Department of Creative Arts and Digital Information

DATABASE IMPLEMENTATION WITH INTERACTIVE REPORTING FOR AMPUTEES FEDERATION OF NEW ZEALAND

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ABSTRACT

The Amputees Federation of New Zealand (AFNZ) faces challenges with manual data entry and spreadsheet-based record-keeping for its annual conference, resulting in errors, duplication, and limited accessibility. The project focuses on database system implementation using SQL Server and crafting interactive reports and dashboards with Power BI. Both tools belong to the Microsoft ecosystem, ensuring accessibility for a majority of users. The implemented enhancements promise to significantly elevate AFNZ's data management and decision-making capacities.

KEYWORDS: Database, amputees, data, sql, conference, report

INTRODUCTION

The Amputees Federation of New Zealand (AFNZ), a dynamic organization comprising eight regional societies and a combined membership of approximately 500 individuals, hosts a vital annual conference. Attendees, including members, executives, speakers, and sponsors, converge from diverse locations, totalling around 100 participants. The core objective is to deliver an exceptional and seamless service experience to all involved.

Presently, the organizational workload grapples with manual data entry into spreadsheets, extensive email communication with attendees, processing application forms, coordinating transportation, managing accommodations, offering dietary-specific meal options, handling payments, overseeing registration, and curating conference content.

Figure 1, project poster

These approach includes frequent errors in data entry, instances of duplicated data, limited real-time access to critical information, and inefficient data retrieval.

GOAL

To elevate workforce capabilities, enabling them to leverage the backend solution's full potential and streamline conference operations. This includes optimizing data storage, ensuring data integrity, and facilitating seamless data retrieval.

METHODS

- Agile

Agile practices guide the project management, ensuring flexibility, collaboration, and iterative development. 6 sprints were completed within the Agile framework. Each iteration involved planning, executing, reviewing, and adapting phases, aiming to deliver a potentially shippable product increment.

- Design Thinking

Design Thinking is a human-centered, iterative approach that fosters innovative solutions by empathizing with user needs, defining problem statements, ideating possibilities, prototyping concepts, and continuously testing and refining ideas.

- MoSoW

MoSCow prioritized project and researched tasks based on Must, Should, Could, and Won't categories.

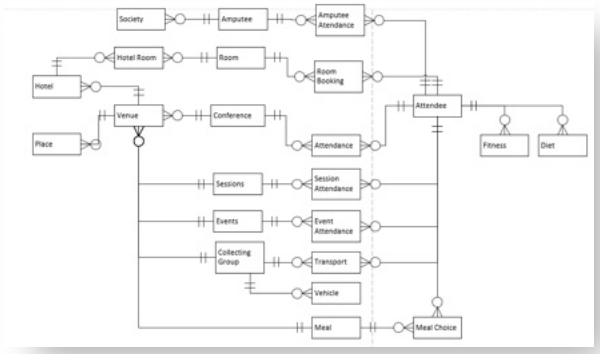

Figure 2, ERD

OUTCOMES

- Database Implementation:

Utilizing SQL Server provides robust data management capabilities, superseding manual entry and spreadsheets, enhancing organization and accessibility for the Amputees Federation of New Zealand.

- Data Migration:

Initially aimed at ensuring data integrity by migrating existing records, revised to simulate data, showcasing system functionality without reliance on specific datasets.

- Reporting Tool Integration:

Power BI's integration with SQL Server enables dynamic, insightful reports and customizable dashboards, aiding stakeholders in easy interpretation and meaningful insights.

- Interactive Reporting:

Leveraging Power BI empowers real-time data exploration, facilitating visually compelling reports and seamless updates for informed decision-making at AFNZ.

DISCUSSION

Key lessons highlighted the dynamic nature of project management, emphasizing the necessity for contingency planning. Prioritizing critical tasks laid a robust foundation, distinguishing between essential "must-have" elements and non-essential components, thereby clarifying project priorities.

The Agile approach facilitated step-by-step system development, allowing for easier testing and incremental changes.

Throughout the process, user-centric design remained a focal point, aligning with the Agile methodology's principles. Ultimately, the project's success stemmed from achieving critical objectives and navigating unforeseen obstacles with adaptability and foresight.