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EVENT AUTOMATION

STREAMLINING SUCCESS: NAVIGATING THE OPPORTUNITIES AND CHALLENGES OF EVENT AUTOMATION.

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Abstract - *Automation is changing consumer expectations and industry standards in the quickly developing field of mobile app development. This shift affects industries including banking and healthcare in addition to technology. The global desire for automated functionality is causing a huge shift in the mobile app environment. Automation is becoming essential for several reasons, such as enabling smooth user-device interactions and enhancing app security through real-time anomaly detection. User comfort is being enhanced by the increasing interconnection of gadgets, apps, and sensors. Moreover, the goal of integrating remote monitoring and intelligent real-time analytics is to greatly improve the quality of customer support. But as automation spreads, it becomes clear that skilled labor is needed. While startups and smaller agencies could find it difficult to make this transition, larger companies with highly skilled workers can adopt smart technologies with ease. For organizations to effectively adjust to these changes, ensure a seamless transition, and maximize the benefits of automation, skilled personnel is essential. The continuous expansion and integration of automation are intimately linked to the development of mobile apps, which hold the potential to improve productivity and creativity in the digital sphere. In conclusion, automation plays a significant role in the mobile app development sector by providing improved user experiences, simpler workflows, and higher productivity.*[1]

Keywords **– automation, event, data integrity, analysis, unique emotional narratives.**

I. INTRODUCTION

PREPARATIONS TO POST-EVENT ANALYSIS:

The use of technology, automation, and artificial intelligence (AI) has significantly changed the course of event planning. Automation is a driving force behind this shift, freeing up organizers, venues, and stakeholders from the laborious and repetitive chores that consume their time. This allows them to focus on the strategic and creative aspects of events. Handwritten guest lists are a thing of the past; in the modern industry, smooth digital experiences are paramount. Although many tools and resources have been used, event planning has reached previously unheard-of heights thanks to the skillful application of technology, ushering in a new era of creativity and productivity in the industry.

Automation has a wide range of applications in the field of event planning, including participation management, budget tracking, marketing campaigns, and day-of coordination. We explore the critical responsibilities that automation plays in effectively overseeing all aspects of event execution, including RSVP tracking and smooth cooperation. This study attempts to offer new insights by illuminating cutting-edge technology and solutions that are common in business. It looks at how automation technologies might speed up the furnishing of real-time data on availability, pricing, and contract changes. It also emphasizes how crucial cost estimates and automated spending monitoring systems are to the development of successful budget management techniques. The paper aims to provide insight into the possibilities of automation in event planning by examining these subtle elements.[2]

Effective marketing and promotion are essential to an event's success, and automation boosts these activities' effectiveness. On the day of the event, coordination must be flawless, and automation plays a significant role in ensuring that everything runs smoothly. The study examines how automated check-in and registration technologies, together with real-time warnings and communication, all contribute to a seamless event day experience.[4]

Automation also has benefits that continue after the event has ended. Continuous improvement requires post-event analysis and feedback gathering, and this article explores how automation technologies might expedite these procedures while offering insightful information for future event design.[3]

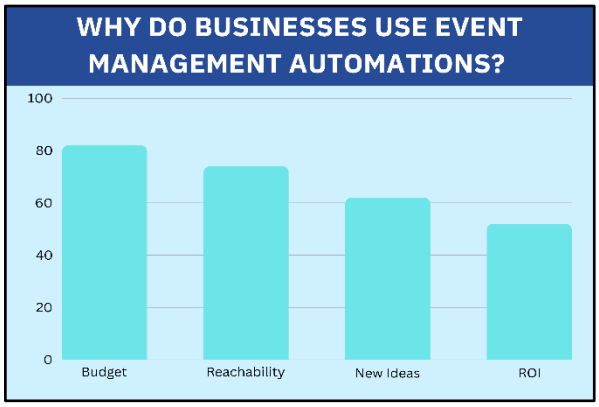

Fig -1: Graph of Reasons for Businesses Using Event Automation

II. ALIGNMENT OF EVENT AUTOMATION WITH FLEXIBLE AUTOMATION PARADIGM

In total there are 4 different levels of automation. In order from most general to most specific, they are:

A. Fixed Automation:

- Fixed automation systems, also known as hard automation, are designed to complete a single set of tasks repeatedly. Fixed automation systems typically are used for discrete mass production or continuous flow systems.
- An example of a fixed automation system is an automated conveyor belt in the auto manufacturing industry that moves objects with minimal effort, increasing efficiency.[5]

B. Programmable Automation:

- Programmable automation systems are controlled by commands delivered by a computer program. Because of this, the automated processes can vary based on the instructions sent to the computer by the designer's code.
- Programmable automation is commonly used in settings where similar items are produced using the same automated steps and tools.
- For example, paper and steel rolling mills use the same steps to create many different types of products.[13]

C. Flexible Automation:

- Flexible automation, also known as soft automation, is typically used in batch processes with a variety of products. Each piece of equipment is given instructions for a computer operated by a human, so changing code can be delivered to the computer, allowing for more flexible production.
- The primary advantage of flexible automation is that the product changeovers occur quickly and automatically because they are conveyed by the control system, eliminating the extra time required to reconfigure the equipment in between batches.
- Industries that use flexible automation include textile manufacturing, food processing or paint manufacturing.[1]

D. Integrated Automation:

- Integrated automation systems involve totally automating manufacturing plants with minimal human involvement.
- Integrated automation can be used with continuous process manufacturing and batch process manufacturing.[14]

Flexible Automation is built for a variety of batch processes, and event automation is in line with that. When it comes to event planning, computer systems are used to provide instructions, making it possible to quickly adapt for different jobs and situations.

What sets it apart from permanent and programmable automation is its flexibility in accommodating changes in attendance preferences, logistical needs, and details. Event automation fits into the flexible automation paradigm because of its capacity to swiftly adjust to changing needs, which is ideal given the dynamic and ever-changing nature of event preparation. [1]

III. THE MULTIFACETED PURPOSE OF EVENT AUTOMATION

The purpose of event automation is to streamline and enhance various aspects of event planning and execution using technology, software, and automated processes. Event automation serves multiple purposes, contributing to efficiency, precision, and an overall improved experience for event planners, organizers, and attendees. Here are key purposes of event automation:

A. Efficiency and Time Savings:

When data entry, RSVP (répondez s'il vous plait) tracking, and guest list management are done automatically, manual, repetitive processes associated with event planning are eliminated. Event planners can now concentrate on more strategic and innovative elements of the event since they have saved a substantial amount of time.[12]

B. Enhanced Accuracy:

When manual processes are automated, the possibility of human error is decreased. Automated RSVP tracking systems, for instance, minimize errors in guest count and related logistics by providing precise and up-to-date updates on visitor answers.[13]

C. Seamless Guest Management:

Efficient participant management is made possible by automated technologies, which let organizers take care of things like sending invitations, getting responses, and sharing updates in a smooth manner. A more engaging experience is enhanced by customized communication that is based on the preferences of the guests.[13]

D. Budget Management:

Using automated cost tracking systems, event automation helps in monitoring and controlling spending. Real-time budget monitoring allows planners to spot areas of overspending and make necessary adjustments.[12]

E. Targeted Marketing:

Event organizers can send customized marketing messages and segment guest lists thanks to automation. This raises the possibility of attendance by ensuring that promotional content reaches the appropriate audience.[11]

F. Efficient On-the-Day Coordination:

Automated registration and check-in systems expedite admissions, cutting down on wait times and improving visitors' experiences in general. Alerts and real-time communication assist organizers in quickly resolving any problems.[11]

G. Post-Event Analysis and Feedback:

The process of gathering post-event feedback using automated survey forms is made easier by automation. The information offered by this data helps the organizers evaluate the event's performance and identify areas for development.[13]

H. Predictive Analytics and Insights:

The future of event automation involves the use of predictive tools to foresee attendee behaviour, enabling data-driven decisions for enhanced attendee experiences. Analytics provide insights into attendance rates, engagement levels, and return on investment (ROI).[11]

To put it briefly, Event planners may increase productivity, accuracy, and attendee pleasure by utilizing technology and automated solutions, which will ultimately result in successful and unforgettable events.[12][11]

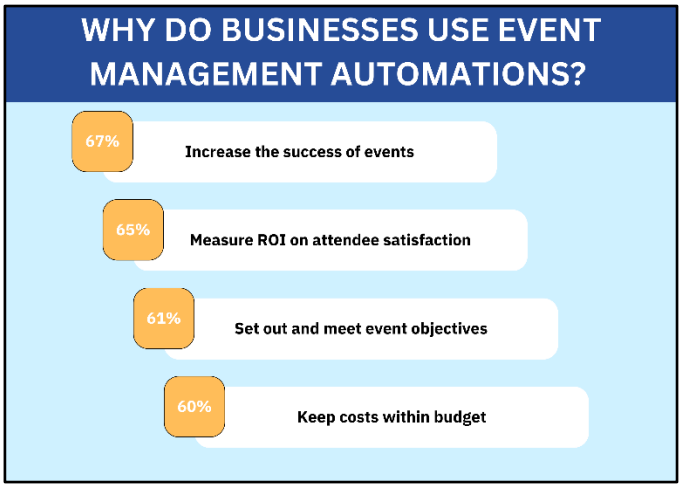

Fig -2: Reasons for Using Event Automation

IV. HARMONIZING MODELLING AND CONSTRUCTION PROCESSES

A. Modelling

Use case diagrams (UCDs) and data flow diagrams (DFDs) are essential tools for modelling an event automation application since they help to capture the functions and data flow of the program:

1. Use Case Diagram:

Use Case Diagrams are a useful tool for visualizing the different ways that users and the event automation system interact. Use examples are used to illustrate important features including guest management, RSVP tracking, venue selection, budget management, marketing, and day-of coordination. The foundation for development is this visual depiction, which facilitates comprehension of the user-system dynamics.[8]

2. Data Flow Diagram:

Data Flow Diagrams which show the flow of data within the event automation software, complement UCDs. They demonstrate the information flow from inputs, such as guest information and event needs, through various processing steps and outputs, like budget reports and finished guest lists. When determining data sources, destinations, storage locations, and the procedures in charge of data transformation, DFDs are essential.[8]

When combined, these modelling approaches provide a thorough understanding of the event automation application. Use case diagrams put the user's interactions front and centre, making sure the program properly satisfies their demands. However, data flow diagrams guarantee the smooth transfer of information throughout the application by illuminating the underlying data operations.

The architecture of the app must be carefully considered to ensure user pleasure and to optimize data management for successful event automation.

Tools Used:

A. Expo

Expo serves as the foundation for React Native apps and offers a range of services and tools to make cross-platform app creation and deployment easier. Expo makes the modelling step easier by providing a wealth of UI design libraries and components, expediting the development process, and facilitating rapid iteration.[13]

B. React Native

A JavaScript framework called React Native is used to create native mobile applications. It enables developers to create components with React, resulting in quicker development cycles and cross-platform code reuse. During the modelling stage, React Native is essential for creating dynamic and responsive user interfaces. Because of its component-based architecture, different app functionalities may be modelled effectively and modularly.[7]

C. Postman

Designing, testing, and documenting APIs is made easier using Postman, an API development and testing platform. The event automation application uses Postman to model and test the APIs. It makes sure that all the components communicate with each other smoothly and in accordance with the required standards.

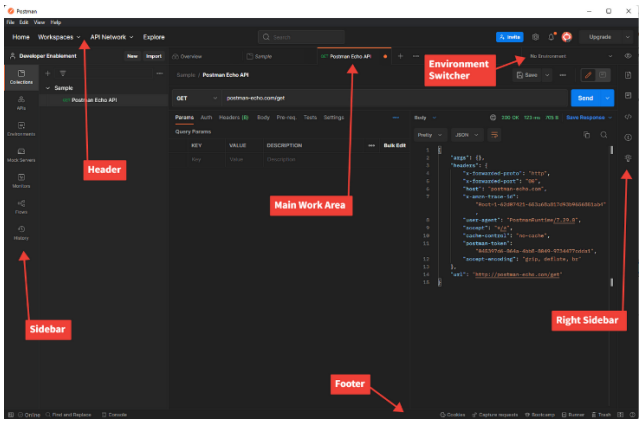

Fig -3: Postman

D. Google APIs

The app is enhanced with significant capabilities by the range of services that Google APIs offer, such as cloud services, authentication, and maps. Google APIs are essential to modelling because they specify how an application communicates with Google services. This entails using cloud services for data storage, leveraging authentication for safe access, and integrating Google Maps for venue identification.[12]

E. TabNine

As developers' type, TabNine, an AI-powered code completion tool, anticipates and suggests code snippets to improve efficiency. By offering insightful code recommendations, TabNine expedites the modelling stage and minimizes the time and effort needed to code intricate features.

F. Cursor

Cursor Code Editor is an efficient code editing tool with a wealth of features, including collaborative tools, autocompletion, and syntax highlighting. By giving developers a strong and cooperative environment for effectively developing, editing, and managing code, Cursor Code Editor enhances the modelling stage.

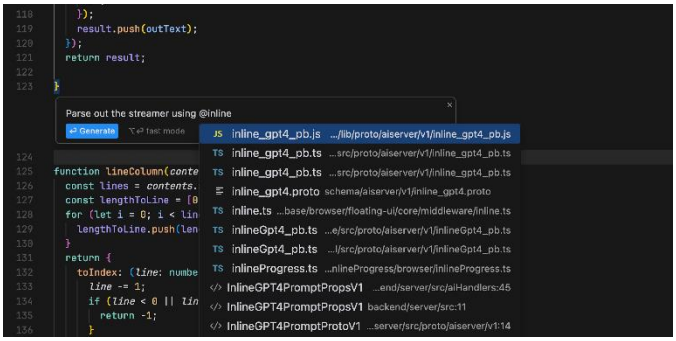

Fig -4: Cursor Code Editor

By combining Expo, React Native, Postman, Google APIs, TabNine, and Cursor, the development team ensures a robust, efficient, and feature-rich event automation app. These tools collectively contribute to the successful modelling of the app, setting the stage for a seamless and user-friendly event planning experience.

B. Construction

UI/UX Design: Seamless Experiences

User Interface (UI) and User Experience (UX) design are carefully considered during the event automation app's creation process to guarantee a smooth and enjoyable user experience across multiple screens. This is a thorough examination of the fundamental screen design elements.

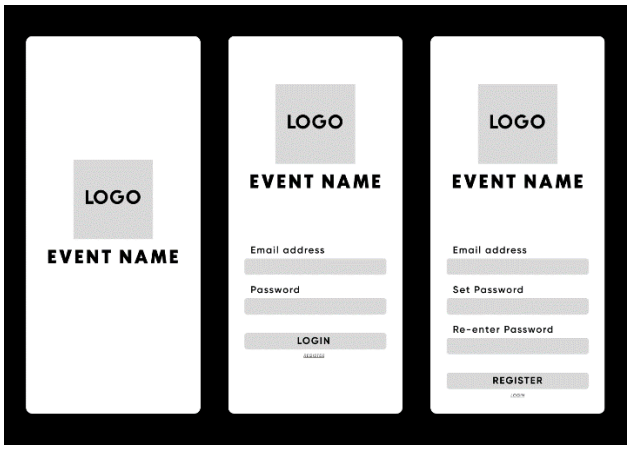

Fig -5: Login Screen

A. Login/Signup Screen

The email address, username, and password input forms are placed in convenient locations on the login screen, making it easy for users to navigate. The required information is requested in a well-organized form with visually appealing yet elegant colour schemes on the signup screen. User behaviours are simplified by having separate submit and navigation buttons. Real-time validation, tooltips, and guided onboarding processes make it simple for users to complete the signup process. Improved user experience can be achieved through progressive disclosure and visual cues.[6]

B. Events Screen

The events panel displays event titles, thumbnails, and synopses in a dynamic card-based arrangement. The accessibility of filters and sorting options facilitates effective event discovery. An immersive exploration of available events is made possible by intuitive navigation, seamless transitions, and sensitive touch interactions. Updates on event availability in real time improve user engagement.

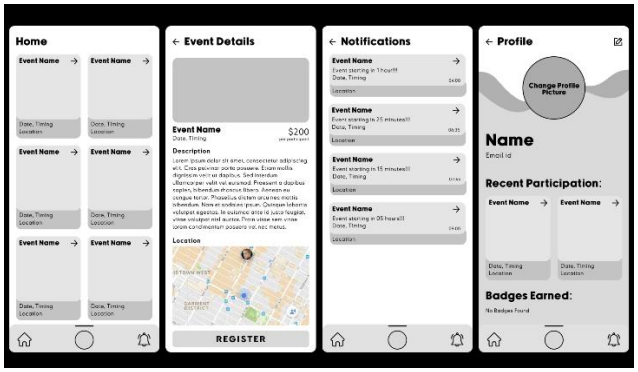

Fig -6: Events Screen

C. Event Details Screen

The screen including event photos, schedules, and pertinent information has an eye-catching design. Simple navigation components make exploration simple. Swipe-able galleries and foldable sections are examples of user-friendly gestures that improve the user's ability to explore extensive event information. There are thoughtfully positioned calls-to-action for registration.

D. Event Registration Screen

An intuitive form on the registration screen collects all relevant participant information. An easy-to-use form filling interface, contextual help options, and real-time validation all help to ensure a seamless registration process. The payment procedure is made simpler with a simple design that offers alternatives for payment methods and clear transaction reports. The user experience when paying is enhanced by allowing in-app comments on transactions that are successfully completed and by providing open error handling. Bright confirmation messages on the event registered screen praise the user's successful registration. Participation is improved overall when sections or activities are transitioned smoothly.[10]

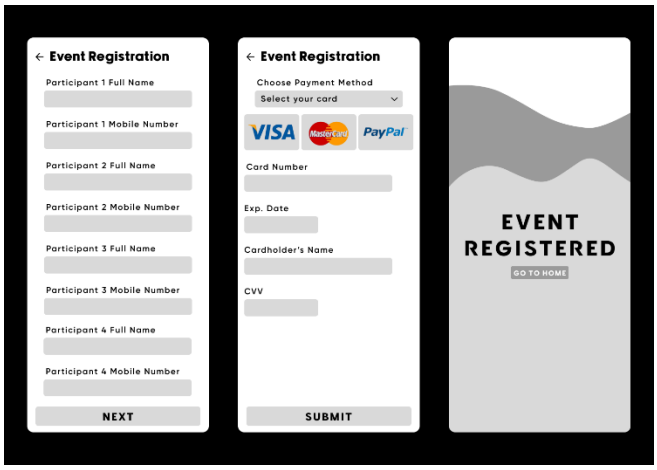

Fig -7: Event Registration

In conclusion, great effort has been taken to balance utility and aesthetics in the UI/UX design of the login, signup, events, event information, event registration, payment, and event registered screens. During the creation process, user-centric design concepts are prioritized to guarantee a straightforward, visually appealing, and pleasurable experience for users of the app throughout their event planning journey.

Working with respect to Google APIs [7]

The integration of the Google Sheets API in the event automation app serves as a pivotal component, offering a robust mechanism for storing, retrieving, and managing

critical event-related data. Here's an in-depth exploration of its functionalities:

A. Secure Initialization and Authentication

When the application launches or interacts with the user, it initializes the Google Sheets API. This entails creating a secure link between the app and the specified Google Sheets document, which acts as the main location for event data. This entails a safe authentication procedure that verifies the identity of the app before allowing access to the Google Sheets document, usually via OAuth 2.0.

B. Data Storage and Organization

Data is arranged in rows and columns within the Google Sheets document, which functions as a structured database. The document may contain separate sheets for different areas of event preparation, like RSVP answers, guest lists, budget information, and more. When entering or changing data, the app formats the entries in the Google Sheets document using the established structure. This guarantees uniformity and promotes effortless retrieval.

C. Real-Time Data Updates

Any changes you make to the data in the Google Sheets document automatically update the app. More complex setups may make use of webhooks or triggers, which would enable the app to get alerts automatically whenever something changes in the Google Sheets, eliminating the need for regular manual checks.

D. Security Measures

By ensuring that data is encrypted during transmission between the app and Google Sheets, the API protects confidential event data from being accessed by unauthorized parties. Through the app's login credentials, access to the Google Sheets document is restricted to individuals who possess the necessary authorization.

V. PURPOSE OF STUDY

The project's goal is to investigate the complex effects of event automation on the planning and carrying out of various events. The study highlights how event automation may coexist with the dynamic and multifaceted nature of event planning, with a focus on how it aligns with flexible automation concepts. The study places significant emphasis on clarifying the potential benefits of event automation, including increased efficiency, streamlined workflows, and customized experiences.

It goes over the many uses and advantages of this technology in detail, covering important areas including guest management, RSVP tracking, venue selection, budget management, marketing initiatives, and day-of coordination. The research emphasizes how the use of automation results in more smooth and effective execution of events through real-world examples and case studies. It highlights how the field of event automation has changed because of technology breakthroughs and projects an expansion of automation's possible uses in the future.

Examining automation systems' flexibility in real-time settings, the research highlights how quickly they can adjust to changes. Overall, the project's goal is to give a thorough understanding of how event automation, with its dynamic capabilities, not only solves the problems facing event planning today, but also paves the way for a more technologically advanced and flexible future for the events sector.[9][5]

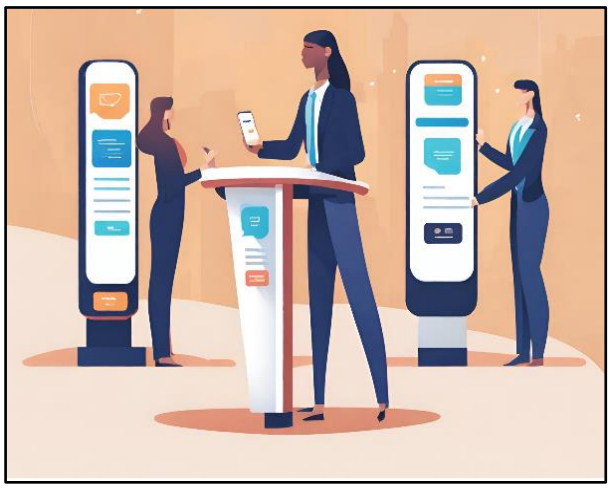

Fig -8: Automation in Action

VI. CONSIDERATIONS

A. *Risk of Failure*

Failure risk always looms over automation tools that could result in project delays and decreased productivity. [10]

B. *Continuous Maintenance*

Automation tools and processes will require continuous maintenance and monitoring to ensure they are up-to-date and functioning without hiccups.

C. *Lack of Quality Supervision*

Automation tools don't offer the level of supervision of a human. Hence, there are chances that automation can provide unreliable results in cases where human intervention is needed.[10]

D. *Limited Scope*

Due to their limited understanding of the context of software development, automation tools may not consider all the factors in making decisions. [10]

VII. CONCLUSION

"You're either the one that creates the automation or you're getting automated." - Tom Preston-Werner

In conclusion, the exploration of the event automation application, it becomes evident that the integration of advanced technologies significantly enhances the landscape of event planning. This innovative application, built on Expo, React Native, Postman, Google APIs, Tabnine, and Cursor Code Editor, reflects a commitment to efficiency, precision, and a user-centric approach.

The modeling phase, incorporating Use Case Diagrams and Data Flow Diagrams, showcases the application's adaptability to diverse event scenarios. Moving into the construction phase, particular attention to UI/UX design ensures a seamless and visually pleasing journey for users across login, signup, event details, registration, payment, and viewing registered events.

Google Sheets API, employed for data storage and retrieval, streamlines information management, while Maps API adds a spatial dimension by facilitating venue location sharing. These integrations, coupled with Expo's capabilities, establish a robust foundation for the app's functionality.

However, there are several difficulties along the automation path. Maintaining continuous performance requires constant maintenance, and it's important to find a balance to prevent relying too much on technology. The necessity of flexibility in the face of changing event planning requirements is underscored by the potential rigidity seen in established systems.

The event automation application, in its most basic form, is the union of technology innovation with user-centered design, providing event planners with an all-inclusive tool to optimize workflows, boost productivity, and create unforgettable event experiences. This application demonstrates the industry's dedication to innovation as the automation landscape develops, guaranteeing that upcoming events are not only well-planned but also dynamic, efficient, and enhanced by the potential of automation.[14][10]

VIII. REFERENCES

[1] *RichestSoft, "The Impact of Artificial Intelligence (AI) on Mobile App Development," Oct. 31, 2023. https://www.linkedin.com/pulse/impact-artificialintelligence-ai-mobile-app developmentdxscc#:~:text=Incorporating%20AI%20into%20mobile%20app,success%20in%20a%20competitive%20marketplace*

[2] *Z. Laliwala and S. Chaudhary, "Event-driven Service-Oriented Architecture," 2008 International Conference on Service Systems and Service Management, Melbourne, VIC, Australia, 2008, pp. 1-6, doi: 10.1109/ICSSSM.2008.4598452. keywords: {Business; Service-oriented architecture; Engines; Web services; Standards; Computer architecture; Monitoring},*

[3] *B. Singh, X. Han, Z. Wu, V. I. Morariu and L. S. Davis, "Selecting Relevant Web Trained Concepts for Automated Event Retrieval," 2015 IEEE International Conference on Computer Vision (ICCV), Santiago, Chile, 2015, pp. 4561-4569, doi: 10.1109/ICCV.2015.518. keywords: {Videos; Detectors; Visualization; Training; Calibration; Tires; Computational modeling},*

[4] *M. A. Afanasev, M. S. Kliachin and D. V. Demidko, "Analysis and Automation of Business Processes of Mass Events Using Situational Management Methodology," 2018 IEEE International Conference "Quality Management, Transport and Information Security, Information Technologies" (IT&QM&IS), St. Petersburg, Russia, 2018, pp. 299-303, doi: 10.1109/ITMQIS.2018.8525060. keywords: {Automation ;Information systems; Organizations; Planning; Databases; Kernel; event; management; situation; automation; adoption; approbation},*

[5] *L. J. Ekanayake, D. Ihalage and S. P. Abyesundara, "Performance Evaluation of Google Spreadsheet over RDBMS through Cloud Scripting Algorithms," 2021 International Conference on Computer Communication and Informatics (ICCCI), Coimbatore, India, 2021, pp. 1-7, doi: 10.1109/ICCCI50826.2021.9402432. keywords: {Structured Query Language;Relational databases;Writing;Internet;Planning;Reliability;Arrays; Performance Analysis;Google Apps Script;RDMBS;Spreadsheets;Algorithms},*

[6] *P. Afsar, M. Faizudheen, M. Jasim Anikkadan, P. Mohammed Rashad and U. Mohammed Shabeer, "Intelligent Event Finder and Management System," 2021 Fifth International Conference on I-SMAC (IoT in Social, Mobile, Analytics and Cloud) (I-SMAC), Palladam, India, 2021, pp. 1191-1195, doi: 10.1109/I-SMAC52330.2021.9640719. keywords: {Seminars;Filtering;Engineering profession;Conferences;Layout;Education;Indexes;Event; Finder;Promotion;Registration;Onboarding;QR Code;Artificial Intelligence;Machine Learning;Deep Learning;Hybrid Recommendation System},*

[7] *"Introduction · React native," Dec. 08, 2023. https://reactnative.dev/docs/getting-started*

[8] *"Comparison of diagramming tools." https://www.umsl.edu/~sauterv/analysis/f06Papers/Nitakorn/#:~:text=Unlike%20Flow%20Charts%2C%20Da*

ta%20Flow,and%20the%20relationships%20between%20them

[9] *P. Hathaiwichian, L. Siriwittayacharoen, A. Wongwachirawanich, and C. Ragkhitwetsagul, "Android application for event management and information propagation," 2014 Third ICT International Student Project Conference (ICT-ISPC), Nakhonpathom, Thailand, 2014, pp. 139-142, doi: 10.1109/ICT-ISPC.2014.6923236. keywords: {Java;Databases;Registers;Testing;Androids;Humanoid robots;android application;event management;QR code},*

[10] *Vlinkinfo, "Benefits of automation testing in mobile app development," VLink. https://www.vlinkinfo.com/blog/benefits-of-automationtesting/*

[11] *A. Chaturvedi, "15 Benefits of Automated testing in app development," Mar. 03, 2023. https://www.linkedin.com/pulse/15-benefits-automatedtesting-app-development-abhay-chaturvedi/*

[12] *"Google Sheets API Overview," Google for Developers. https://developers.google.com/sheets/api/guides/concepts*

[13] *"Expo documentation," Expo Documentation. https://docs.expo.dev/*

[14] *R. Weyers, "6 Types of automation [Benefits, Pros/Cons, Examples]," Conger Industries Inc. - Wisconsin's Material Handling Experts, Jan. 17, 2024. https://www.conger.com/types-ofautomation/#:~:text=Industrial%20automation%20is%20the%20application,industrial%20manufacturing%2C%20and%20other%20processes*