# Zoozle Software Development Plan

#### Version 1.3

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# Introduction

## Identification

This software development plan (SDP) establishes the plans to be used for Zoozle in all the organization’s system development projects.

## Scope and Purpose

#### Scope

A new web-based email client for zMail. New interface will be more minimalistic and include AI integration to help users draft better emails.

#### Purpose

zMail used to be much simpler. This SDP will restore some of its simplicity and add new AI features. The users are current zMail users, and most Zoozle users. These improvements are needed to keep users retained in Zoozle products and increase productivity.

#### Business Challenge

1. **Diversity and Inclusion:** One significant challenge is ensuring that the updated zMail system is universally accessible and user-friendly for a diverse global audience. This includes accommodating various languages, cultural norms, and accessibility needs. Failing to address these differences can lead to a segment of potential users feeling alienated or unable to use the service effectively, which can, in turn, harm the brand's reputation and user retention rates.
2. **User Retention and Engagement:** As users have a plethora of choices for email and communication platforms, retaining them within the Zoozle ecosystem is a significant challenge. The system must offer unique and compelling features that not only attract users but also ensure they prefer zMail over other options. This includes understanding and catering to the specific needs and preferences of different user demographics, which can vary widely across cultures and regions.
3. **Adaptation to New Features:** Introducing AI and other advanced features while maintaining simplicity is a delicate balance. Users from different backgrounds and with varying levels of tech-savviness should find the system intuitive and beneficial. Overcomplicating the user interface or introducing features that don't resonate with a wide user base can lead to frustration and a decrease in productivity, contradicting the system's primary goals. It's crucial to implement these changes in a way that feels natural and enhances the user experience without alienating less tech-savvy individuals.

## System Level Project Description

#### In performing system development for the zMail upgrade, Zoozle will adhere to a structured and comprehensive approach that encompasses various policies, requirements, and standards:

#### Development Framework and Tools: Zoozle will utilize a robust development framework that supports agile methodologies, allowing for iterative and flexible development. Tools such as version control systems (e.g., Git), continuous integration/continuous deployment (CI/CD) pipelines, and project management tools (e.g., Jira or Trello) will be essential in maintaining organization and efficiency. The choice of programming languages and development environments will be guided by the need for scalability, security, and performance.

#### Compliance and Accessibility: Adhering to accessibility standards, such as the Web Content Accessibility Guidelines (WCAG), is crucial to ensure that the system is usable by individuals with disabilities. This includes providing alternative text for images, ensuring keyboard navigation, and using screen reader-friendly layouts. Developers specialized in accessibility will be part of the team to ensure compliance and inclusivity.

#### Quality Assurance and Testing: A comprehensive testing strategy, including unit testing, integration testing, and user acceptance testing (UAT), will be implemented. This ensures that all features work as intended and meet the set requirements. The testing phase will also involve beta testing with a diverse group of users to gather feedback and make necessary adjustments, particularly focusing on user experience across different cultures and demographics.

#### Training and Documentation: Proper documentation and training materials will be prepared and made available to both the development team and the end-users. This includes detailed developer guides, API documentation, and user manuals. Training sessions and workshops will be organized to familiarize the team with the tools and technologies used and to update them on accessibility and compliance standards.

#### By adhering to these structured procedures and considering aspects like tooling, compliance, testing, and training, Zoozle aims to develop a system that is not only technically sound but also inclusive, user-friendly, and aligned with the company's standards and goals.

## System Description

The upgraded zMail system is an advanced, AI-enhanced communication platform designed to streamline and enrich the email experience for a wide range of users. At its core, the system aims to simplify the complexities traditionally associated with email management while integrating intelligent features that predict and adapt to individual user needs. The scope of the system extends beyond basic email functions, offering integrations with other Zoozle products and services to create a cohesive and productive ecosystem. The purpose of this enhancement is to retain user engagement through a superior, intuitive user experience, increase productivity through AI-driven tools, and establish a future-ready platform that evolves with technological advancements and user expectations.

## Document Organization

The SDP is organized as follows.

* Section 1 describes the introduction of the SDP. It also provides an overview of the scope and objectives of the SDP.
* Section 2 describes the System Requirements of Zoozle.
* Section 3 describes use case and entity relationship diagrams of Zoozle.
* Section 4 describes the user interface design at Zoozle.
* Section 5 describes the standards and procedures including the process methodology to be used in Zoozle.
* Section 6 describes the technical standards that will be used at Zoozle. This section is to be updated based on Zoozle’s needs.
* Section 7 describes the system phases involved for each system development project. Each phase will include an activity diagram outlining what processes are completed at each phase with an explanation of each phase.
* Section 8 describes the verification and validation process to ensure that the system delivered meets the needs and requirements of the project and is developed correctly.
* Section 9 describes the implementation strategy to be used at Zoozle.
* Section 10 describes the maintenance plan for Zoozle once the system is successfully implemented in production.

# System Requirements

## Requirements Determination

The process of requirements determination for the upgraded zMail system involves a thorough analysis of the current system's capabilities, identifying areas of improvement, and understanding the needs and expectations of the users. This includes pinpointing prevalent issues like slow response times, inadequate spam filtering, or a lack of intuitive features that users expect from a modern email service. Through surveys and feedback mechanisms, we aim to capture the explicit needs of our current users and most importantly, the implicit expectations that aren't voiced but are critical for a seamless experience. Documenting these findings will form the basis for outlining the necessary enhancements and integrations for the new system.

## Requirements Elicitation Techniques

For the zMail upgrade, multiple requirements elicitation techniques will be employed to ensure a comprehensive understanding of user needs and system objectives. Firstly, stakeholder analysis will be conducted to identify all parties affected by the system and understand their interests and influence. Interviews with key stakeholders, including end-users, IT staff, and business managers, will provide in-depth insights into the specific needs and expectations. Additionally, surveys and questionnaires will be distributed broadly to gather a wide range of user feedback. Observations of current system usage will also be important to identify unarticulated needs and pain points. Lastly, prototyping will be used as a dynamic way to elicit feedback on potential features and interfaces, allowing users to interact with mock-ups of the proposed system.

## Requirements Analysis Strategies

In the requirements analysis phase, the gathered data will be systematically reviewed and interpreted to define clear, actionable requirements for the new zMail system. This will involve collaborative sessions with the development team and stakeholders to prioritize the needs and ensure alignment with business objectives. According to Investopedia (Oct. 2023), Techniques like SWOT analysis (Strengths, Weaknesses, Opportunities, Threats) will be used to evaluate the implications of each requirement. User stories and use cases will be developed to provide a clear picture of how different users will interact with the system. Throughout this process, continuous communication with stakeholders is imperative to validate the understanding of requirements and make adjustments as new information emerges. The ultimate goal is to develop a well-defined set of system requirements that are agreed upon by all parties and that will guide the subsequent design and development phases.

# Use Case and Entity Relationship Diagrams

## 3.1 Use Case Diagram

A screenshot of a computer

Description automatically generated

Figure 1. Use Case Diagram

Use case diagram showing Actors, Systems and Goals. The Actors are all users, including business users, zMail employees and the public. The Goals are improved communication and systems outlining this are shown.

## 

## 3.2 Entity Relationship Diagram

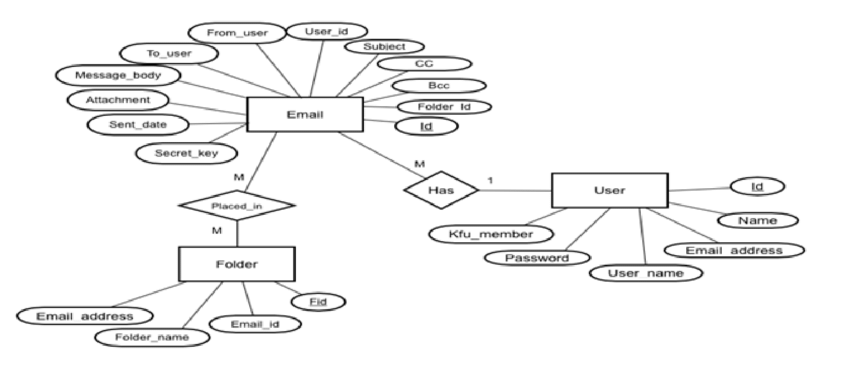


Figure 2. Entity Relationship Diagram

An Entity relationship Diagram showing interconnection between emails, users and folders. Each email and user have an ID as its primary key. Attributes are shown for each entity. Emails are placed into folders, while each email has aa unique user ID.

# User Interface Design

## Interfaces and explanations

*A whiteboard with a list of mail

Description automatically generated*

Figure . Mockup of Homepage

Mockup of the zMail system. The main bar will be on the left side. From here the user can change settings and check unread mail. The default mailbox will be the “All Mail” box. A list of emails displaying their subject line, part of the content and date is shown in rows. The user can change this from the settings and enable a spam filter. A plus icon is in the top right hand corner used to compose a new email.

## System Prototype

A screenshot of a phone

Description automatically generated

Figure . Wireframe of Mobile App

[▶ Mobile App Wireframe - Mobile App Wireframe zMail · Moqups](https://app.moqups.com/NoeyKbcPjhd4dL3Vhq5k1y2ogT25yocI/view/page/a880590a1)

Login Screen: Allows user to login or reset password. There is a section to create a new account.

Account creation screen: Allows the user to select their email address and create a password. There is a button to switch back to the login screen if the user already has an account.

Settings menu: This is the popup menu shown when the cog icon is clicked. You can administer your account from here.

Inbox screen: This is the main screen that shows emails in your inbox. The contact’s name and photo is shown next to their emails.

Contacts page: This is the page that lets you maintain your contacts. You can search through your contact list or add a contact.

# Standards and Procedures

## Deliverable Standard

All design deliverables will be submitted using standard UML using Visio. Alternative tools may be used pending approval from the development lead. All deliverables will be reviewed by all stakeholders before the final signature by the project manager.

## Process Methodology Diagram

Chosen Agile methodology: <Enter here>.

<Enter UML activity diagram here.>

## Process Methodology Explanation

<Enter here, including justification for its adoption. Please write at least three substantive and original pages of work and include at least one reference. Please do not copy and paste anything but instead paraphrase it.>.

## Epics and Stories

Epic X - <Enter here>.

Epic X - <Enter here>.

Epic X - <Enter here>.

Epic X - <Enter here>.

<Example:

Epic 1: Define Project Scope

Story 1.1 – Identification

Story 1.2 – Scope and Purpose

Put stories into epics as small tasks to do.>

# Technical Standards

## 6.1 Network Stack Diagram

<Paste network stack diagram.>

## Cloud Environment

<Please define the cloud environments such as Microsoft Azure or Amazon Web Services and your justification for selecting it. For example:

Amazon Web Services will be used for Zoozle’s cloud deployment. Existing applications are already deployed on Amazon Web Services and it is simpler to keep all the technology here rather than deployed to another cloud provider such as Microsoft Azure or Google Cloud.>

## Programming Languages

<Please define the type of programming language and reason you selected it. For example:

C#: C# is the primary language used to develop the applications for Zoozle. Using Microsoft Xamarin, developers will be able to deploy applications to iOS and Android using C#.

ASP.NET: For web applications at Zoozle, they will be developed using ASP.NET. This will be used in conjunction with HTML, CSS and JavaScript.

Java: There are some existing legacy applications that use Java and will continue to be supported with Java. There are also various projects that require Java to be used due to existing libraries and code base with third parties.>

## Servers

<Define the types of servers needed here and the reason you selected it. For example Web Server, Database Server, development server, prod server, backup server.>

## Databases

<Please define the database you will use and reason you selected it. For example:

SQL Server: Most of Zoozle’s databases will be using SQL Server as C# and ASP.NET are the primary programming languages at Zoozle.

Oracle: For the legacy Zoozle applications, there are some that requires Oracle. There are no plans to continue to use Oracle for future projects. Any plans to use Oracle should be discussed with the project manager.>

## Development Workstations

<Please define the development workstation minimum requirements. For example, if you were using Windows:

Development workstations must support Visual Studio and NetBeans. Development workstations should have the minimum hardware:

* 2.4GHz CPU.
* 8GB RAM.
* 256GB SSD boot drive, 1TB HDD storage drive.
* 2GB graphics card.

Development machines that are used for data analysis or video creation should have the minimum hardware:

* 2.4GHz CPU.
* 16GB RAM.
* 256GB SSD boot drive, 512GB SSD storage.
* 4GB graphics card.>

## Development Software

<Please enter a list of all development software here.>

# Project Plan

## Gantt Chart

<Create a Gantt chart listing the steps needed to design, develop, test, and implement the system in production. There should be high-level stages including sub-levels such as:

* Design.
  + Design Database Schema.
  + Design User Interfaces.
  + Design Review.
  + Sign-Off.
* Develop.
  + Develop Database Schema.
  + Develop User Interfaces.
  + Development Review.
  + Sign-Off.
* Test.
  + Implement in test environment.
  + Logical Testing.
  + User Testing.
  + Security Testing.
  + System Stress Testing.
* Implement.
  + Create User Training Manual.
  + Create Developer Document.
  + Train Users.
  + Implement in production environment.

Include tasks, short descriptions, plan start date, plan end date, actual start date, actual end date and weekly dates for the columns. Fill in the cells for each week.

Make sure you have dependent phases and when one ends another starts. Please do not have all stages start on the same time. Estimate how long you think it will take. Some stages like development will take longer than testing.

One of the best tools to use is MS Project. If that is not available, please feel free to use an online Gannt chart maker or even MS Excel. When you complete the Gannt chart, please paste it in this area.

Microsoft has a simple Gantt chart template you can use for this assignment in Office 365. It is available here: <https://templates.office.com/en-us/simple-gantt-chart-tm16400962>

Please also include at least five substantive and original sentences on the Gannt chart such as how many types of resources, dates, and other items.>

# Verification and Validation

<Enter your types of tests here.>

## Logical Data Test

<Please create a Logical Data Test table (and label it as such) with the following columns:

* Test Condition, Expected Result, Actual Result, Comments.
* Write at least five different types of logical data tests.>

## 8.2 Other Tests

<Define at least four other types of tests (network, security, et cetera), and write at least three substantive and original sentences on how they will be conducted. Create at least one other table, diagram, or image on this test.>

## Sign-Off Memo

<Create a sign-off memo for stakeholders to agree with the findings (list at least four stakeholders in order of importance. One should be the project manager).>

# References

Investopedia. (October, 2023). SWOT Analysis. Retrieved January 5, 2024, from <https://www.investopedia.com/terms/s/swot.asp>