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# Travify - Itinerary Management System

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**Abstract**

The objective of this project is to develop a smart itinerary planning system called Travify to assist users in managing their travel plans in a centralized platform. Many users face challenges using multiple tools like notes, calendars, and maps to organize trips, which often leads to disorganization and missed details. Travify solves this by offering key features such as itinerary creation, budget tracking, destination management, and profile customization. The system uses real-time APIs, user-generated content, and cloud integration for better performance and accessibility. Travify was developed using the Agile methodology, involving iterative development cycles and regular feedback loops to ensure continuous improvement. The front end was built using HTML, CSS, and JavaScript, while the backend was implemented with PHP and a MySQL database for data management. Functionality was validated through unit testing, integration testing, and user testing. Feedback from testing revealed improved usability and convenience. Travify aims to simplify planning, enhance personalization, and ensure a seamless travel experience for all users.

## 1. Introduction

Planning trips in today's digital age should be simple and enjoyable, yet many travelers still struggle with disconnected tools and complicated processes. Current solutions force users to juggle multiple apps for booking, navigation, budgeting, and translation which is leading to frustration and wasted time [11], [12]. Recognizing these pain points, we developed Travify, an all-in-one web platform that simplifies every aspect of trip planning through smart, integrated features. The objective of this project is to create a centralized and user-friendly itinerary management system that allows users to plan, organize, and manage their trips more efficiently. The scope of this project is focused on travelers to provide a streamlined and efficient travel planning platform to plan and manage their travel activities.

Travify revolutionizes travel organization by offering many features such as itinerary creation or travel plans through our intuitive “Add Itinerary” system. Travify also provides comprehensive management to view and manage all your trips like edit and delete itinerary details. “Currency Converter” feature for instantly converting currencies to manage budgets across destinations and “Translator” feature to make it easier for travelers to communicate if they go on a trip in another country. Travelers also can use the “Maps” feature to ensure they never lose their way. Users need to register first or login if they have their account using registration or login feature to use all available features in this system. Furthermore, users can also edit their profile like username and email using the “Edit Profile” feature. Users also can recover their password if they forget their password via forgot password functions.

Travify combines all essential travel tools into a single, user-friendly platform. Our system eliminates the need to constantly switch between apps, providing a streamlined experience from initial planning through trip completion. With important features like real-time currency conversion and instant translation, Travify particularly benefits international travelers. The platform's map integration and profile customization ensure every journey is tailored to individual needs. By combining practical functionality with intuitive design, we're transforming trip planning from a stressful chore into an exciting part of the adventure.

Itinerary management systems have evolved where the old manual and paper-based methods have been converted into effective digital systems, which is through the application of AI technologies that allows real-time information as well as collaboration capabilities [1]. Machine learning and APIs used by today travel apps facilitate development of personalized travel journey. Such websites as VoyageVue and Travel Diary tailor trip recommendations around the user to their specific tastes, while APIs, such as Google Maps and TripAdvisor supply real-time and crowd-sourced tips to help the traveler plan its journey [3][4][6][7]. Nonetheless there are still obstacles. Other well-known applications, like WanderLog, do not provide as much personalization, and some of them, including TripPlannerX, have unstable real-time information [3]. It indicates that technology has enhanced convenience but there is always an opportunity to advance further to the customization of information and the precision of data as it relates to the users.

The future could bring the itinerary systems fueled by the predictive AI that would allow creating automatically scheduled itineraries or even supporting such augmented reality (AR) abilities and make the planning experience easier and more immersive [9]. Such systems are constructed based on modern technologies, such as React or Flutter, to develop web and mobile applications [1][2], MySQL or Firebase, to develop databases [4][5], and cloud services, which guarantee usability and reliability, including AWS or Google Cloud [8].

Machine learning and AI are still significant in that user behavior can be analyzed to provide more intelligent and more individual travel solutions [9][10]. Currently, using the user-centered design (UCD) model, such systems are becoming simpler in usage, more accessible, and affecting the emotional aspect to adjust to the various needs of the travelers regardless of whether they are individual tourists or families or corporate tourists [1][2][5]. Although the existing applications such as Google Travel, TripIt and Sygic Travel tend to be useful in automation of activities, there is always a tendency of failing when it comes to complete personalization, real-time viewing of expenses, or simple group coordination [3]. Based on Table 1, Travify offers a more complete and user-friendly solution compared to existing systems, which often lack customization and require multiple apps or paid features. An ideal future system would seamlessly combine AI-driven flexibility, group planning features, offline access, and cost management to make traveling more enjoyable and stress-free [8][9]. Moreover, it also can make our trip or journey went smoothly without any problems or challenges.

**Table 1** *Comparison of Existing Systems and Travify*

| System | Key Features | Strengths | Limitations |
|---|---|---|---|
| **Google Travel** | Automatically pulls travel info from Gmail and displays a clean itinerary | • Seamless integration with Google services<br>• Simple and automated | • Limited customization<br>• Cannot fully edit or rearrange plans manually |
| **TripIt** | Users forward booking emails to create a travel plan; supports calendar sync | • Easy to use<br>• Real-time alerts (Pro)<br>• Calendar support | • Many features are only in paid version<br>• Outdated interface |
| **Sygic Travel** | Map-based planning, attractions database, offline access, itinerary suggestions | • Visual planning with maps<br>• Offline access- Detailed suggestions | • Interface can be overwhelming<br>• Some features require payment |
| **Travify** | All-in-one platform with itinerary creation, currency converter, translator, and maps | • Fully integrated planning<br>• Personalized profiles<br>• User-friendly and easy to use<br>• Can edit and delete their itinerary | • Currently only web-based<br>• Future improvements needed for offline mode |

## 2. Methodology

We are implementing an Agile methodology on Travify. Agile is one tool of development used in software and it emphasizes flexibility, collaboration, and releases. The developers and users are able to communicate frequently in this approach. This implies that it is possible to enhance the system promptly with the help of feedback. Other than that, it also assists the team to adapt to new concepts or variations without being compelled to restart the entire project. Travify possesses some of the tools such as add itinerary, currency converter, translator and maps, thus with the help of Agile methodology we could easily work on each of its parts, step-by-step.

Based on Fig. 1, Agile methodology is divided into six phases such as plan, design, development, test, deploy and review. Each phase has its own roles. The Agile methodology is repeated in cycles with each of the phases aiding in the improvement of the system at a time. As opposed to constructing everything simultaneously, Agile divided the tasks into smaller sections, which enables frequent scopes and reviews.

On the planning stage, on the one hand, we must choose a name for our project according to the problems we face at the moment and arrange a meeting with our supervisor. Following the meeting and the discussion, we wanted to develop a system that would assist the user to know destinations, plan trips and travel with ease. We also mentioned some of the principal features we required such as add itinerary, currency converter, translator and maps. Communication within the team was quite crucial. We ensured that we are constantly checking in to ensure that everyone is in concurrence and that nothing is moving contrary.

We began by making basic interfaces of important pages such as the home page, the register, the login and the add itinerary page during the design phase. At the onset, we did not conclude everything. When us developed the system, we did it over and over, making the design better. We have considered the feedback given by our friends and supervisors and changed the appearance of the app to make it more pleasant to look at and easier to use. During the development phase, we begin work by developing simple components such as navigation and inserting itineraries. We used to communicate with each other all the time to keep each other informed so that we can work better as a team particularly in integrating the design to the functions of the system.

Upon that we tried the system to ensure that we had everything as we wanted. The initial one is that we performed unit testing to test each function individually. Then we conducted an integration testing to ensure that the different components of the system were compatible. The last step was conducting a user acceptance testing where the users tested the system and provided feedback. In case we managed to discover bugs or problems, we documented them and solved them at the following sprint.


**Fig. 1** *Agile Methodology*

## 3. Result and Finding

To evaluate the reliability and functionality of the Travify system, functional testing was conducted across 11 core features. Based on Table 2, it shows 11 features were tested to random user to assess consistency, performance, and error handling. The results are summarized in Table 2 below.

**Table 2** *Results for Functionality*

| Test Case | Description | Input | Expected Output | Result (Pass/Fail) |
|---|---|---|---|---|
| TC1 | Register | Email, Password, Confirm Password | Account created successfully | Pass |
| TC2 | Login | Email, Password | Login successfully | Pass |
| TC3 | Add Itinerary | Destination, Date, Budget | Itinerary added successfully | Pass |
| TC4 | Edit Itinerary | Edit existing itinerary details | Itinerary updated successfully | Pass |
| TC5 | Delete Itinerary | Select itinerary to delete | Itinerary deleted successfully | Pass |
| TC6 | Edit Profile | Change username/email/password | Profile updated successfully | Pass |
| TC7 | Currency Converter | Select currency and input amount | Converted value displayed | Pass |
| TC8 | Translator | Input text and target language | Translated text displayed | Pass |
| TC9 | Maps Integration | Click maps feature | Map loaded successfully | Pass |
| TC10 | View Itinerary List | Click View Itinerary | List displayed correctly | Pass |
| TC11 | Forgot Password | Input email to reset | Reset email sent successfully | Pass |

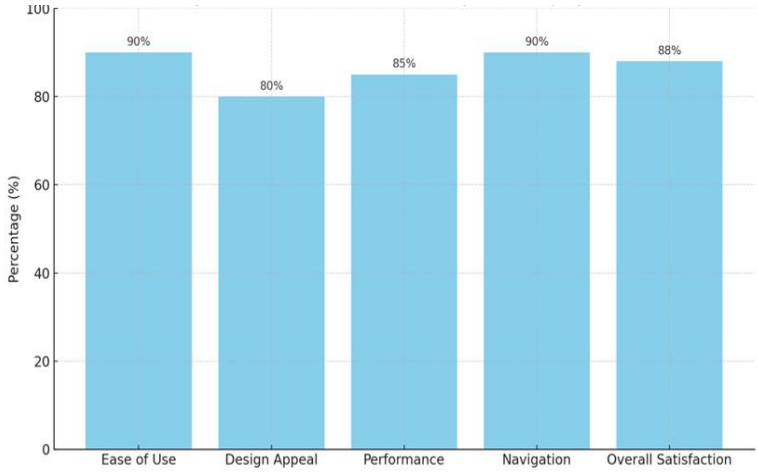


**Fig. 2** *User Feedback Summary on Travify System*

Fig. 2 shows a total of 32 users were involved in testing the Travify system. They were asked to answer a Google Form after using the system. The feedback form was used to evaluate user experience, satisfaction and interface design. The results are summarised in the Fig. 3 below.

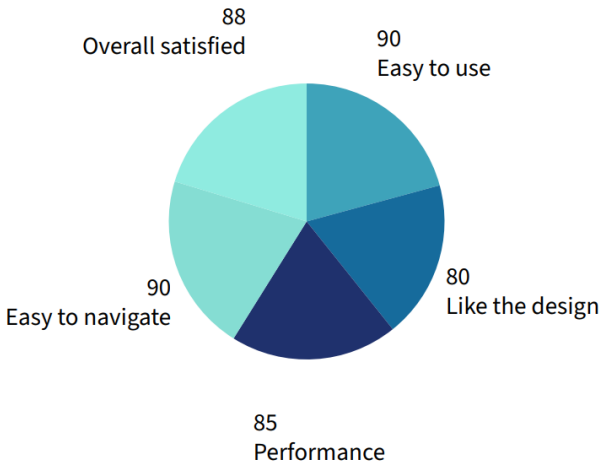


**Fig. 3** *Percentage of Results Feedback by The User*

Next, the user's feedback for the system are listed below:

i. Add 2FA for security addition.
ii. Add more information regarding the user's destination.
iii. Insert background sound.
iv. Add on navigations like Waze and Google Maps.
v. Publish on App Store/ Google Play.
vi. Give an option for a language.

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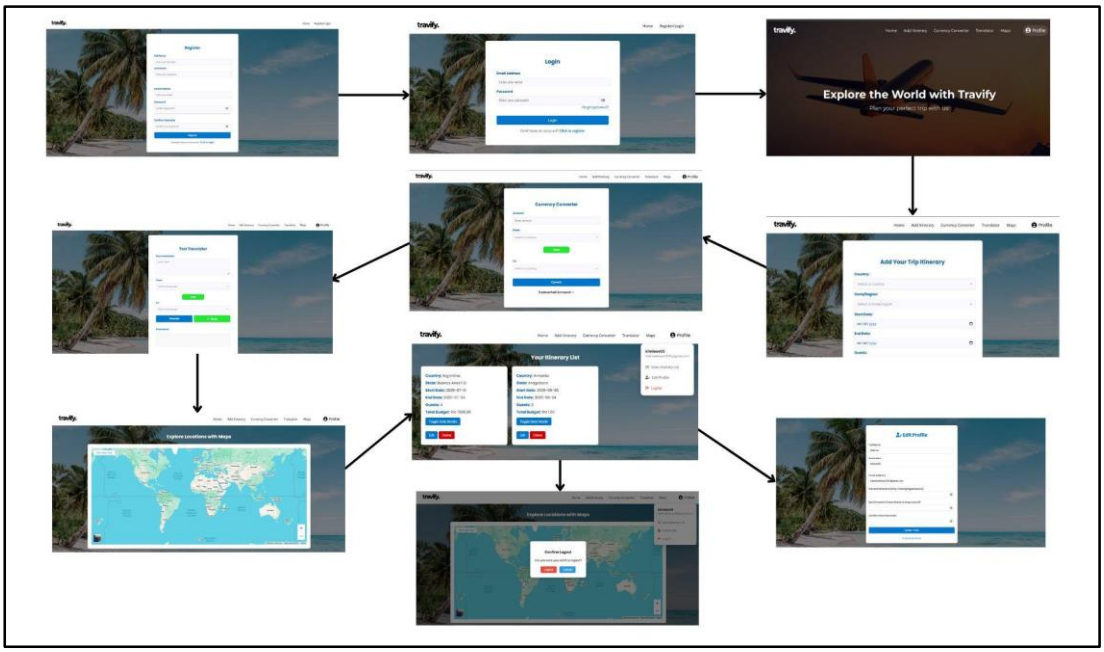


**Fig. 4** *Flow of Travify main features*

Fig. 4 shows the flow of Travify main features. First, users need to register or log in first to access the platform. Once user's login, it directs to the homepage. Users can easily create new itineraries by clicking the "Add Itinerary" button in the navigation bar. Then, users need to fill their itinerary details such as country, state and budget per day. Users also can use essential travel tools like a currency converter for budgeting, a translator for language assistance, and interactive maps for navigation by clicking the button in the navigation bar without leaving the platform. Users can view all their trip details that saves automatically in "View Itinerary List" features by clicking it in the dropdown menu and allow users to edit and delete their itinerary details anytime. In the dropdown menu, users also can see "Edit Profile" features to edit their profile like username, email or password and "Logout" button to logout from their account. By combining all these features in one place, Travify eliminates the need for multiple apps, making trip planning efficient and stress-free.

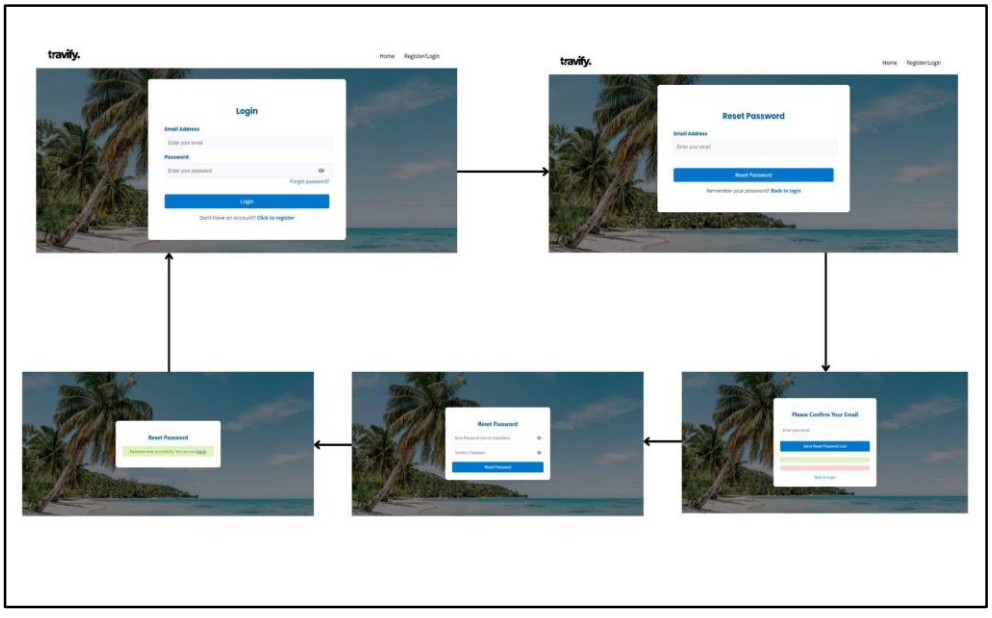


**Fig. 5** *Flow of forgot password function*

Fig. 5 shows the flow of Travify's password recovery process. When users click "Forgot Password" on the login page, they're prompted to enter their registered email address. For more safety, users need to enter their email twice for confirmation. The system immediately sends a reset link to that email. This link directs users to a protected page where they can create a new password, which must meet security requirements like minimum 8 characters and be entered twice for verification. After users enter their new password and successfully reset it, the system will show the message "Password reset successfully. You can now log in.". Lastly, users need to click the login link in the message directly to the login page.

## 4. Conclusion

At the end of this project, Travify is a considerable innovation that aims at making travelling easy with the use of technology. We have resolved some of the biggest pain points that users endure every day with a feeling of disorganization using various applications, the hassle of managing finances in different currencies, and the way of easily organizing excellent itineraries. We have made the travel planning experience truly convenient by offering all the necessary features, such as itinerary creation, real-time currency converter, translation of texts to familiar languages, and map navigation.

The fact that Travify is user-centric is what makes it very valuable. We created this platform bearing real-life travelers in mind, and we have in mind a student backpacking through Europe and the business person with a very tight schedule. The system is flexible enough to cater the various styles of travel and at the same time it is very simplified. The elements that make up its features such as safe authentication and password retrieval establish accessibility without compromise on information on the part of the user. This project has presented an insight to all issue solutions using web technology in a simple way. With Travify, we have proven that travel planning should not be complex, but, instead, with appropriate tools being consolidated at an easy-to-use interface, they allow taking simple steps toward your travel plans.

Going forward, Travify has great prospects of growing. The next versions may include a mobile application development, a customizable AI-driven recommendation, the ability to share location with friends, or even adding the augmented view of the desired destination. But at its core, it will never stop being the same as what it is now, which is a smart and simply effective solution to the problem of people who like to spend their time to enjoy their trips instead of struggling with the organization of it.

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## Conflict of Interest

Authors declare that there is no conflict of interests regarding the publication of the paper.

## Author Contribution

The authors confirm contribution to the paper as follows: system design and user interface development: Muhammad Hakimie Ikhwan; backend development and database integration: Muhammad Syafiq Syahmi; testing, deployment, and documentation: Muhammad Syazwan Amri. All authors were involved in project planning, sprint discussions, and review of the final system. All authors reviewed and approved the final version of the manuscript.

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