

CulturaLink: A Multi-Platform Web Forum Application for Global Cultural Exchange

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ABSTRACT

In an increasingly connected world through the web and the internet, the need for platforms that can promote global cultural awareness, and meaningful interaction has never been more essential. This study presents CulturaLink, a multi-platform progressive web forum application designed to foster cultural exchange and support personalized travel planning made by other users who are enthusiastic to share their experiences with others. The primary objective of this project is to address the absence of centralized digital spaces that promote inclusive dialogue, cross-cultural engagement, and accessible travel information. The system was developed using HTML, CSS, JavaScript, Vue.js, Python, Django, and MongoDB by the Agile Software Development Life Cycle. A number of its main features include a global discussion forum, user achievement systems, a dynamic travel itinerary builder with budget tracking, and more. Functionality, interoperability, security, reliability, and user experience were evaluated by the researchers through the use of a Likert scale. This data was gathered from multiple respondents, ranging from end-users and industry experts. Through this system, findings were able to verify a strong agreement on the system's usefulness, ease of use, and importance, which upholds its role in supporting meaningful cultural exchange. Overall, the limitations stated in the paper did not impinge on the effectiveness of the platform. The findings of this project support its potential as a feasible, user-driven tool for fostering global connections and promoting the United Nations' Sustainable Development Goals, ultimately promoting not just global cultural exchange but also education, equality, and peaceful institutions.

Keywords: Cultural Exchange; Culture; Inclusivity; Travel; Web Forum Application

INTRODUCTION

In an increasingly interconnected world, the importance of cross-cultural understanding has become paramount. While mainstream platforms such as Reddit, Facebook, and Twitter allow for global communication, they are not specifically designed for cultural exchange and often lack structured features that encourage meaningful intercultural dialogue. Prior studies emphasize the transformative role of technology in promoting global collaboration and preserving cultural identity (Williams, 2023; Mendoza et al., 2023). However, current digital platforms rarely integrate cultural interaction with practical tools such as travel planning, resulting in fragmented user experiences and limited opportunities for immersive cultural engagement.

This research introduces **CulturaLink**, a multi-platform progressive web forum application designed to promote global cultural exchange while providing interactive tools for itinerary creation and collaborative learning. Built using Vue.js, Python Django, and MongoDB, the system supports multilingual translation, gamified achievements, and cross-device accessibility. Unlike existing solutions, CulturaLink merges cultural storytelling, travel

planning, and social interaction in one cohesive platform. This study addresses a gap in culturally focused digital tools by providing a novel environment that supports inclusive dialogue and practical utility, contributing to Sustainable Development Goals 4, 10, and 16. The platform aims to foster global citizenship, reduce cultural barriers, and encourage respectful exchange in a digital-first world.

STATEMENT OF THE PROBLEM

CulturaLink addresses the quiet obstacles some individuals may have in obtaining different cultural activities, dependable travel information, and meaningful internet interaction. Many existing platforms do not provide a centralized location for users to investigate various cultures, limiting greater cultural awareness and international appreciation. Furthermore, visitors frequently struggle to discover reliable and accurate information on their trip destinations, and the absence of online communities' limits prospects for meaningful interactions and shared experiences. CulturaLink fills these gaps by prioritizing what current platforms in the interwebs lack, providing a space where travel and culture enthusiasts can effortlessly connect with cultural information, travel options submitted by other users as well, and a worldwide community for expanded participation.

Beyond addressing these concerns, CulturaLink aligns with several United Nations Sustainable Development Goals (SDGs), specifically Goal 4: Quality Education, Goal 10: Reduced Inequalities, and Goal 16: Peace, Justice, and Strong Institutions. By promoting access to educational and cultural content, the platform promotes a global community and intercultural understanding (Goal 4). Its inclusive design and stress on respectful dialogue, unlike unmoderated subcommunities on Reddit, or the multitude of trolls and misinformed people on Facebook, contribute to reducing social differences and promoting equity (Goal 10). Moreover, by encouraging peaceful, respectful interactions and fostering a culturally appreciative community, CulturaLink supports efforts toward building just and inclusive institutions (Goal 16).

OBJECTIVES OF THE STUDY

The study is carried out to conduct, develop, test, and implement the necessities for this project entitled CulturaLink, which is a progressive web application that has been designed to serve as a global forum for a diverse cultural community. The study specifically aims to achieve the following objectives:

1. Conduct an analysis of the tools required for the overall development and conception of CulturaLink as a web application.
2. Develop modules, screens, and features using analyzed tools to aid application development and usability.
3. Test the system's interoperability, reliability, security, usability, and functionality as per project requirements before deployment and implementation.
4. Implement and put the CulturaLink application on a web hosting platform that lets users access it from all over the world.

LITERATURE REVIEW

Existing literature found by the researchers underscores the significance of cultural exchange in fostering peace and understanding. However, many digital platforms emphasize either tourism or user engagement-centered algorithms rather than fostering comprehensive intercultural learning. Research shows that inclusive forums and personalized engagement enhance user experience and learning. This study builds on those findings, integrating modern frameworks such as a Likert scale and the ISO 25010 Software Quality Model to ensure high usability and user satisfaction.

Table 1. Review of Related Literature: Relationship Table

No.	References	Name of Articles	Subject	Project Relevance
1	[1] Nowacka (2024), [2] Debroy, P. (2023)	[1]The Pros And Cons Of Cross- Platform App Development., [2]Cross-Platform Development Vs. Native Ios App development: Pros And Cons.	Multi-Platform Applications	Potential Advantages and Disadvantages of Multi- Platform Development Frameworks
2	[1] Schachne, A. (2024), [2] AIContentfy team (2023)	[1]41 Content Distribution Platforms To Amplify Your Reach., [2]The Importance Of Multi-Platform Content Distribution For Increased Reach.	Multi-Platform Applications	The Importance of Multi-Platform Content Distribution for Increased Reach
3	[1] Brooks (2023), [2] Megha, A. (2024)	[1] The Impact Of Cross-Platform Technology On The App Industry., [2] Comparison Of React Native Vs Ionic Vs Flutter Vs Phonegap.	Multi-Platform Applications	The Impact of Cross- Platform Technology on the App Industry
4	[1] Williams (2023), [2] Jones, G., Chace, B. C., & Wright, J. (2020)	[1] Navigating Cultural Differences: Overcoming Challenges And Building Collaboration., [2] Cultural Diversity Drives Innovation: Empowering Teams For Success.	Cultural Integration and Adaptation in Digital Environments	Cultural Diversity in Digital Spaces
5	[1] Chen, Y-W., Mendy, M. (2021), [2] Finn and Aayeshah's (2019), [3] Thussu's (2009)	[1]Cultural Identity. [2]Representation Of Race, Ethnicity, And Culture In Digital Media. [3]Globalization, Cultural Identities, And Media Representations.	Cultural Integration and Adaptation in Digital Environments	Cultural Identity and Representation in Digital Media
6	[1]Utah Valley University (2023), [2]Panchal, T., Vadhera, A.	[1]Technology And Culture., [2]"Technology's Role In Cross- Cultural Communication.", [3]Cultures And Technology: An	Leveraging Technology for Global Cultural Exchange	Role of Technology in Facilitating

	(2023), [3]Combi, M. (2016)	Analysis Of Some Of The Changes In Progress— Digital, Global And Local Culture.		Cultural Exchange
7	[1] TechSpirited (2015), [2] Castells (2000)	[1] Technological Determinism Vs. Social Constructionism: A Face-Off., [2] Toward A Sociology Of The Network Society.	Leveraging Technology for Global Cultural Exchange	Cultural Exchange with Technology
8	[1] Mendoza, Franco, & Gómez (2023), [2] Shadiev, R., Sintawati, W., Kerimbayev, N., & Altinay, F. (2024)	[1]Technologies For The Preservation Of Cultural Heritage—A Systematic Review Of The Literature., [2]Systematic Review (2003–2023): Exploring Technology-Supported Cross-Cultural Learning Through Review Studies.	Leveraging Technology for Global Cultural Exchange	Implementin g Technologic al Solutions for Cultural Exchange
9	[1]Dhingra & Mudgal (2019), [2]Haenlein & Kaplan (2010), [3]Morzy (2012)	[1] Historical Evolution Of Social Media: An Overview., [2] Users Of The World, Unite! The Challenges And Opportunities Of Social Media., [3]Evolution Of Online Forum Communities.	Web Forum Applications in the Technological Landscape	Evolution and Importance of Web Forum Applications
10	[1] Tewksbury & Rittenberg (2012), [2]Eastern Kentucky University (2020), [3]Hafeez (2024), [4]CivicPlus (2021)	[1] Information Democratization., [2] How Has Social Media Shaped How We Communicate., [3] Online Community: How To Build An Effective One In 2024., [4]Fostering And Facilitating Constructive Dialogue Across Social Divides.	Web Forum Applications in the Technological Landscape	The Impact of Web Forum Applications on Communica tion
11	[1] Shahid, J., et al., (2022), [2] Hendricks (2019), [3] Moein (2023), [4] Bhatia (2019)	[1]A Comparative Study Of Web Application Security Parameters: Current Trends And Future Directions., [2]10 Essential Steps To Improve Your Website Security., [3]Scalability And Performance: The Pillars Of Modern Web Applications. Medium.,	Web Forum Applications in the Technological Landscape	Security and Scalability of Web Forum Applications

		[4]What Are Scalable Web Applications And How They Work. Business Of Apps.		
12	[1]Quinn (2023)	[1]The Role Of User Interface In Web Design And Web Development.	User Experience and Engagement in Web Forum Applications	Importance of User Interface Design for Web Forum Applications
13	[1] HotJar (2022), [2] Pandey (2023), [3]Userpilot (2023), [4]Zaza (2024)	[1]What Is User Engagement And How Can You Improve It., [2]Interactive Walkthroughs: Benefits And Examples., [3]What Is User Engagement., [4]5 Best Practices To Increase User Engagement.	User Experience and Engagement in Web Forum Applications	Techniques for Enhancing User Engagement
14	[1] Codacy Quality (2021), [2] Kelley (2024), [3]O'Connor (2017), [4] Codacy Quality (2021), [5]Nielsen & Norman (2024)	[1] An Exploration Of The Iso/Iec 25010 Software Quality Model., [2] What Is Cybersecurity And Why It Is Important., [3] What Is Interoperability, And Why Is It Important., [4] An Exploration Of The Iso/Iec 25010 Software Quality Model., [5] The Definition Of User Experience (Ux).	Project Evaluation	Functionalit y, Security, Interoperabi lity, Reliability, and User Experience

METHODOLOGY

The study used the Agile Software Development Life Cycle (SDLC) for iterative development. Tools and technologies used include HTML, CSS, JavaScript, and Vue.js for the front end, which are some of the most commonly used languages for this type of project for academic or personal use, and Python Django with MongoDB for the back end, because the researchers had previous knowledge of these backend technologies. The platform includes key features such as a multilingual forum, itinerary builder, achievement system, and budget planner. Evaluation involved both expert and end-user testing. Survey instruments based on the Likert scale and ISO 25010 were distributed to 132 respondents, and the results were analyzed using mean score interpretation and qualitative feedback.

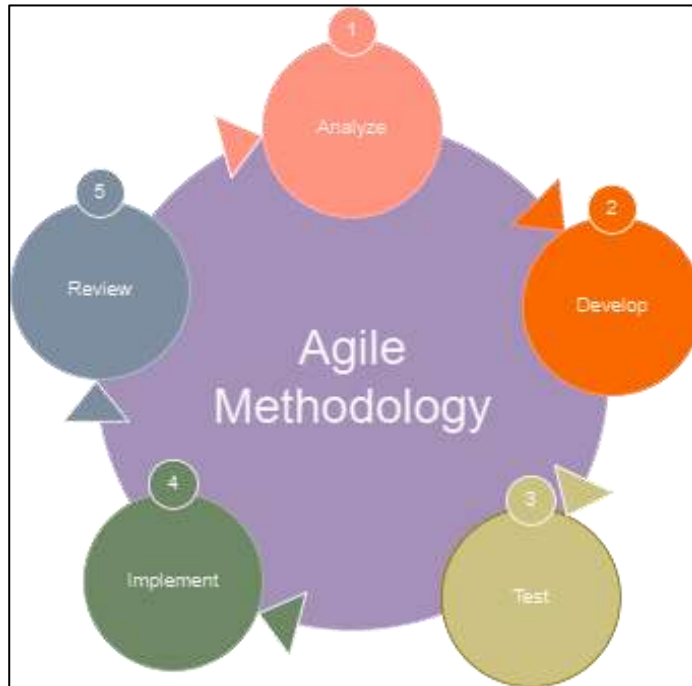


Figure 1. Agile Methodology for the Development of CulturaLink

Analyze

The initial phase of developing *CulturaLink* involves analyzing essential development tools such as programming languages (HTML, CSS, Vue.js), frameworks (Tailwind), environments (VS Code), databases (MongoDB), and version control (Git). This step also includes outlining system features and modules to ensure a collaborative, efficient, and high-quality development process (Laoyan, 2024).

Develop

In this phase, key modules and features are built using HTML, CSS, JavaScript, Vue.js, Tailwind, and Python to enhance interactivity and user experience. A modular approach ensures scalability and allows seamless integration of future updates (Simplilearn, 2024).

Test

The testing phase ensures that *CulturaLink* functions reliably across platforms, meeting requirements for usability, functionality, security, and interoperability. Surveys are also conducted to assess the system's effectiveness before deployment (Laoyan, 2024).

Implement

This stage involves deploying *CulturaLink* to a hosting platform, making it accessible to users worldwide. It marks the transition from development to a live system that promotes global cultural engagement (Laoyan, 2024).

Review

The final step gathers user feedback to identify improvements for enhancing user experience, initiating a new cycle of development and refinement (Simplilearn, 2024).

Use-Case Diagram

The use-case diagrams shown are the visual representations of *CulturaLink*'s core functionality, designed to encourage global cultural exchange. They represent how different categories of users will interact with the site, highlighting significant activities done in handling personal profiles, creating and sharing content, interacting with others' media, and participating in community-driven events. Beyond the technical drawings that are presented,

these diagrams are crucial in conveying the purpose and functionality of CulturalLink. They are able to show how the site facilitates users to interact with individuals from different cultural backgrounds. Through these interactions, people are encouraged to share their unique perspectives, discover new cultural insights, and engage in productive discussions. This visual structure not only explains the system's design but also reinforces CulturalLink's mission of providing a vibrant, inclusive space for substantial cross-cultural conversation.



Figure 2. Use Case Diagram for CulturalLink

Context Flow Diagram

This context flow diagram of CulturalLink encapsulates the relationship between entities and the system. The user entity inputs usual information such as user credentials for logging into the system, search filters when looking for certain posts, posting, commenting, etc., and the system returns the posts, itineraries, and comments made by other users or the current user. Apart from the user entity, we also have the APIs used by the system, such as Google Maps and the currency changer, which are vital aspects of the system especially in the itinerary module.

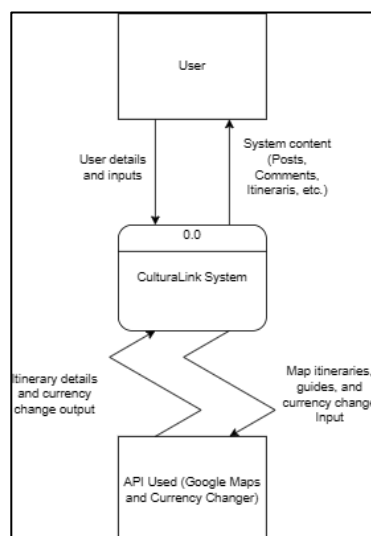


Figure 3. Context Flow Diagram for CulturalLink

Flowchart

“CulturaLink: A Multi-Platform Web Forum Application for Global Cultural Exchange” is designed to connect people from diverse backgrounds through a multi-platform web forum. Users create profiles, explore discussion threads covering topics like language, art, and traditions, and engage in respectful dialogue. The platform also hosts virtual events, offers multilingual support, and encourages continuous improvement based on user feedback. The flow of the system goes along the lines of:

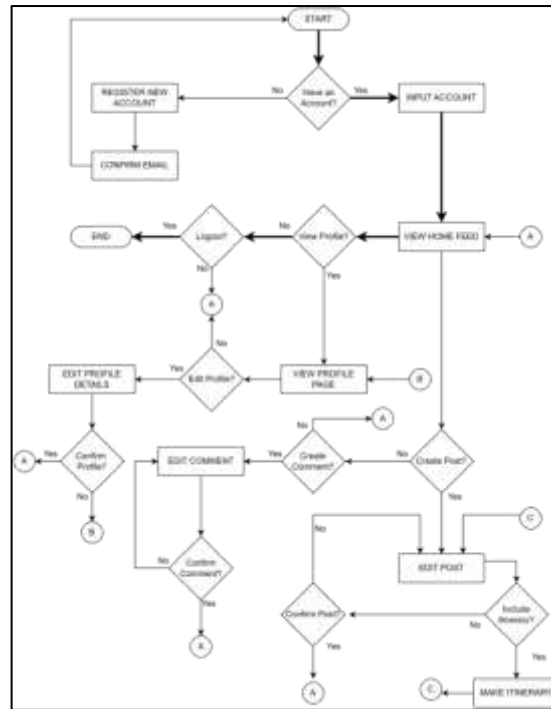


Figure 4. Flowchart for CulturaLink

RESULTS

Key findings indicate that the platform effectively addresses the need for a centralized space for cultural engagement and travel information by allowing users to share narratives about history, culture, and food while planning itineraries. User experience evaluations yielded a strong overall average rating of 4.37, indicating high satisfaction in terms of accessibility, responsiveness, and user engagement. Expert assessments affirmed the platform's effectiveness in facilitating cultural exchanges, scoring an impressive .76 for its intended functions. Limitations were noted regarding user responsibility in verifying shared cultural information, highlighting the necessity for critical engagement among users.

Table 2. Overall Analysis of End-Users & Experts Evaluation

CATEGORY	END USERS MEAN	END USER PERCENTAGE (0.78030303)	EXPERTS MEAN	EXPERTS PERCENTAGE (0.21969697)	OVERALL	REMARKS

Functionality	4.31	3.37	4.32	0.95	4.32	Strongly Agree
Security	4.35	3.40	4.27	0.94	4.34	Strongly Agree
Interoperability	4.24	3.31	4.42	0.98	4.29	Strongly Agree
Reliability	4.31	3.37	4.23	0.93	4.30	Strongly Agree
User Experience	4.37	3.41	4.48	0.99	4.40	Strongly Agree
AVERAGE	4.32	3.37	4.35	0.96	4.33	Strongly Agree

The evaluation used a five-point Likert scale to gather feedback from end users (78.03%) and experts (21.97%) on key categories such as Functionality, Security, Interoperability, Reliability, and User Experience. By averaging responses separately and factoring in the participant ratio, the analysis provided a balanced view of system performance. Both groups showed strong agreement across all categories, with overall mean scores of 4.32 for end users and 4.35 for experts. User Experience received the highest ratings (4.37 and 4.48), while Interoperability had the lowest (4.24 and 4.42), indicating a generally positive reception with minor variations in perspective.

DISCUSSIONS

The study assessed five key aspects of the system—Functionality, Security, Interoperability, Reliability, and User Experience—achieving an overall mean score of 4.33. Functionality received a rating of 4.32, with end-users highlighting the system's effectiveness in cultural exchange functions and experts emphasizing efficiency and availability. Security was rated at 4.34, reflecting users' confidence in protection against malicious activities, though experts were slightly more critical.

Interoperability scored 4.29, with end-users appreciating device accessibility and experts valuing seamless integration with third-party systems. Reliability earned a 4.31 rating, indicating general satisfaction, with experts noting consistent performance. User Experience

was the highest-rated aspect at 4.40, with users commending responsiveness and experts praising adherence to accessibility standards.

The minimal variance between end-user and expert ratings across these aspects suggests a consensus on the system's strengths and areas for improvement. Overall, the system demonstrates robust performance, meeting established standards and user expectations.

CONCLUSION AND RECOMMENDATIONS

The objectives of the CulturalLink project have been successfully met, guided by a thorough development process and detailed analysis. To ensure that CulturalLink's functionalities align with the needs of its users, we evaluated the system through responses gathered from 132 total participants, including both 103 number of end-users and 29 number of expert users. Using Cronbach's Alpha, we assessed the reliability of our evaluation metrics, which confirmed a high level of data consistency, reinforcing the credibility of the feedback and

outcomes.

The overall conclusions drawn from this evaluation are as follows:

1. Researchers carried out a thorough analysis regarding the architectures required for the development of a web application for CulturaLink. By carefully selecting a tech stack—HTML, CSS, JavaScript, Vue.js, Python, Django, and MongoDB—we established a solid foundation for the application, ensuring good performance and ease of maintenance.
2. CulturaLink’s modules and features were developed to enhance usability and functionality, tailored specifically to support a seamless cultural exchange experience. Each module was tested to ensure high responsiveness, intuitive navigation, and accessibility across devices.
3. The system underwent testing across several key sections: interoperability, reliability, security, usability, and functionality. These evaluations confirmed that CulturaLink meets the project’s core requirements, supporting both the technical expectations and the needs of users.
4. CulturaLink was deployed on Digital Ocean as the selected web hosting platform, ensuring global accessibility for users. This successful deployment reflects our commitment to making CulturaLink a globally available tool for fostering meaningful cultural interactions. To help improve the current system, the researchers have some minor recommendations. It goes as such: Use tech that allows for wider access to different libraries, like PHP’s Laravel, for easier implementation. Invest in a good web hosting service and a capable server for better load handling. The implementation of a live messaging or calling function into the system might improve the interaction and communication between users. Developing an in-app sharing function fosters more user engagement within the system. In conclusion, these achievements indicate that CulturaLink is a reliable, secure, and user-friendly platform that meets its intended goals of promoting cultural engagement and understanding on a global scale.

ACKNOWLEDGMENTS

The authors wish to acknowledge a multitude of individuals for helping make this paper a reality. Special thanks to St. Dominic College of Asia and all the respondents who participated in the evaluation, from the end users to the expert users. Our gratitude also goes out to Mr. Mervin Babiano, for being there the entirety of the project to help guide us and set us in the right direction. To the faculty advisers and technical mentors for their guidance and support throughout the development of this project. The researcher’s utmost thanks for everyone who helped make this project come to fruition, it would not have been possible if it weren’t for the help of so many people.

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