to safeguard sensitive data. This includes controls and practices to prevent unauthorized access, modification, or disclosure of user information.

Data Storage Compliance: Data storage practices should adhere to relevant security protocols and regulations. This might involve using secure storage solutions, encryption at rest and in transit, and implementing access control mechanisms.

1. **Secure Communication:**

Encryption: All external communication, including data transfer and user interaction, should be encrypted. This ensures that even if intercepted, the information remains unreadable without the decryption key.

1. **Payment Security:**

HTTPS Protocol: Payment transactions must be conducted through HTTPS, which establishes a secure connection between the user's browser and the server using encryption.

Secure Payment Gateway: Secure protocols like PCI DSS (Payment Card Industry Data Security Standard) should be implemented for secure payment processing.

NIST Cybersecurity Framework (CSF): This framework provides a voluntary, risk-based approach to managing cybersecurity risks. It outlines five core functions: Identify, Protect, Detect, Respond, and Recover, which can be used to develop and implement security controls tailored to your specific system and needs. <https://www.nist.gov/cyberframework>

Special Publications (SP) 800 Series: This series provides detailed guidance on various aspects of cybersecurity, including secure software development, risk management, and information security controls. These publications can be used to identify specific controls and best practices relevant to your system. <https://csrc.nist.gov/publications/sp800>

Computer Security Resource Center (CSRC): The CSRC is a NIST division that provides a wealth of resources on cybersecurity, including publications, tools, and training materials. You can use the CSRC website to find information on specific security topics relevant to your system. <https://csrc.nist.gov/>

1. **Portability:**
2. **Use of Web Standards:**

Adhere to W3C standards: Develop the website using well-established standards from the World Wide Web Consortium (W3C) for HTML, CSS, and JavaScript. This ensures compatibility with most modern web browsers.

Validate code: Regularly validate your code with W3C validators to identify and rectify any errors or inconsistencies that might cause compatibility issues across different browsers.

1. **Responsive Design:**

Implement responsive design: Utilize responsive design principles to create a website that automatically adjusts its layout and elements to fit the screen size and resolution of the device accessing it. This guarantees a good user experience on desktops, laptops, tablets, and smartphones.

1. **Browser Testing:**

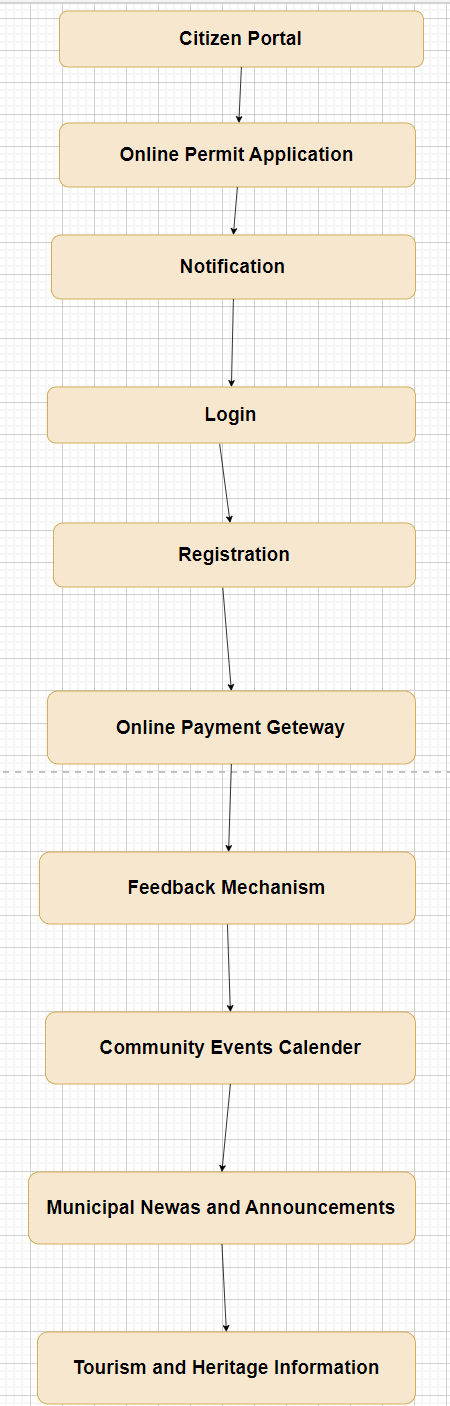
Cross-browser testing: Conduct thorough testing on a variety of popular web browsers (e.g., Chrome, Firefox, Safari, Edge) to identify and address any compatibility issues specific to certain browsers.

Emulators and simulators: Utilize browser emulators and simulators to test the website on different devices and platforms without requiring physical access to each device.

1. **Requirements and System Evolution**

The development of the Municipality App is a dynamic process that evolves over time. As the app moves from the conceptual stage to design, development, and finally deployment, the requirements also evolve. This evolution is driven by various factors such as user feedback, technological advancements, changes in municipal policies, and more. Understanding this evolution is crucial for successful project management and for ensuring that the app continues to meet the needs of its users and the municipality.

The Requirements Dependency Graph is a valuable tool in this regard. It visually represents the interrelation of different requirements, showing how one requirement might depend on another. For instance, the ‘report issue’ requirement might depend on the ‘user registration’ requirement, as users need to be registered before, they can report issues. This graph not only helps in understanding the impact of changes in one requirement on other related requirements but also assists in planning the development process by identifying the order in which requirements should be implemented.



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As the system evolves to meet these changing requirements, it’s important to manage this evolution in a controlled manner. This involves regularly reviewing and updating the requirements based on user feedback and changes in the municipal environment. It also involves continuously testing the system against these requirements to ensure that it continues to meet them.

Moreover, as new features are added and existing ones are modified, it’s important to ensure that these changes don’t negatively impact the system’s performance or usability. This involves performance testing, usability testing, and regression testing to ensure that new changes don’t break existing functionality.

Another key aspect of managing system evolution is ensuring backward compatibility (Explained in the glossary). As the system evolves, care must be taken to ensure that changes don’t disrupt the experience for existing users. This might involve maintaining support for older versions of the app, or designing new features in a way that they can be used alongside existing ones.

In conclusion, managing the evolution of requirements and the system is a complex but crucial aspect of developing the Municipality App. By understanding the interrelation of requirements, regularly reviewing and updating them, and carefully managing changes to the system, the development team can ensure that the Municipality App continues to meet the needs of its users and the municipality, both now and in the future.

1. **Conclusion**

In conclusion, the MSMS project holds immense potential to revolutionize the way municipal services are delivered and accessed by citizens. Through meticulous planning, stakeholder engagement, and technological innovation, the project has laid the groundwork for a future where municipalities can operate more efficiently, transparently, and responsively to citizens’ needs.

The journey towards implementing the MSMS has been marked by a shared vision of enhancing citizen engagement, promoting digital inclusion, and fostering community empowerment. By leveraging modern technology and best practices in software engineering, the project team has developed a robust and scalable platform that has the flexibility to adapt to changing requirements and evolving municipal landscapes.

Looking ahead, the success of the MSMS project will be measured not only by its technical capabilities but also by its tangible impact on citizen satisfaction, municipal efficiency, and community cohesion. Continuous feedback, monitoring, and evaluation will be essential to ensure that the system remains aligned with the evolving needs and expectations of both citizens and municipal stakeholders.

As we embark on the next phase of implementation and deployment, it is imperative that all stakeholders remain committed to the core principles of transparency, inclusivity, and accountability. By working together collaboratively and proactively, we can realize the full potential of the MSMS project and create lasting positive change for communities across our municipality.

In closing, the MSMS project represents a significant milestone in our journey towards building more responsive, resilient, and citizen-centric municipalities. With dedication, perseverance, and a shared sense of purpose, we are confident that the MSMS will serve as a catalyst for transformative change, driving progress and prosperity for years to come.

1. **Instructor’s feedback and evaluation**

This page is for our instructor DR. Ibrahim Al Bitar to write any comments, feedback, and suggestions for our software engineering phase 1. We take feedback very seriously and use it to learn from our mistakes. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_