

Weddding (3D Wedding Venue Planning & Management System)

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TUNKU ABDUL RAHMAN UNIVERSITY OF
MANAGEMENT AND TECHNOLOGY
PENANG BRANCH

ACADEMIC YEAR
2025/26

Weddding (3D Wedding Venue Planning & Management System)

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A project report submitted to the
Faculty of Computing and Information Technology
in partial fulfillment of the requirement for the
Bachelor of Software Engineering (Honours)

Department of Computing and Information Technology
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Chapter 1

Introduction

1 Introduction

Weddings are a significant life event, marking the beginning of a couple's shared journey and celebrating their commitment with family and friends. As a once-in-a-lifetime moment, most couples aspire to make their wedding day perfect and unforgettable. However, planning such an event can be daunting and complex. From selecting the ideal venue and negotiating with vendors to crafting a cohesive design and meticulously tracking expenses, each decision carries weight and requires careful consideration. These challenges multiply when couples must juggle countless details, timelines, and changing priorities, especially for those without prior event-planning experience. Therefore, to ensure that a wedding unfolds seamlessly and fulfills every expectation, careful coordination and reliable tools are essential.

These challenges have offered an opportunity to technology to improve and streamline the wedding planning process in order to solve these challenges. With the involvement of technology, a comprehensive platform for wedding venue planning that integrates vendor management, budgeting tools, and 3D modelling can be introduced to simplify and entertain the wedding planning process. In this project, **Weddding** is introduced as the software solution for the wedding planning process. In contrast to conventional techniques like spreadsheets or 2D floor plans, which often struggle to accurately represent space or maintain organization, **Weddding** allows couples to visually design and experience their wedding venue layout in a virtual space. They can change layouts, drag and drop furniture and decorations, and see their ideas from various angles, which makes the design process more realistic, user-friendly and interesting.

Additionally, the platform centralizes the critical planning functions. On this platform, couples can manage tasks using checklists, track their expenses using graphic charts, and explore and book vendors directly through the system. This integration not only enhances planning efficiency but also gives couples the ability to maintain control and reduce reliance on external planners or several disconnected tools.

In a nutshell, **Weddding** aims to transform wedding planning into a more engaging, stress-free, and personalized experience by leveraging digital innovation to bring couples' visions to life with greater clarity and confidence.

1.1 Problem Statement

Weddings are one of the most important, meaningful and once-in-a-lifetime ceremonies for most people's lives, as it is a celebration of happiness, commitment, and the joining of two loving individuals or even two families into a lifelong partnership. However, planning a desired wedding is a time consuming and complicated process due to the factors involved in the planning process. A bad planning approach could lead to various consequences such as increasing stress, mental health issues and negative impact on relationships. (Clarity Clinic, 2020) According to recent research, it shows that 71% of couples feel pressure to build their ideal wedding which often leads to anxiety and overwhelming stress. (Jo, 2025) Other than that, another study stated that the pressure of wedding preparation could influence the physical and mental health of brides-to-be which might cause issues such as fatigue and health problems. It also showed that 96% of couples felt stress while planning their wedding, with the majority of them indicating that planning is more stressful than other major moments in their lives. (Siti Ahdah, 2024) The source of this stress encompasses social media comparison, cultural and family expectations, personal perfectionism, and fear of judgment from guests. Therefore, the planning process often becomes stressful and tormented in order to cope with those expectations.

1.1.1 Budgeting

One of the most significant challenges in wedding planning is managing the budget, as couples must ensure their wedding day expenses stay within their financial limits. According to a research done by WeddingWire in 2020, it reported that 54% of couples ended up increasing their budget during the planning phase, largely due to unexpected costs (WeddingWire, 2020). Similarly, a 2022 survey by The Knot revealed that nearly 47% of couples cited budgeting as their biggest concern in wedding planning (Lane Gillespie, 2023). These researches underline that the financial burden of weddings is considerable. In 2024, The Knot's survey involving 17,000 couples found that the average wedding cost reached \$33,000 (Schwahn, 2025).

In Malaysia, the average cost of a wedding ranges between RM50,000 to RM200,000, which is the highest in Southeast Asia. (nur, 2025) Professor Datuk Dr Nik Maheran Nik Muhammad from Universiti Malaysia Kelantan (UMK) revealed that inflation, soaring venue and catering costs, and societal pressures are the main factors causing the high costs of weddings. (Suresh, 2025) This phenomenon has contributed to the increase in bankruptcy cases among young Malaysians due to the rising wedding debts where the majority of them are relying on personal loans or credit cards. (nur, 2025)

Although financial pressure differs among individuals, these findings underscore the substantial financial commitment associated with traditional wedding ceremonies and receptions. This is especially burdensome for couples from middle- and lower-income groups. It further emphasizes the need for meticulous budgeting, particularly in the event of inflation and rising costs, to avoid serious financial repercussions such as debt and bankruptcy.

To ease the stress of wedding preparations, many couples might opt to hire a wedding planner to handle those troublesome planning and preparation tasks during the planning process. This decision can streamline the process and lighten their load, but it also comes with a cost. In 2023, the average cost of a wedding planner was \$2,100 (Johnson, 2025). In Malaysia, fees for hiring a wedding planner typically range from RM10,000 to RM30,000, depending on factors such as service level, planner experience, and event location (50Gram Wedding, 2023). It is important to note that this cost is in addition to other vendor expenses such as food, entertainment, and décor, which could potentially push the overall budget even higher.

As a result, some couples avoid hiring planners to cut costs and instead adopt a DIY (do-it-yourself) approach. While this method may lower expenses, it often presents its own difficulties, particularly for those without professional experience in event planning. Without the necessary skills, the planning process is likely to become stressful and time-consuming for the couples (Seasons 5, 2025). This added stress can take away from the joy of the engagement period and may lead to mistakes or oversights throughout the process. Managing a wedding budget is crucial, as poor financial planning can result in unnecessary expenditures. A study found that 28% of couples in the US incur debt due to wedding costs, with even higher debt levels reported in countries like Peru and Brazil, where 47% of newlyweds go into debt after their weddings (A., 2025).

1.1.2 Vendors Management

In addition to budgeting concerns, selecting the right vendors presents another major challenge in the wedding planning process, as it involves multiple aspects of the wedding such as the venue, decorations, catering, and floral arrangements. On average, couples may engage around 14 different vendors for a single wedding to bring their vision to life and ensure the event proceeds smoothly (M, 2024). With so many vendor options spread across various platforms, the process can quickly become overwhelming. This is because couples tend to find service providers that not only match their aesthetic preferences but also fit within their financial plans. To choose the right vendor, it requires couples to conduct thorough research, detailed comparisons, and consistent communication to avoid misunderstandings and ensure all elements come together cohesively. Among all vendor-related decisions, choosing a wedding venue is often the most stressful. As the central setting of the celebration, the venue influences many other aspects including décor, budgeting, and guest experience. Being a key vendor itself, selecting a venue involves evaluating its availability, size, and pricing. To make an informed choice, couples often need to conduct extensive research, request quotes, and perform site visits. These tasks add layers of complexity and can be time-consuming, potentially causing stress and dissatisfaction during what should be an exciting planning journey.

1.1.3 Informed Decision Making

Finally, making informed decisions is essential during every stage of the wedding planning process, as couples are required to make a multitude of choices where each of them can significantly impact the overall experience and outcome of their special day. These decisions include choosing the wedding theme and color palette to selecting the menu and entertainment. The process can become overwhelming, as couples must juggle their personal preferences and financial limitations while also considering the expectations of their families and friends. A 2023 study found that 71% of couples felt unprepared for the sheer volume of decisions involved in planning a wedding (Dunn, 2025). Poor decision-making may not only complicate the planning process but also lead to unresolved tensions that could strain relationships. Without proper guidance and effective planning tools, navigating these complex decisions can become a source of stress and conflict for many couples.

1.1.4 2-Dimension (2D) design

Currently, 2-dimension (2D) design or floor plan is a common option when it comes to designing the wedding venue. In this type of presentation, objects are represented in the horizontal and vertical dimension. The goal of it is to communicate and describe the scales, dimensions, and placements of the objects. However, it has several limitations as it couldn't convey all of the information effectively such as height, designs, and patterns (Sucheta Nigam, 2022), which makes it difficult for users to grasp the spatial feel of the venue. Besides, users are people who are not trained in the design field and hence they might not be able to interpret the technical drawings (Sucheta Nigam, 2022), which might lead to misunderstanding. According to a study, it found out that 2D presentations are able to present the technicality, functionality, and detailing of the concept or design, but not the materials and harmony. (Sucheta Nigam, 2022) This is important as users will fail to perceive the overall atmosphere and cohesion of the space. In order words, 2D visualizations are unable to describe how elements such as furniture, lighting, and textures work together to create a tranquil and unified environment.

1.2 Project Background

1.2.1 Market/Industry

The target market of **Weddding** falls within the rapidly expanding digital wedding solutions industry, which delivers wedding planning services through online platforms. The global wedding industry, valued at \$160.5 billion in 2020, is projected to reach \$414 billion by 2030, growing at a CAGR of 4.8%. (Samriddhi Chauhan, 2022). Specifically, the wedding planning segment alone is valued at \$23.11 billion and expected to surge to \$594 billion by 2033, growing at a CAGR of 12.8%. (News Channel Nebraska, 2025). These figures underscore not only the robustness of the wedding industry but also the untapped potential of technology-driven planning solutions.

The rise of digitalization is significantly shaping how weddings are planned today. Technology adoption is becoming a standard part of the planning journey where research shows that 70% of couples now use online wedding planning platforms (Belyh, 2025), with regional data showing 63% of Brazilian couples and 60% of Indian couples relying on wedding planning applications (Wells, 2023). These statistics clearly highlight the growing reliance on digital tools in organizing weddings, revealing a fertile ground for platforms like **Weddding**.

Weddding's primary target users are engaged couples, especially millennials and Gen Z aged 25 to 35, who are not only tech-savvy but also inclined to seek immersive, efficient, and stress-free planning experiences. By 2025, 86% of couples were reported to use planning apps, with virtual venue tours increasing by 35% indicating the further shift toward digital solutions (Belyh, 2025).

In addition to couples, wedding vendors including venues, florists, caterers, decorators, and entertainers also form a significant portion of the user base. These service providers often struggle with fragmented communication, limited digital presence, and inefficient client management. **Weddding** provides them with a unified platform to enhance their visibility, streamline booking processes, and improve collaboration with clients resulting in a mutually beneficial ecosystem.

Even with localized market estimates, the opportunity is evident. In Malaysia alone, there were 214,824 marriages in 2022 (Nizam, 2023). Assuming just 5% market capture from half of these couples using online tools, **Weddding** could serve over 5,000 couples annually, demonstrating clear feasibility and growth potential in an increasingly digital industry.

1.2.2 Proposed Solution

To address the various pain points and inefficiencies in the traditional wedding planning process, **Weddding** is introduced as a comprehensive digital platform that empowers engaged couples to plan and manage their special day with ease, efficiency, and control. **Weddding** centralizes all essential aspects of wedding planning including venue booking, 3D venue design, vendor collaboration, and budget tracking into a unified, user-friendly system. By integrating these core functionalities, the platform eliminates the fragmented communication and coordination challenges typically encountered by couples and vendors, thereby reducing the risk of mismanagement, overspending, and unmet expectations.

At the heart of **Weddding**'s innovation lies its role as a virtual event planner, bridging the gap between couples and wedding-related service providers. Unlike traditional wedding planners who charge additional fees for coordination and consulting services, **Weddding** provides an affordable, do-it-yourself alternative that allows couples to maintain full control over their wedding vision while minimizing costs. This makes it a particularly attractive option for cost-conscious users or those looking to avoid the high fees associated with professional planners.

One of the platform's key features is its 3D venue design and simulation module, which allows couples to visually experiment their wedding setup before making any financial or logistical commitments. Using 3D modeling technology, couples can customize venue layouts, themes, decorations, and furniture arrangements in a virtual space that reflects real-world dimensions and aesthetics. This immersive design tool offers a major advantage by providing a realistic preview of the final venue setup, helping couples avoid costly design mistakes or misalignments with vendors. It also encourages creativity, allowing users to try different configurations, from elegant ballroom arrangements to rustic outdoor setups, until they find the perfect combination that fits their vision. By visualizing the event in advance, couples can feel more confident in their decisions and communicate more effectively with decorators, florists, and venue managers.

In addition to venue design, **Weddding** simplifies one of the most time-consuming aspects of planning which is the vendor selection and management. The platform features an integrated vendor marketplace where service providers such as photographers, caterers, florists, musicians, and makeup artists can register and list their offerings. Couples can browse through a curated catalog of vendors based on categories, location, availability, and price range. Each listing comes with detailed descriptions, transparent pricing, service packages, real-time availability, and user-generated reviews, giving couples all the information they need to make informed decisions without the hassle of conducting extensive external research or scheduling multiple site visits.

What sets **Weddding** apart is the interactivity between the vendor catalog and the 3D venue design tool. Couples can insert virtual versions of vendor offerings such as floral arrangements, furniture setups, or lighting effects directly into their 3D venue. This allows users to preview how a specific vendor's products or services would look in the actual wedding environment, ensuring aesthetic alignment and helping them avoid visual surprises on the big day. The platform also offers in-app consultations, enabling couples to chat privately with vendors to clarify service details, ask questions, or negotiate customizations before finalizing a booking.

Another critical component of **Weddding** is its budget tracking and financial management system, designed to tackle one of the most common stressors in wedding planning which is overspending. Before beginning the planning process, couples can input their desired total wedding budget into the system. As they select vendors and design their venue, the platform dynamically calculates and displays real-time cost updates, ensuring that users are always aware of how their decisions impact the budget. This feature acts as a built-in financial advisor, sending alerts when spending approaches or exceeds budget thresholds.

To further enhance financial oversight, **Weddding** provides a detailed breakdown of expenses, categorized by vendors, design choices, and services. This transparency enables couples to identify high-cost areas, compare alternatives, and make data-driven adjustments to stay within their means. The platform also highlights potential cost-saving opportunities, such as early-bird vendor discounts, bundled packages, or off-peak venue availability. As a result, couples can make financially sound decisions without sacrificing quality or vision.

Overall, **Weddding** is designed not only to simplify the wedding planning process but also to empower couples with the tools and insights they need to create a meaningful and stress-free celebration. By combining immersive 3D design, efficient vendor collaboration, and smart budgeting tools, the platform positions itself as a game-changing digital solution in the growing online wedding services industry. Whether users are planning a grand, luxurious event or a simple, intimate gathering, **Weddding** delivers the flexibility, convenience, and support necessary to bring their dream wedding to life.

1.3 Project Objective(s)

There are a total of 4 objectives for the wedding venue planning system (**Weddding**). The objectives are as follows:

1.3.1 Visualize Wedding Venue Design

Currently, the majority of the wedding designs rely on 2D floor plans or past event references for couples to design their wedding, which are often limited in their ability to convey how the actual setup will look like. This method of designing wedding venues is not ideal as it may lead to incomplete or inaccurate visualizations, making it difficult for couples to make informed decisions on their wedding design. Therefore, **Weddding** integrates the 3D modelling technique with the intent to overcome this issue. With this technique, it helps couples to visualize and customize their wedding venue in a more realistic and immersive way. This feature allows couples to design their wedding venue layout, decorations, and themes before making any real-world commitments. They can freely experiment with various arrangements, themes, and decoration elements according to their ideas and try out every possibility in a virtual environment until their desired outcome is achieved without the fear of costly mistakes. Compared to the traditional 2D planning, this 3D approach is significantly more intuitive, efficient, and user-friendly. Using 3D modelling as the tool, couples could easily select elements like tables, chairs, flowers, and other decorations and immediately view the impact of their choices to the venue, instead of drawing a 2D floor plan that usually requires precise measurements, drawing skills, and extended planning time. Additionally, designing in the virtual environment provides couples an immersive and engaging experience on designing their wedding, which makes the wedding venue planning into an enjoyable and creative journey rather than a stressful task. This innovative approach empowers couples to take full control of their wedding vision with ease and confidence.

1.3.2 Simplify Vendor Selection and Management

Choosing the right vendors for the wedding is a crucial part of wedding planning, but it can also be one of the most tedious and time-consuming tasks. Couples must often juggle various factors such as budget constraints, personal preferences, and vendor availability. Traditionally, finding the suitable vendors that fulfill the couples need often requires extensive research, comparisons, and even physical visits, which is overwhelming and strenuous. One of the reasons for the establishment of **Weddding** is to solve these issues by introducing a vendor management system designed to streamline the entire selection and booking process. **Weddding** act as the middleman between couples and vendors where wedding-related service providers such as florists, catering, entertainment are allowed to register as a vendor and showcase their offerings on the platform. Couples can easily browse through this curated list of vendors instead of searching across multiple sources. At the same time, each vendor profile includes detailed information such as service descriptions, pricing, real-time availability, and customer reviews, which ensure transparency and help couples to make well-informed decisions that align with their vision and

budget. In addition, the platform also supports private consultations to allow couples to clarify service details or requirements directly with vendors. By acting as a bridge between couples and service providers, **Weddding** simplifies and speeds up the vendor selection process while enhancing transparency and convenience.

1.3.3 Enhance Budget Management

Budget management is another major challenge in the wedding planning process as couples must ensure that they stay within their financial limits without compromising their vision. The costs for preparing a wedding usually is substantial. Therefore, poor budgeting could lead to serious consequences such as debt, mental health issues or negative impact on relationships due to financial pressure. Due to this reason, budget management is one of the prioritized features for **Weddding** where it allows couples to set a clear budget based on their financial situation before starting the wedding planning process. Throughout the wedding planning process, the system will provide real-time cost updates based on the couple's venue design choices and vendor selection to help them track expenses and ensure alignment with their initial budget. Furthermore, the platform also offers a detailed breakdown of the couple's expenses to help them to have a clearer picture of their expenses, identify any cost-saving opportunities and adjust their plans accordingly to stay within their budget. This helps to reduce financial anxiety and supports a more organized, stress-free planning experience.

1.3.4 Streamline Wedding Planning Process

Traditionally, planning a wedding is a time-consuming, stressful, and often overwhelming task. Couples must carefully consider numerous factors such as vendor selection, venue design, budgeting, guest experience and thematic consistency. At the same time, they have to ensure the planning and outcome aligned with their expectations, personal preferences, and financial constraints. To achieve this, the couples often need to put a lot of thought into the planning process where they might be required to conduct extensive research, multiple inquiries, on-site visits, and frequent back-and-forth communication with vendors, which adds to the emotional and logistical burden. However, couples can eliminate the inconvenience mentioned through the use of **Weddding**. **Weddding** aims to alleviate these challenges by offering an integrated, all-in-one digital platform that streamlines the entire wedding planning process. Through this platform, couples can conveniently handle key aspects of wedding preparation such as 3D venue design, vendor discovery and booking, and real-time budget management, without needing to consult multiple disconnected sources or tools. By centralizing all essential planning tools and resources into one cohesive system, **Weddding** streamlines coordination, saves time and effort, and improves decision-making efficiency. It allows users to visualize their ideas, compare vendors side-by-side, and track expenses automatically. This convergence reduces the complexity of wedding preparation while simultaneously making it more orderly, manageable, and even pleasurable.

1.4 Advantages & Contributions

Weddding introduces an innovative and user-friendly and effective approach to modern wedding planning. By integrating important planning tools into a single central system, it provides a more customized, cost-effective, and time-saving solution while also providing service providers new opportunities to expand their business. Although there are existing platforms that offer similar services such as Free Online Wedding Planner, **Weddding** differentiates itself through its immersive 3D venue design, real-time budgeting features, and direct vendor collaboration tools, all within one cohesive platform. This initiative offers benefits and contributions at multiple levels including the users, industry, and society.

1.4.1 Advantages for Users

1.4.1.1 3D Visualization for Better Decision Making

Weddding provides couples the capability to have a complete control over their wedding planning. Through the platform's 3D venue design feature, users can visualize their dream wedding based on their ideas, simulate the output, and explore multiple layout and design options to seek perfection without the need for expensive consultations or corrections. This minimizes the possibility of misalignment between couples and vendors, enhances informed decision making, and gets rid of guessing. This site aims to promote personalization and creativity, empowering users to design a wedding that reflects their style and values. Additionally, the operation of the 3D feature requires minimal skills which simplify the wedding planning process which make the planning process an interesting and enjoyable experience.

1.4.1.2 Cost Effective Planning

By acting as a virtual event planner, **Weddding** eliminates the need for costly wedding planning services. Couples are able to independently manage their wedding timeline, design, and vendor coordination in one place. Besides, the built-in budget tracking system helps users stay within financial limits by providing real-time cost updates and detailed expense breakdowns, minimizing overspending and avoiding last-minute financial strain. Since the majority of the planning activities are able to be done on the platform, couples could also save physical efforts that were spent during the planning process such as onsite visits.

1.4.1.3 Real-Time Budget Monitoring

Weddding's built-in real-time budget monitoring feature enables users to actively track their spending throughout the planning process. This system serves as a tool that allows couples to set an initial budget based on their financial circumstances, and the platform will automatically update their overall expenses as they make decisions such as selecting vendors or customizing the venue design using the 3D design tools. This feature assists couples in making better-informed and prudent financial decisions. By ensuring that users are always aware of how their actions affect their budget, these automated updates assist users in making better-informed and prudent financial decisions. Additionally, the website offers a thorough analysis of prices by category (e.g., venue, food, decorating, etc.), enabling customers to identify areas where they may be able to reallocate funds or make cost reductions. Weddding reduces the chance of overspending and eases financial worry by providing this degree of financial visibility and control, which makes the planning process easier and more sustainable for couples.

1.4.1.4 All-in-One Platform

Weddding is a central platform that consolidates all essential planning tools which include venue design, vendor selection and communication, and budget tracking. This all-in-one solution saves time and reduces confusion by eliminating the need to manually synchronize information between platforms or switching between various applications. For instance, inside the same system, couples may use the 3D functionality to build their wedding location, choose a vendor that is compatible with the plan, and instantly see how that choice impacts their whole budget. The planning process is more coordinated and clear because of this optimized approach, which also makes it more convenient. Because everything they need is in one location, consumers benefit from a more seamless, intuitive experience that gives them the confidence and efficiency to plan their wedding.

1.4.2 Contribution to Society

1.4.2.1 Sustainable Development Goals (SDG) 8: Decent Work and Economic Growth

Weddding supports SDG 8 by creating an inclusive online marketplace that promotes small and medium-sized businesses (SME) in the wedding industry. Through the platform's consolidation of several wedding-related service providers such as caterers, photographers, decorators, and florists, these businesses may increase their visibility without spending a lot of money on marketing. This creates new revenue streams, especially for smaller sellers that would find it difficult to compete with bigger companies in traditional marketplaces. Additionally, the platform also encourages fair competition among vendors by allowing them to display their products or services based on quality and service rather than size or brand power. By doing this, Weddding promotes entrepreneurship in the service and creative industries and drive sustainable local economic growth.

1.4.2.2 Sustainable Development Goals (SDG) 9: Industry, Innovation, and Infrastructure

Weddding advances SDG 9 by introducing innovative technologies into a traditionally manually and offline industry. With the introduction of 3D modeling techniques in wedding venue planning, couples could create more accurate and visually appealing wedding venue designs. This digital shift not only enhances user experience but also streamlines the communication process between clients and vendors by providing clear visual references. The adoption of such technologies promotes the digital transformation in the wedding industry which has traditionally depended on 2D drawings, and physical mock ups. By modernizing the infrastructure of wedding planning, **Weddding** paves the way for a more effective, data-driven, and immersive planning experience.

1.4.2.3 Sustainable Development Goals (SDG) 17: Partnerships for the Goals by fostering collaboration between couples and a diverse range of vendors which creates a cohesive planning environment

Weddding contributes to SDG 17 by acting as a collaborative ecosystem that connects multiple stakeholders involved in the wedding planning process. The platform enables direct communication and collaboration between couples and a diverse range of service providers, including florist, catering, and entertainer. This integrated environment promotes shared goals, transparency, and mutual support, which lead to a stronger vendor-client relationship as well as better results. Additionally, by gathering different sectors under a single digital platform, **Weddding** facilitates the growth of scalable and reproducible long-term collaboration. These connections guarantee that wedding preparation and execution are not only more seamless and harmonious, but also in line with community values and wider sustainability.

1.4.3 Contribution to Industry

1.4.3.1 Technical Innovation in Wedding Planning

Weddding contributes to the field of software development and user interface design by combining interactive 3D modeling tools with real-time budgeting and vendor selection. With this seamless integration of financial, communication, and visualization elements, this online platform represents a new method for event planning technology. In contrast to conventional checklist-style platforms and 2D planning platforms, the immersive 3D virtual design environment offers a richer planning process that improves engagement and usability. Additionally, the adoption of 3D technology within the wedding industry encourages broader awareness and application of 3D technology, which may lead to their implementation in other fields such as e-commerce, fitness, and handicraft tutorial.

1.4.3.2 Broader Contributions to the Wedding Industry

Weddding encourages the wedding industry's larger transition to more accessible, digital, and environmentally friendly planning. By eliminating the need for several physical meetings, unnecessary expenditures, and fragmented tools, the platform promotes more intelligent and more environmentally responsible planning. This shift not only benefits the environment but also saves time and costs for both couples and vendors. Besides, it offers an inclusive solution that may help couples with varying economic levels who wish to celebrate meaningfully without excessive financial burdens. This would lead to the increase of use of online wedding planning services by couples due to the effectiveness and convenience. Moreover, **Weddding** could help to boost vendor visibility as service providers are allowed to register themselves on the platform and showcase their offerings directly to potential clients. This increased exposure helps vendors grow their businesses and strengthens the overall wedding market by improving accessibility and competition. By combining convenience, cost control, and exposure in one platform, **Weddding** contributes to a smarter, more modern wedding planning experience and supports the broader evolution of the industry.

1.5 System Development Methodology & Project Plan

1.5.1 System Development Methodology

1.5.1.1 Introduction to Evolutionary Prototyping

Evolutionary Prototyping is the development model chosen for the development of **Weddding** after careful consideration due to its emphasis on iterative refinement and continuous user feedback. Evolutionary prototype is one of the variants of prototyping model where it builds an initial prototype and continuously refine it based on user feedback and iterative improvements until the client considers it the final product. This approach saves time as it reworked on the previous prototype instead of developing a new prototype from scratch like rapid throwaway prototyping. (Rana, 2021) The characteristics of evolutionary prototyping make it well-suited for **Weddding**, a complex and user-focused wedding planning platform. Key features like 3D Venue Design, Vendor Collaboration, and Budget Tracking can be incrementally developed and tested in stages. Each iteration allows for user input, enabling refinements that better align the system with real-world needs and expectations.

One key advantage of Evolutionary Prototyping is its support for technical exploration. Features like the 3D Venue Design can be gradually developed and tested without risking system stability. This flexibility is crucial when integrating complex tools that require time to learn and optimize (GeeksforGeeks, 2024). In this project, it is suitable as the knowledge regarding the 3D modelling technique is minimal which requires efforts in order to effectively implement it into the project. Furthermore, the model also promotes early testing, helping in identifying bugs and missing functions early in development (Prasana, 2024). This reduces major issues later and ensures a more stable system. Additionally, by dividing the project into smaller parts which is suitable for big projects (GeeksforGeeks, 2024), it improves time management and task prioritization which is essential for maintaining steady progress, especially in a solo project.

1.5.1.2 Evolutionary Prototyping Lifecycle

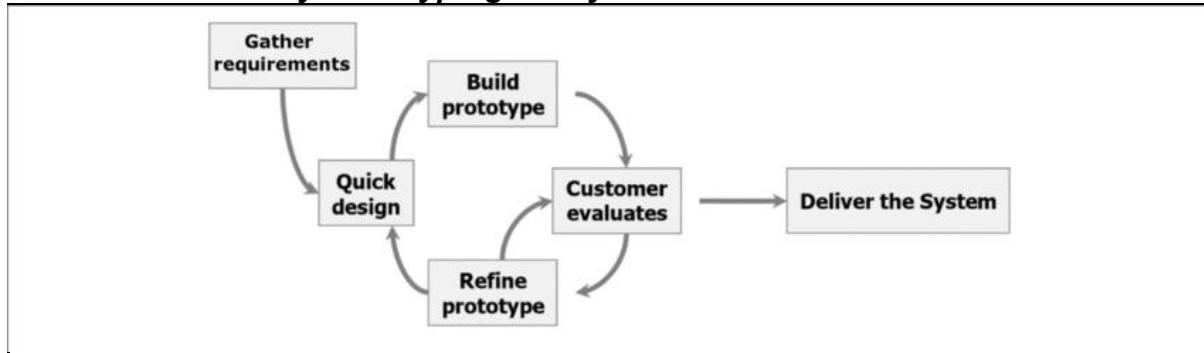


Diagram 1.1 Lifecycle of Evolutionary Prototyping

Resources: (Shadi Atalla, 2022)

In diagram 1.1, it shows the life cycle of the evolutionary prototyping model where it includes:

1. Gather Requirements

In this phase, key requirements are gathered from potential users and relevant stakeholders (GeeksforGeeks, 2025) such as couples and vendors to identify the major features or essential functionalities such as 3D venue design, vendor selection, and task checklists. This phase involves gathering requirements by using requirements elicitation techniques such as interview, questionnaire and brainstorming. The goal of this phase is to outline the core system functionalities, define initial project boundaries, and determine what stakeholders or users expect from the system. Since requirements can evolve, they are also evaluated for completeness, consistency, understandability, and compliance with any constraints or policies in each iteration. Additionally, the validated requirements will be documented in the requirements documentation and are reflected in each prototype release. (GeeksforGeeks, 2025)

2. Quick Design

This phase involves defining the system's core structure and key components. During this phase, the system's basic design is formed but is not a complete design. It provides a quick overview of the system that helps in the development of the prototype. (GeeksforGeeks, 2025) The system design is developed or updated based on the requirements obtained from the previous phase or after a new set of requirements are recorded after the previous prototype is approved by the stakeholder. The design including architectural design, subsystem and module specification, file structure, global data, and interface design are revised and minimally documented as necessary to ensure a solid system design and prototype structure. (Ryan A. Carter, 2001) In **Weddding's** case, it includes deciding how modules like 3D simulation, vendor management, and planning checklists interact. A scalable and flexible architecture is created to allow future improvements.

3. Build Prototype

During this stage, a working prototype is developed based on the system design from the previous phase, it is initially a small low-level working model of the desired system. (GeeksforGeeks, 2025) As iterations proceed in this model, the functionality accumulates gradually where necessary testing and debugging are conducted on the prototype. For **Weddding**, this might start from creating a 3D venue design environment and gradually integrates other functionalities such as real-time budget tracking.

4. Customer Evaluation

After the prototype is built, the prototype will then be delivered to the stakeholder for preliminary testing. The purpose of this step is to investigate the performance model's strengths and weaknesses (GeeksforGeeks, 2025) as well as to identify whether the prototype meets the stakeholder's expectations (Ryan A. Carter, 2001). If the prototype is unable to satisfy the stakeholder's expectations, the new requirements are recorded and another iteration is initiated. (cite) These feedback and suggestions are gathered and delivered to the developer. (GeeksforGeeks, 2025) In the context of **this project**, the prototype will be evaluated by the project supervisor which is Mr. Moses. Then, the feedback regarding the system will be forwarded to the project leader, Lee Peng Jin to carry out necessary modifications. For instance, there might be an issue in the drag-and-drop feature of the 3D venue design module which will then be reported and an iteration will be initiated to resolve the identified issue.

5. Refine Prototype

This phase is initiated only if the stakeholder or user is not satisfied with the current prototype, where necessary improvements are needed as a response to user feedback and suggestions. (GeeksforGeeks, 2025) For instance, if stakeholders found it hard to locate vendor details, the UI might be adjusted to include clearer labels or filtering tools. The cycle of refinement continues until the stakeholder or user is satisfied that the prototype represents the final product desired. (Lewis, 2023) In the case of **Weddding**, this might include improving the 3D preview engine, fixing booking errors, or enhancing the budget visualizations. Each refinement brings the system closer to a final and high quality product.

6. Deliver the System

Once the prototype is assessed and refined to a satisfactory level, the system is completed and delivered to the stakeholder or user. The final system in this stage is fully tested and distributed to production. (GeeksforGeeks, 2025) During this stage, testing for performance, security, and reliability would also be done to ensure the platform can handle real world usage. In order to reduce downtime and prevent major failure after deployment, routine maintenance is carried out on a continuing basis. (Lewis, 2023)

1.5.1.3 Advantages of Evolutionary Prototyping

Improved Customer Satisfaction

The goal of evolutionary prototyping is to constantly improve the system in response to user input until the finished product satisfies user requirements. (GeeksforGeeks, 2025) By ensuring that customers feel heard and involved, this method enhances user satisfaction with the final product. In the context of **Weddding**, this means that users (which is project supervisor in this project) assess each prototype, particularly those with complex features such as the 3D venue designer or vendor management. These recommendations shape subsequent prototype versions which bring the system closer to their real requirements and minimize the likelihood of rejection or dissatisfaction at launch.

Efficiency

Evolutionary prototyping relies on the same base rather than beginning from scratch with each iteration makes it an efficient development model compared to other models such as Rapid Throwaway prototyping. (GeeksforGeeks, 2025) This enables developers to make focused enhancements, saving time and effort. For instance, changes can be made to the existing elements in **Weddding**, such as vendor reservations or layout personalization, without having to start from scratch each time. This speeds up and lowers the cost of the development process, particularly when refining complex modules like 3D representations.

Manageable Development Process

The process builds functional versions of the system sequentially, supporting a structured yet flexible approach. It encourages more effective planning and permits modifications without overburdening the development process. The breakdown of projects into smaller and easier to manage parts makes the development process simpler as well as aid in effectively handling big and complex tasks. (GeeksforGeeks, 2025) This methodology helps this project to maintain the stability of the basic system, modules like vendor management, 3D wedding venue design, and user checklists as they can be separately improved and enhanced. Additionally, It also aids in the efficient distribution of resources during development.

Improved User Participation and Collaboration

Since evolutionary prototyping is iterative, users constantly test and comment on functional versions of the system which enhances the user involvement in the project. This results in more precise requirement collecting and improved communication between developers and users which leads to a high quality product. (Shadi Atalla, 2022) In the context of **Weddding**, the project manager assessing the prototype can give direct feedback on features such as the usability of the 3D wedding venue planner or the completeness of vendor details. This collaborative approach ensures the final platform reflects the expectations and preferences of real users.

Adaptability Through Iterative Development

Since the Evolutionary Prototyping continuously improves the initial developed prototype until the desired final product is produced, it makes it simple for developers to modify the system in response to new requirements or evolving needs regardless of the stage of development and without affecting the entire system. (Restack, 2025) This is especially helpful for **Weddding** if there are additional needs, such as integrating with payment systems. It is possible to implement these modifications in the middle of development without halting the advancement of other features.

Technical Inclusion

Since the system is built around interactions, developers are allowed to integrate and test new tools or frameworks without interrupting the entire system's operation. This adaptability is particularly valuable when working with unfamiliar or complex technologies that require time to master (GeeksforGeeks, 2024), as it allows for learning, experimentation, and refinement without delaying the entire project. This method is particularly beneficial for the development of 3D Venue Design features, as 3D modelling and rendering require technical expertise and performance optimization. Through iterative refinement, the 3D simulation component can be progressively improved over multiple development cycles.

Early Testing and Debugging

With Evolutionary Prototyping, testing is embedded within each iteration of prototype refinement rather than postponed until the full system completion. This practice ensures that issues are identified and resolved early, significantly reducing the risk of major setbacks later in development. Other than the issues, missing functionalities can also be found in the preliminary prototype. (Prasana, 2024) This continuous testing cycle contributes to a more reliable and stable system from the outset of the project.

1.5.2 Project Plan

1.5.2.1 Project Milestones

Table 1.1 Project Milestones of Weddding

No.	Milestone	Expected Completion Date	Outcome/Description
M1	Completion of Project Planning	18 April 2025	Project goals, scope, methodology, and timeline are finalized and documented.
M2	Completion of Feasibility & Background Research	2 May 2025	Market research and problem analysis confirm the project's relevance and viability.
M3	Requirements Gathering Completed	1 June 2025	Functional and non-functional requirements collected through user feedback and analysis.
M4	System Design Document Finalized	6 July 2025	UI mockups, database schema, architecture, and modules are designed and reviewed.
M5	First Prototype Developed & Reviewed	30 July 2025	Initial prototype with basic UI and minimal functionality delivered for early feedback.
M6	Second Prototype with Core Features	14 September 2025	Integration of core modules including 3D simulation, vendor listing, and budgeting.
M7	Final Prototype & System Integration	2 November 2025	All modules refined and integrated.
M8	Final System Testing Completed	11 December 2025	Full testing and debugging complete; system ready for deployment or presentation.

1.5.2.2 Project Schedule

Table 1.2 Project Schedules of Weddding

Task		Duration	Start Date	Due Date	Task Owner
Project Planning		14 days	5/4/2025	18/4/2025	
1.	Problem Collection	4 days	5/4/2025	8/4/2025	Lee Peng Jin
2.	Define project goals and objectives	3 days	9/4/2025	11/4/2025	Lee Peng Jin
3.	Identify development methodology	2 days	12/4/2025	13/4/2025	Lee Peng Jin
4.	Develop work plan and timeline	2 days	14/4/2025	15/4/2025	Lee Peng Jin
5.	Estimate time and resource	1 day	16/4/2025	16/4/2025	Lee Peng Jin
6.	Review & revise project plan	2 days	17/4/2025	18/4/2025	Lee Peng Jin, Tneh Aun Hee
Background Research		14 days	19/4/2025	2/5/2025	
7.	Study & compare technology, platform, programming languages	5 days	19/4/2025	23/4/2025	Lee Peng Jin
8.	Technical feasibility study	2 days	24/4/2025	25/4/2025	Lee Peng Jin
9.	Operational feasibility study	2 days	26/4/2025	27/4/2025	Lee Peng Jin
10.	Economy feasibility study	1 day	28/4/2025	28/4/2025	Lee Peng Jin
11.	Social feasibility study	1 day	29/4/2025	29/4/2025	Lee Peng Jin
12.	Feasibility study evaluation	1 day	30/4/2025	30/4/2025	Lee Peng Jin
13.	Review & revise literature review	2 days	1/5/2025	2/5/2025	Lee Peng Jin, Tneh Aun Hee
Requirement Gathering and Analysis		30 days	3/5/2025	1/6/2025	
14.	Decide the target stakeholders and prepare plan	3 days	3/5/2025	5/5/2025	Lee Peng Jin
15.	Design questionnaire/interview questions.	3 days	6/5/2025	8/5/2025	Lee Peng Jin
16.	Conduct interviews, or questionnaires	20 days	9/5/2025	28/5/2025	Lee Peng Jin
17.	Analyze, evaluate and document functional and non-functional requirements	2 days	29/5/2025	30/5/2025	Lee Peng Jin

18.	Review & revise requirements	2 days	31/5/2025	1/6/2025	Lee Peng Jin, Tneh Aun Hee
System Design		35 days	2/6/2025	6/7/2025	
19.	Study and decide system architecture	2 days	2/6/2025	3/6/2025	Lee Peng Jin
20.	Create Entity Relationship Diagram (ERD)	7 days	4/6/2025	10/6/2025	Lee Peng Jin
21.	Create Class Diagram	2 days	11/6/2025	12/6/2025	Lee Peng Jin
22.	Develop Use Case Diagrams	7 days	13/6/2025	19/6/2025	Lee Peng Jin
23.	Develop Activity Diagrams	7 days	20/6/2025	26/6/2025	Lee Peng Jin
24.	Design User Interface (UI)	4 days	27/6/2025	30/6/2025	Lee Peng Jin
25.	Algorithm formulation	4 days	1/7/2025	4/7/2025	Lee Peng Jin
26.	Review & revise software design document	2 days	5/7/2026	6/7/2025	Lee Peng Jin, Tneh Aun Hee
System Implementation		126 days	7/7/2025	9/11/2025	
First prototyping cycle					
27.	Implement basic functionalities such as login, register, CRUD functions and input validations	21 days	7/7/2025	27/7/2025	Lee Peng Jin
28.	Test and review first prototype	3 days	28/7/2025	30/7/2025	Lee Peng Jin, Tneh Aun Hee
29.	Refine first prototype	4 days	31/7/2025	3/8/2025	Lee Peng Jin
Second prototyping cycle					
30.	Implement advance features such as 3D wedding venue design, budget management, and checklist	35 days	4/8/2025	7/9/2025	Lee Peng Jin
31.	Test and review second prototype	7 days	8/9/2025	14/9/2025	Lee Peng Jin, Tneh Aun Hee
32.	Refine second prototype	7 days	15/9/2025	21/9/2025	Lee Peng Jin
Third prototyping cycle					

33.	Implement final advance features such as vendor management, and perform system integration	35 days	22/9/2025	26/10/2025	Lee Peng Jin
34.	Test and review third prototype	7 days	27/10/2025	2/11/2025	Lee Peng Jin, Tneh Aun Hee
35.	Refine third prototype	7 days	3/11/2025	9/11/2025	Lee Peng Jin
System Testing & Optimization		32 days	10/11/2025	11/12/2025	
36.	Define test strategy	2 days	10/11/2025	11/11/2025	Lee Peng Jin
37.	Create test plan	5 days	12/11/2025	16/11/2025	Lee Peng Jin
38.	Prepare test data	2 days	17/11/2025	18/11/2025	Lee Peng Jin
39.	Develop test cases	5 days	19/11/2025	23/11/2025	Lee Peng Jin
40.	Prepare test environment	1 days	24/11/2025	24/11/2025	Lee Peng Jin
41.	Execute test cases	7 days	25/11/2025	1/12/2025	Lee Peng Jin
42.	Summarize test results	1 days	2/12/2025	2/12/2025	Lee Peng Jin
43.	Refine & improve system based on test results	7 days	3/12/2025	9/12/2025	Lee Peng Jin
44.	Review & revise test plan	2 days	10/12/2025	11/12/2025	Lee Peng Jin, Tneh Aun Hee
<i>* Date is calculated by using an inclusive method. (Counts both the start and end dates)</i>					

1.5.2.3 Gantt Chart

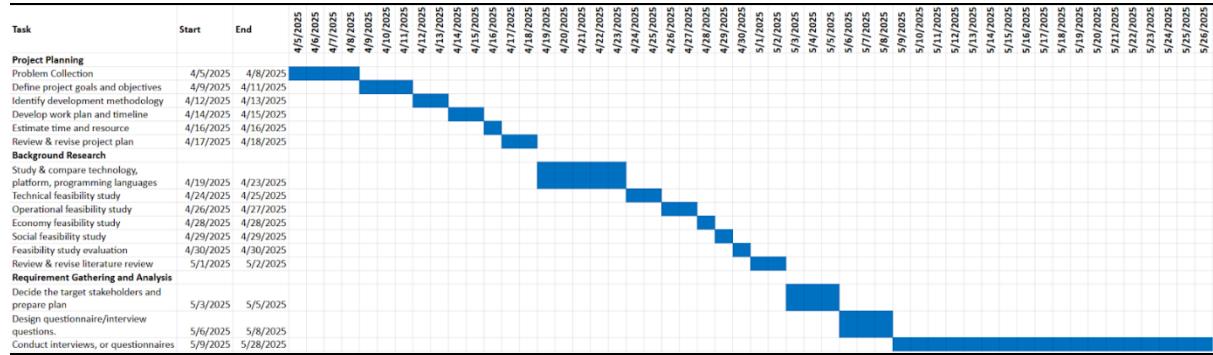


Diagram 1.2 Gantt Chart of Weddding Software Project (Part 1)

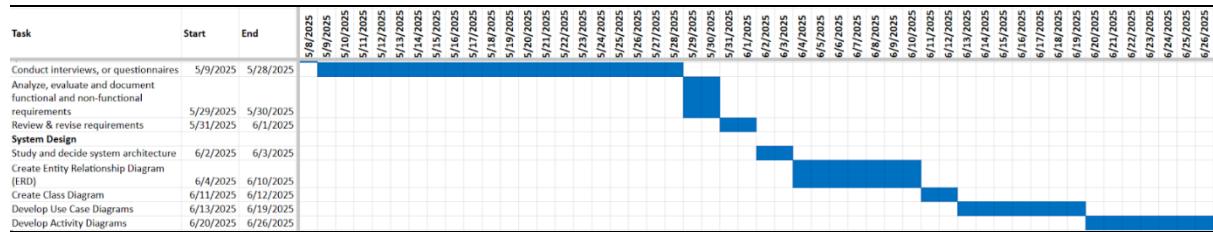


Diagram 1.3 Gantt Chart of Weddding Software Project (Part 2)

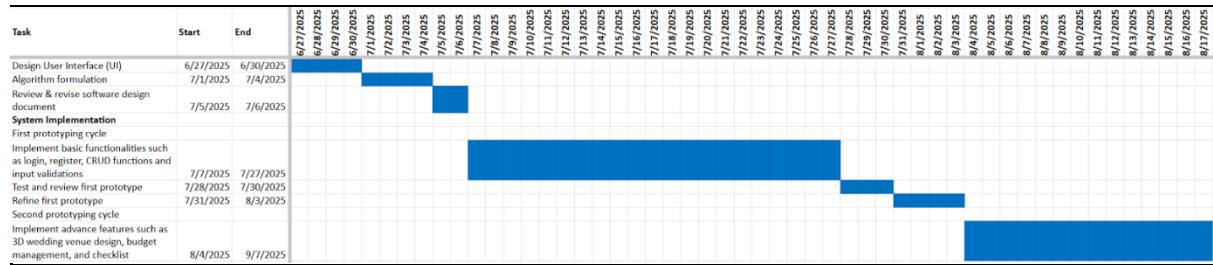


Diagram 1.4 Gantt Chart of Weddding Software Project (Part 3)

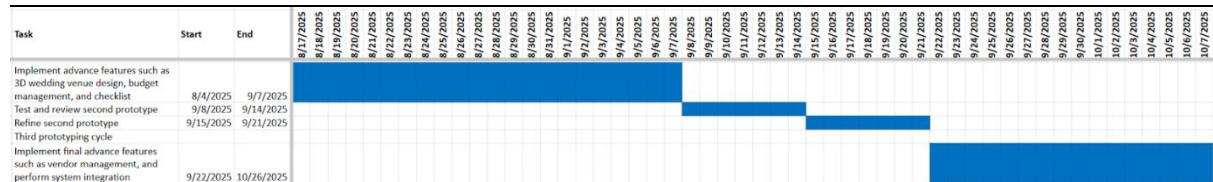


Diagram 1.5 Gantt Chart of Weddding Software Project (Part 4)

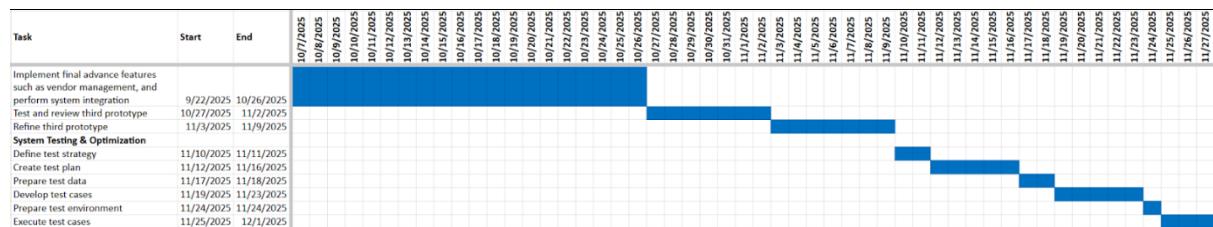


Diagram 1.6 Gantt Chart of Weddding Software Project (Part 5)

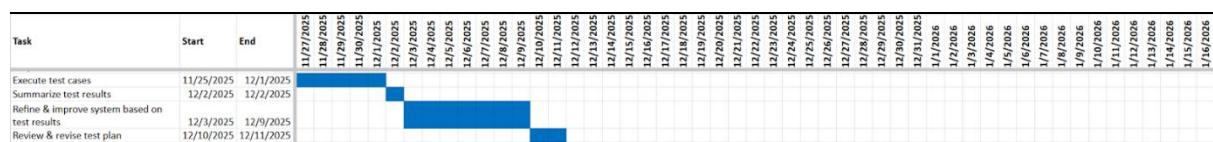


Diagram 1.7 Gantt Chart of Weddding Software Project (Part 6)

1.6 Project Overview

1.6.1 Project Developer

This project is an individual project that will be handled by Lee Peng Jin under the supervision of Teh Aun Hee, the supervisor of this project from Tunku Abdul Rahman University of Management and Technology. In this project, Lee Peng Jin will handle the planning and development of the modules of this project, which is mentioned in the section 1.6.2.

1.6.2 Project Scope

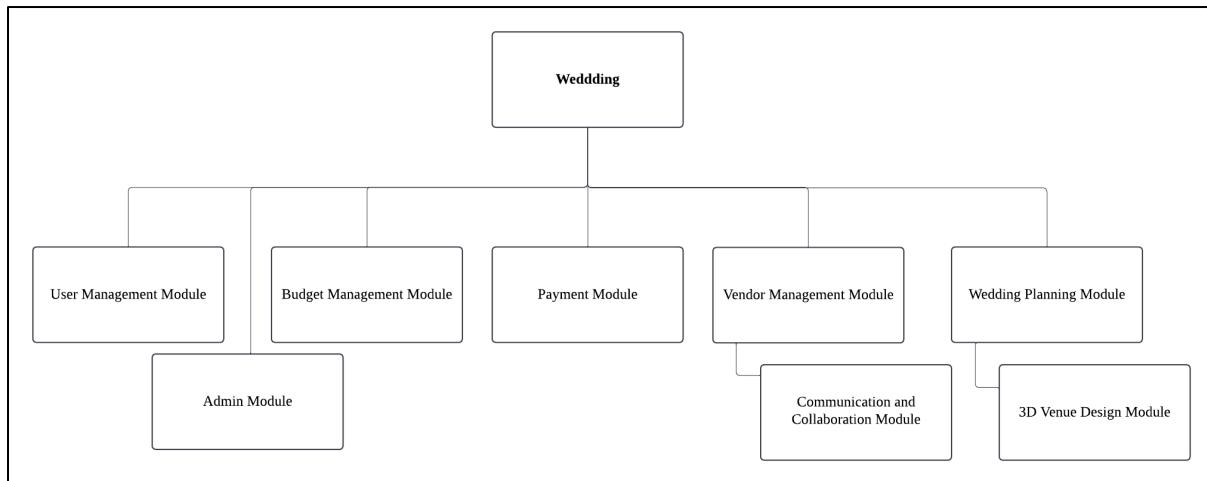


Diagram 1.8 Modules of Weddding

1.6.3 Modules

User Management Modules

The User Management Module is responsible for handling all user-related operations within the wedding planning system. It enables users to register for an account, manage their personal profiles, and securely log in and out of the platform. Additionally, it supports password management functionalities such as changing or resetting passwords. This module ensures secure user access and lays the foundation for a personalized wedding planning experience.

Budget Management Module

The Budget Management Module helps couples manage their wedding expenses by providing intuitive tools to plan, track, and visualize their budget. Users can set an initial budget, log various expenses incurred during the planning process, and categorize them accordingly. It also includes budget visualization features such as charts or graphs, which make it easier for users to monitor their financial status and avoid overspending. In addition, it will also take part in the 3D venue design where it is responsible to automatically update the total expenditure when users update the wedding venue design.

Vendor Management Module

This module serves as the core interface for managing vendor-related activities. Vendors can manage their service listings, handle orders, and oversee booking and reservation details. Users can search for vendors, view their offerings, and initiate bookings. The system ensures a streamlined interaction between couples and vendors, improving communication, booking accuracy, and service transparency.

3D Venue Design Module

The 3D Venue Design Module allows users to visually plan and customize their wedding venue layout. It includes features like search for and drag-and-drop decorations and furniture, enabling users to experiment with different setups. Users can modify the venue layout to match their vision and search for specific decorations or furniture within the module. This visual design tool bridges the gap between planning and actual execution by offering a more accurate and engaging representation of the event space.

Admin Module

The Admin Module supports the back-end management of the system. Admins can manage user accounts, oversee system activities, and generate reports that provide insights into user engagement, vendor performance, and system usage. Besides, admins are also able to add or remove pre-packaged weddings on the platform which is pre-designed weddings where users can not need further modification. This module ensures that the platform remains secure, organized, and effectively moderated, supporting smooth operation from a system-wide perspective.

Wedding Planning Module

The Wedding Planning Module functions as the core organizational hub for couples planning their weddings. It offers a checklist feature that guides users through every necessary task before the big day, and it also allows users to search and book venues. By centralizing these tasks, the module ensures users stay on track with deadlines and don't overlook critical planning steps.

Payment Module

This module handles all financial transactions within the system. It processes payments related to venue bookings, vendor services, or any other paid features. Once a transaction is completed, it also generates receipts for user reference and record-keeping. The Payment Module ensures safe, reliable, and traceable transactions for both users and vendors.

Communication and Collaboration Module

This module is responsible for the interaction between couples and vendors. It allows both parties to reach out to each other through a live chat feature where they can discuss the details of the services that are provided by the vendors. This feature is important for the couples as they could request for more detailed information regarding the services provided by the vendors before making any decisions. On the other hand, live chat helps vendors to stay aligned and updated with customer's requirements and needs. As a result, this feature is vital for the platform as it allows effective communication and collaboration between couples and vendors without accessing external platforms or applications.

1.7 Chapter Summary & Evaluation

This chapter discusses the foundation for the development of **Weddding**, a centralized online platform designed to utilize innovative digital technologies to streamline the wedding planning process. The chapter began with an explanation of the system's idea and motivation which highlights the difficulties of traditional wedding preparation, including budgeting, venue design, vendor coordination, and decision making. Particularly for couples without expert planning experience, these difficulties frequently result in overspending, increased stress levels, and unmet expectations.

This chapter continues with the problem analysis which specifies the limitations of existing planning techniques, especially the ineffectiveness of the 2D design tools and the disjointed vendor interaction procedures. More immersive and structured planning experiences are becoming more and more popular, particularly among tech-savvy couples, according to market data and an analysis of current platforms.

To overcome these issues, **Weddding** is proposed where it offers an integrated system with real-time budget management, centralized vendor communication, and 3D venue simulation. By providing better financial management, easier access to reliable vendors, and enhanced visualization of wedding venues, each module aims to empower couples. Additionally, it also contributes to the society and industry as the service helps small and medium-sized businesses by providing them with an inclusive online marketplace.

The chapter also covered the adoption of Evolutionary Prototyping development methodology which was selected due to its capacity to handle technically challenging elements such as 3D design, respond to user feedback, and be iterative. This approach encourages the system to be continuously improved until it satisfies user requirements. To ensure that each development phase is delivered on schedule, a project plan with milestones was created to guide the development.

In a nutshell, the project's purpose, objectives, problem statement, proposed solution, methodology, and target users were all sufficiently described in this chapter. A realistic development framework combined with extensive background study shows that **Weddding** is a feasible and impactful project. In addition to offering its consumers value, it makes a significant contribution to the digital event planning and wedding industry.

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Appendices

FORM 2: Project Proposal



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PROJECT TITLE: WEDDDING [3D WEDDING VENUE DESIGN]

ABSTRACT

A wedding today is a refined celebration of love and commitment that seamlessly integrates timeless traditions with modern elegance. It creates an atmosphere of exclusivity and sophistication. Every detail in this meticulously planned experience, from the venue to the ambiance, is a reflection of the couple's unique story and vision. However, the process of planning the wedding is a complex and challenging process as the couples have to take many different factors such as wedding-related services, venue design, and budget constraints into consideration when making decisions throughout the process. Failure in managing all those activities could lead to bad experience and dire consequences such as financial impact, relationship impact, and mental health issues. This is where Weddding comes in to simplify the planning process and enhance the planning experience by introducing advanced and useful features. Weddding is an online platform that streamlines the planning process by providing a real-time budget updates feature, 3D venue design technology, and a vendor collaboration hub. This platform could benefit both the couples as well as vendors as it acts as the middleman that connects them. At the same time, it provides additional features to increase the productivity and efficiency of the planning process.

PROBLEM

Weddings are one of the most important and meaningful ceremonies in a person's life, as it is a celebration of happiness, commitment, and the joining of two loving individuals or even two families into a lifelong partnership. However, planning a desired wedding is a time consuming and complicated process due to the factors involved in the planning process. A bad planning approach could lead to various consequences such as increasing stress, mental health issues and negative impact on relationships. (Clarity Clinic, 2020)

One of the biggest challenges in the wedding planning process is budgeting, where couples have to ensure their expenses on the wedding day will not exceed the budget. According to statistics in 2020, 54% of couples increase their budget during the planning process often due to unforeseen expenses (WeddingWire, 2020) and another survey done by The Knot in 2022 stated that nearly half (47%) of couples said that planning wedding budget is their biggest worry for their wedding. (Gillespie & Bennett, 2023) Besides, the cost of the wedding is substantial. In 2024, the average cost for a wedding is \$33,000 according to a survey that involved 17,000 couples conducted by The Knot. (Schwahn, 2025) Although the

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financial pressure given by this figure varies from person to person, it highlights the financial commitment required for a traditional wedding ceremony and reception which could be a huge challenge for couples from middle and low income groups.

However, the majority of couples would choose to hire a wedding planner to handle the tasks throughout the wedding planning process to ensure a smooth wedding preparation process and reduce the burden on themselves, but hiring a wedding planner could add additional financial pressure to the couples' expenses as the average cost for a wedding planner was \$2100 in 2023. (Johnson, 2025) It is also worth noting that the wedding planner fee is separate from other vendor costs such as catering, entertainment, and decoration. Hence, it could further increase the overall budget of the couples.

Other than that, couples who try to avoid the additional costs from wedding planners would consider a DIY (do-it-yourself) approach to wedding planning. Although this approach is feasible to reduce the expenses, it often leads to additional challenges especially for non-professionals or those without experience in event coordination. Without the expertise, couples are more likely to make the planning process to be time-consuming and stressful. (Seasons 5, 2023) This added pressure can detract from the enjoyment of the engagement period and potentially lead to oversights in the planning process. Budgeting issues are critical for the couples when planning their wedding as improper budget management could lead to unnecessary expenses. According to a study, it stated that 28% of couples go into debt as a result of paying for their wedding in the US, while the highest rates for wedding-related debt are in Peru and Brazil, where 47% of couples end up in debt after their nuptials. (Julija A., 2024)

Apart from the budgeting issue, the vendor selection is another challenging aspect for wedding planning as it covers various aspects of the wedding such as the venue, decoration, caterer, and florist. For a single wedding, couples could hire 14 vendors on average (Amarnath M, 2024) to create their desired wedding and ensure their big day runs smoothly. Among the various types of vendors, requiring couples to choose the right vendors for their wedding on different platforms and possible physical visits can be overwhelming as they have to ensure the service providers align with their aesthetic preferences and budgetary constraints. When choosing vendors, couples have to conduct meticulous research, comparison, and clear communication with their vendors to prevent misalignment and ensure a cohesive event. Among these considerations, selecting the wedding venue is always one of the most stressful parts for the couples as it serves as the foundation for the entire wedding where it could affect the decoration choice, budget, and guest experience. When choosing a suitable venue, which is also considered one of the vendors, couples have to consider factors such as venue availability, capacity, and costs (Vines of the Yarra Valley, 2024), where they have to carry out massive research, inquiry or even site visit in order to



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make an informed decision. These efforts make the process become more complex and time consuming, which could potentially lead to negative experiences for the couples.

Last but not least, informed decision making is crucial throughout the entire wedding planning process as couples have to make numerous choices where each decision made could influence the outcomes and experiences of the wedding ceremony. The wedding-related choices include selecting the wedding theme and color scheme to choosing the menu and music. While making decisions, couples could be overwhelmed as they must maintain the balance between personal visions and budgetary constraints, and the expectations of family and friends. A study in 2023 revealed that 71% of couples didn't feel prepared for the sheer number of decisions that come with wedding planning. (Dunn, 2025) Additionally, bad decisions could lead to unresolved conflicts which can have lasting impacts on relationships. Without the proper guidance and organizational tools, couples may struggle to navigate these complexities, leading to increased anxiety and potential disputes throughout the planning journey.

SOLUTION

To address the identified issues during the wedding planning process, Weddding is the proposed solution for it. Weddding is an online platform that emerged to help engaged couples to effectively plan and manage their special day.

Weddding is a centralized platform that integrates venue booking, 3D venue design, budget tracking, and vendor collaboration into a single system. The purpose of this system is to overcome the fragmented communication and efforts between couples and vendors which usually lead to mismanagement, overspending, or unmet expectations. By combining the essential features together, Weddding allows engaged couples to have a personalized, efficient, and transparent planning experience. Besides, Weddding plays the role as the event planner as it helps to connect couples with vendors and streamlining the planning process. Thus, couples could reduce their expenses as they do not have to pay an extra fee for an external event planner.

The 3D venue design is one of the major highlights of the platform that allows couples to visualize and simulate their wedding venue during the planning phase. By using the 3D modeling technique, couples can fully customize their venue layout, decorations, and themes before making any commitments. This feature provides a significant advantage to couples as it allows couples to experiment with different arrangements, themes, and decoration elements according to their ideas and try out every possibility in a virtual environment until their desired outcome is achieved. By using 3D design tools, it provides the full control over the wedding design to the couples and better visualizes the outcome of the venue design.



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Additionally, 3D simulation improves the decision making of couples regarding the design of the venue as they can instantly get a realistic preview of the final setup, which also reduces design misalignment.

Furthermore, the platform also introduces a comprehensive vendor management system where all the wedding-related service providers will be gathered for the couples to choose with ease. The purpose of this feature is to simplify the process of choosing and booking vendors for a wedding as related service providers could register themselves on the platform while the couples could look for desired service providers for their wedding ceremony from a catalog. Instead of finding vendors from different resources, Wedding will build the bridge between couples and vendors, making the process simpler and more efficient. To further enhance the decision making during vendor selection, each vendor's offering will come with detailed pricing, description, real-time availability, and reviews, which ensure transparency as well as provides all the essential information needed by the couples to ensure the selection is aligned with their vision and budgetary constraints. Besides, they could also try to apply the products of vendors to their venue to have a preview of the outcome such as adding flower centerpieces on a round banquet table. In addition, the platform allows the couples to have a private consultation with the vendor to have a clear understanding of the services provided by the vendor or to discuss details regarding the desired requirements of the couples.

Last but not least, the budget tracking is another core functionality of the platform to solve the common wedding challenge which is overspending. This feature is designed to monitor the expenses of couples on their wedding venue design and optimize their financial planning. The couples could set a budget based on their situation before starting the wedding planning process. Throughout the wedding planning process, the system will provide real-time cost updates based on the couple's venue design choices and vendor selection. These timely cost updates act as a notification that ensures they are still aligned with their initial budget. Additionally, the platform also offers a detailed breakdown of the couple's expenses to help them to have a clearer picture of their expenses, identify any cost-saving opportunities and adjust their plans accordingly to stay within their budget.

Weddding's primary purpose is to streamlines the wedding planning process. The following outlines the structured workflow of the system :

1. Select Wedding Date and Time

Couples begin by choosing their desired wedding date and time. This step ensures that the selected venue and preferred vendors are available on the chosen date.

**FORM 2: Project Proposal****Lee Peng Jin****Programme: Bachelor of Software Engineering
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Users can browse wedding venues based on various factors such as location, budget, capacity, and other preferences. The platform provides a detailed overview of each venue, including photos, reviews, and pricing, to help couples make informed decisions.

3. Step 3: Select Wedding Preparation Type

Couples can choose between Self-Organized Weddings and Pre-Packaged Weddings. In a Self-Organized Wedding, the couple has full control over venue design and vendor selection. Meanwhile, a Pre-Packaged Wedding offers a curated set of services, including decorations, catering, and entertainment, allowing couples to skip the detailed planning process and select a predefined package.

4. Step 4: Start Wedding Venue Design (For Self-Organized Weddings)

At this stage, users begin designing their wedding venue using the 3D simulation tool. Couples can either start from scratch or select from pre-designed templates that match different wedding themes (e.g., minimalist, Western, Chinese). The platform offers an interface where users are allowed to choose and place tables, chairs, floral arrangements, and stage decorations within their chosen venue. Real-time estimate expenses updates are displayed after each item is added to the design.

5. Step 5: Select Vendors and Items (For Self-Organized Weddings)

To complete their wedding setup, couples browse a vendor catalog that includes essential wedding services such as catering, floral arrangements, sound systems, and entertainment. Each service from vendors will be listed along with their prices in the catalog to allow couples to perform comparisons easily. The couples could select items from vendors to apply in their 3D venue design, providing a visual representation of how decorations and services will be set up. Pricing and vendor details will be updated at the same time to ensure cost transparency and ensure the couples are staying within their budget.



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6. Step 6: Finalize Venue Design and Setup Plan

Once the venue layout and vendor selections are finalized, users review a detailed summary of their choices, including design elements, vendor services, and the overall cost breakdown. If any changes are needed, modifications can be made before confirming the final setup. This step ensures that couples have full confidence in their selections before proceeding.

7. Step 7: Proceed to Payment and Confirmation

Couples complete the booking process by making a single deposit payment to the platform's administrator (event planner). The system automatically generates receipts and provides a confirmation summary of the booked venue, selected vendors, and planned expenses.

8. Step 8: Post-Wedding Payment and Closure

After the wedding, the couple finalizes any remaining balance payments. Once the transaction is complete, receipts are generated for record-keeping, ensuring a seamless and transparent financial process.

To make this solution possible, both frontend and backend development are required. For the front-end development, React.js is chosen for its component-based architecture which aids in simplifying the UI elements management. Additionally, Three.js and WebGL will be used to render 3D graphics directly in the browser in order to provide an immersive and interactive venue design experience. For the backend, Node.js is used due to its event-driven and non-blocking nature makes it ideal for real-time updates features in the system. Besides, MongoDB is selected as its NoSQL structure allows flexibility in handling dynamic data such as venue design preferences, real-time expenses tracking, and vendor availability.



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TARGET MARKET

The target market of Weddding is the digital wedding solutions industry as it provides wedding planning solutions through an online platform. The wedding industry is a promising and thriving industry that was valued at \$160.5 billion in 2020 and is projected to reach \$414 billion by 2030, registering a CAGR (Compound annual growth rate) of 4.8% from 2021 to 2030. (Chauhan & Deshmukh, 2022) This study signals the healthy and sustained expansion of the industry. Delving into the wedding planning market, research shows that the market is valued at \$23.11 billion and is projected to grow at a CAGR of 12.8%, reaching \$594 billion by 2033. (News Channel Nebraska, 2025) Other than that, technology is increasingly integrated into the wedding industry, which is normally used to streamline the planning process and make it more efficient. According to 2 researches, one of them shows that 63% of couples in Brazil relied on wedding planning applications while India saw 60% adoption as well (Wells, 2023), while another stated that 70% of couples use online wedding planning platforms for their wedding. (Belyh, 2025) With the results from these two studies, it is undoubtedly a great opportunity for digital solutions to be involved in the wedding market due to the increasing software trend and demand for weddings.

For the target users, the engaged couples will be the primary users of the platform, typically millennials and Gen Z couples, or aged from 25 to 35. The couples within this age range are usually computer literate and are more likely to seek seamless, immersive, and efficient wedding planning experiences. According to the WeddingWire survey in 2019, it states that almost 40% of couples primarily use their mobile devices, and 66% utilize a wedding planning application to organize their big day. (Forrest, 2019) However, another statistics show that 86% of couples use wedding planning apps for their wedding, and the virtual venue tours grew by 35% in 2025. (Belyh, 2025) This shows the growing trends of technology usage in the wedding industry, and with the computer knowledge they have, they will be more hands-on with the system.

Other than engaged couples, the wedding-related vendors and service providers are also the target users of the system. The wedding industry encompasses a variety of businesses, including venue providers, catering, florists, decorators, entertainment, and more. These vendors rely on efficient client engagement, seamless coordination, and effective marketing to attract couples and secure bookings. However, many vendors face challenges such as fragmented communication with clients, difficulty in showcasing their offerings online, and inefficient booking management. With the aid of the platform, vendors can achieve a mutually beneficial relationship where the platform allows vendors to increase their exposure to the market while the vendors provide engaged couples with a diverse selection of services, seamless collaboration, and a streamlined booking experience.



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In 2022, Malaysia recorded 214,824 marriages, a slight decrease from 215,973 in 2021. (Nizam, 2023) However, assuming 50% of couples utilize online planning tools, and only 5% of the users are captured by Weddding, the platform could still be able to serve up to 5,370 couples annually, 448 couples monthly. This assumption shows that this software solution is feasible and its potential for growth, especially as digital adoption continues to rise in the wedding planning industry.

COMPETITION/CONTRIBUTION

The adoption of software solutions in the wedding industry is increasing as the technology nowadays is evolving rapidly. Online Wedding Planning Assistant (Online Wedding Planning Assistant, 2023) is the identified primary competitor of Weddding as both of them provide the similar features as well as serving the similar purpose. Similar to Weddding, Online Wedding Planning Assistant is also an online tool that helps couples to manage and organize their wedding. However, there are some discrepancies in the functionality they provide.

First and foremost, Online Wedding Planning Assistant offers a tool for planning the layout of the wedding venue through a 2D seating chart that roughly visualizes the layout, table placement, and seating arrangements of the wedding scene. (Online Wedding Planning Assistant, 2024) This feature is useful for couples to manage their special day's layout easily, but there are still some challenges with this approach such as ambiguity in the actual design and lack of interactivity. With the 3D visualization feature of Weddding, this challenge can be overcome and brings other benefits to the couples at the same time. By applying 3D tools in the wedding venue planning process, it allows couples to virtually design and visualize their wedding venues according to their preferences and ideas. Besides, they could try out every possibility for the venue decorations to find the most satisfied design as the tool provides them a realistic preview of layouts and decorations without any commitment. Compared to Online Wedding Planning Assistant, Weddding's 3D tool aids in better decision-making and ensures the design and decoration align with the couple's vision.

Furthermore, another cutting edge of Weddding is its integrated vendor collaboration. Although Online Wedding Planning Assistant did provide the similar feature, it is not as efficient as Weddding's vendor management system. On Weddding, couples could directly view vendor's details and select their desired vendor from a catalog. Vendors can showcase their products and services in the virtual space which allows couples to make informed selections. Additionally, the couples are able to have a direct communication with selected vendors directly on the platform to resolve any concerns. This integrated approach makes Weddding stands out of its competitors via streamlining communication, reducing misunderstandings, and enhancing the overall planning experience, while competitors like Online

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Wedding Planning Assistant did not provide any communication features between couples and vendors which makes the process complicated and intensive.

Last but not least, the budget tracking is an advantage of Weddding when compared to its competitors which is Online Wedding Planning Assistant. The budgeting feature of Online Wedding Planning Assistant allows the couples to set their budget for different categories, input their actual expenses for each category, and the system will automatically perform budget calculations to show remaining funds and overages. (Online Wedding Planning Assistant, 2023) This function has played a certain role in the budgeting aspect for the couples while planning. However, the manual effort to input the budget and actual expenses is a huge drawback of the feature, which could discourage couples from using it. In contrast, Weddding will provide real-time expense tracking linked directly to the 3D design choices. As couples customize their wedding venue, they receive instant feedback on costs and the remaining budget, promoting financial transparency and aiding in budget adherence.

Other than the competitive advantages, Weddding also contribute to the society by addressing broader societal challenges. Weddding contribute to the society by achieving a total of 3 Sustainable Development Goals (SDG). The first SDG accomplished by Weddding is SDG 8 - Decent Work and Economic Growth. As an online platform that gathers wedding-related vendors, Weddding provides a digital platform for small and medium-sized vendors which creates more economic opportunities while promoting fair competition at the same time. Through the digital marketplace, vendors could gain visibility and access to a broader customer base and tools to manage bookings effectively, which eventually contributes to local economic growth. The second SDG achieved is SDG 9 - Industry, Innovation, and Infrastructure. Weddding introduce the integration of 3D simulation technology and wedding process which could set a new standards in the wedding planning industry. This innovation enhances user experience, encourages the adoption of digital solutions, and positions Weddding at the forefront of industry advancements. Lastly, Weddding also contributes to SDG 17 - Partnerships for the Goals by fostering collaboration between couples and a diverse range of vendors which creates a cohesive planning environment. By facilitating these partnerships, the platform promotes inclusive and sustainable practices within the wedding industry.



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MILESTONES**Development Model**

Evolutionary Prototyping is the development model chosen for the development of Weddding due to its emphasis on iterative refinement and continuous user feedback. Evolutionary prototype is one of the variants of prototyping model where it builds an initial prototype and continuously refine it based on user feedback and iterative improvements until the client considers it the final product. This approach saves time as it reworked on the previous prototype instead of developing a new prototype from scratch like rapid throwaway prototyping. (ArtOfTesting, 2021) The key reasons of choosing Evolutionary Prototyping include:

Adaptability Through Iterative Development

Evolutionary Prototyping develops the initial prototype and continuously improves it based on user feedback. Therefore, changes can be made at any stage to accommodate new requirements and insights without overhauling the entire system, which eventually leads to the production of quality software that meets its requirements and expectations. (Restack.io, 2025) With this characteristic, Evolutionary prototyping allows the project to adapt to the inevitable changes and uncertainties during the development. For instance, if a new requirement emerges for the 3D Venue Design feature, it can be added and refined without disrupting the existing functionalities.

Technical Inclusion

Since the system is built around interactions, developers can integrate and test new tools and frameworks without disrupting the overall system. This flexibility makes it useful when working on a technology that is new and requires time to learn (GeeksforGeeks, 2024), as it allows for learning, experimentation, and refinement without delaying the entire project. This method is particularly beneficial for the development of 3D Venue Design features, as 3D modeling and rendering tools require technical expertise and optimization. By using this approach, the 3D Venue Design feature can be gradually developed and refined over multiple iterations, with continuous improvements over multiple iterations.

Early Testing and Debugging

In the Evolutionary Prototyping, testing is involved in each iteration of refining the prototype rather than waiting until the entire system is built. This early detection of issues reduces debugging efforts and ensures that errors don't accumulate and cause major delays. Other than the issues, missing functionalities can also be found in the preliminary prototype. (Prasanna, 2024) This contributes to a more stable, reliable system from the early stages of development.

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Time Management and Productivity
This approach simplifies the development process by segmenting the project into smaller and easier-to-manage portions which can be managed effectively, especially for big and complex projects. (GeeksforGeeks, 2024) Other than that, each segment can be prioritized and delivered to the user one by one (GeeksforGeeks, 2024), making it easier to manage the task and estimate the time required for the development. This structure prevents overwhelming workloads and ensures that development remains steady and organized, which is crucial for a solo project.

Project Schedule

ID	Task	Start Date	Due Date	Duration (Days)
1	Project Planning	5/4/2025	18/4/2025	14
2	Background Research	19/4/2025	2/5/2025	14
3	Requirement Gathering and Analysis	3/5/2025	1/6/2025	30
4	System Design	2/6/2025	6/7/2025	35
	System Implementation	7/7/2025	9/11/2025	126
5	Prototype 1: Core System (Basic Functionality)	7/7/2025	27/7/2025	21
6	Prototype 1: Testing & Feedback	28/7/2025	3/8/2025	7
7	Prototype 2: Advanced Features	4/8/2025	7/9/2025	35
8	Prototype 2: Testing & Feedback	8/9/2025	21/9/2025	14
9	Prototype 3: Final Features (Full system)	22/9/2025	26/10/2025	35
10	Prototype 3: Testing & Feedback	27/10/2025	9/11/2025	14
11	System Testing & Optimization	10/11/2025	11/12/2025	32

* Date is calculated by using an inclusive method. (Counts both the start and end dates)

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