

Course ID: COMP 1682

Course Title: Event manager pro

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Due date – 14. May. 2020

Project resource link -

https://drive.google.com/open?id=1k1Wa6dYtnYoHdomTPboJg_Spl2vzmLmO

Acknowledgement

First of all, I would like to thank the almighty, without his grace and kindness it wasn't possible to complete this project in such a pandemic situation. Then, there are many great people that have been encouraging me throughout the last four years, I would like to show special gratitude to my supervisor Mr. Nasimul Kadir Sir for encouraging and helping me throughout the development of this project with his proper guidance and intelligence. Without his support it was not possible to evolve this project at this level.

Also, a ginormous thanks to our beloved Mustafizur Rahaman sir, who always guided us showing the right path of moving ahead. Then I would like to thank my family, friends and some university seniors who helped me at different point when I was stuck and frustrated.

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Chapter 1

Title:

Introduction

Chapter contents:

- ✓ Introduction
- ✓ Background
- ✓ Aims
- ✓ Objectives
- ✓ Scope
- ✓ Nature of challenges
- ✓ Conclusion

In this chapter, a detailed overview will be given of the overall project. This detail is based on an initial understanding of the whole project. This chapter will contain an overview and background of the project, aims and objectives, project scope, duration, resources, audience, core problem are and solution, etc. read the sections below to know more.

Background

The event management industry is one of the most growing industries across the world. The size of the global events industry was valued at \$1,100 billion in the year of 2018 and is most likely to grow at a CAGR of 10.3% to reach \$2,330 billion by 2026. (Abhishek Roy, 2019) People spend a lot of money and put a lot of effort to make their events successful. Events are important for both companies, organizations, and social life. The classification of events is quite big. Some of the most held corporate events are seminars and conferences, trade shows, business dinners, product launches, charity events, board meetings, team-building events, etc. (Hanchar, 2018) Company directors and CEO's believes that organizing more events can bring prosperity and more profit to their business. It boosts their business and sales. It improves employee retention and boosts their morale as well. Moreover, it creates a great recognition of the brand in the market. (Taylor, 2018) For these obvious reasons, corporate decision-makers are ready to spend a lot on hosting an event. On the other hand, the number of private events is remarkable as well. Some mostly recognized private and social events are weddings, birthday parties, anniversary parties, Engagement parties, Family get-together, Farewell party, etc.

Aims

My primary aim regarding this project is to bring the automation in event management industry by providing a complete solution to reduce the manual effort of event firm owners and introduce an efficient way of organizing a big or small size event to people who are facing trouble. For a better explanation, I am dividing the aim into five fragments.

- Reduce paper-based works.
- Ensuring benefits in terms of business for event planners and vendors.
- Ensuring higher quality service at a lower cost for people who are arranging various events
- Bringing digitalization in the event industry.
- Ensuring the availability of manpower for business owners.

Objectives

There is some certain objective I have to accomplish to achieve my aim. Without having a strong set of objectives, it is not possible to actualization any aim successfully. I am defining the objectives below.

- Research similar existing system to identify the gaps.
- Research and analyze the key development facts of the proposed system
- Create a usable interactive user interface for the product.
- Develop a fully functional website to operate all the features.
- Making the site secure and reliable.
- Test and evaluation of the final product.

Scope

I want to build a system that will ease the effort of organizing a big size corporate or private event. I want to build an efficient solution for this. This solution will be all about solving various problems in the event industry. There are some certain stakeholders such as event firm owners, different vendors, and most importantly clients. They all often face some regular problems while organizing the event or hosting it or doing business with it. The solution I am about to build will be trying to solve most of the problems of each stakeholder.

Nature of challenges

There are always some certain challenges on the way of reaching any goal. Those need to be identified so that it doesn't put any big impact on the halfway of development and break the morale. In this project, there are some challenges as well. One of the biggest challenges is to make people agree using my software leaving their traditional ways behind. They might not take this as a positive initiative. People are afraid to do any experiment with their business unless they do not see the probability of benefit. Besides this, there is another problem which is the size of the project. The scope of the event industry is quite big moreover, in this project there will be a solution for three types of user 1. Event planner 2. Vendors 3. Clients or general users. So, the project size will be comparatively big. Another big problem is this project is an academic single project, So, all the works of research, analysis, development, designing, testing, evaluation will be done by one person.

Chapter 2

Title:

Literature review

Chapter contents:

- ✓ Introduction
- ✓ Approach to literature searching
- ✓ Problem identification
- ✓ Challenges for an individual host
- ✓ Challenges for an event manager
- ✓ Recommended approach
- ✓ Conclusion

Approach to literature searching

This section is about discussing and evaluating the key problem domain based on published information all over the web, articles, journals, authorized books, etc. To conduct any research this is quite difficult to maintain the reliability of the source of information. I will mostly try to grab information from genuine articles & websites. The whole research will typically focus on the whole scenario of the event industry. The whole research will be based on some books, web articles, and search engines (google scholar & google). I will use the data from some already established event correlated websites as well.

Problem identification

The event management industry is a rapidly growing industry in our country. But unfortunately, no good work has been done until now using the technology to enhance this industry. There is a lot of scopes to work in this industry using the latest technology and automation. (Business Daily, 2020) In this article, there is a column about technology where it is cited that in this era of technology, we should use it wisely and think out of the box. Software for this particular industry can solve many problems at once. Every individual and corporate has to manage events at least once in their lifetime. These events can be a personal or social event or it can be a corporate seminar or marketing event. Managing these events properly is a challenging task for any person/organization, and if the event size is big then there are more reasons to worry. Mostly an ordinary person relies on an event manager to accomplish these events. But there are still many difficulties and challenges for both the person and the manager to successfully host the event. I am discussing and focusing on the most common problems regarding this topic below. (Azavista Event Technology, 2020)

Challenges for an individual host

For any kind of short or big events, there are many things needed to be arranged. Without the right vendor, it is not possible to organize an event properly. (Business Daily, 2020) Some usual things are food, decoration, sound system, photography, lighting, etc. So usually the people who are responsible for an event has to manage all these on their own. They have to visit shops to shops to arrange all these and do not get lots of choices. In a simple calculation, if anyone has to arrange 5 of these things and they want to compare every item with 3 varieties, then they have to visit at least 15 shops or vendors. It will be quite a tough job for a busy person or in shortage of time. In such a scenario, people usually choose vendors in a hurry and do not get what they were exactly looking for. So, it has become a great challenge in the perspective of organizing an event. (Tassiopoulos, 2010)

Solution to the problem

According to the book of Events management, it is always recommended to use technology to solve these problems. This problem can be solved if the technology is implemented wisely here. (Tassiopoulos, 2010) If all the needs of an event host can be arranged through dedicated software, it will ease the effort of arranging the necessary things.

Guests and attendees are quite important for any kind of event. Without them, an event is not complete. Because all the arrangements and hard works are done only to attract the guests. Especially in corporate marketing or networking events, the category of guests is targeted from the very beginning. Because every big event has a particular aim or goal, and to achieve that properly inviting the right guests is pretty important. But sometimes it becomes rather hard and expensive. People don't get the chance to invite all their guests in a good way. It usually happens because of getting into hustle or having too much pressure from other works. So, this can be considered as a challenge for an event host as well. (Wagen, 2020)

Solution to the problem

An automation system of sending the invitation to the right guests or attendees can genuinely solve this problem. This will ease the effort, as well as cut down the cost of the task. according to a discussion inviting guests through the internet using social media always helps to promote the event. Moreover, it also helps to grab attention towards the event. (Warner, 2013)

As it is said earlier, that guests are very important for an event but having too many unexpected and irrelevant guests can ruin the charm and success factor of an event. Hosting the right guests is quite important. Especially in corporate events, the guest target is set before any other activity. All the arrangements are done depending on the probable number of guests. There is always a limitation on the number of guests. But sometimes it crosses the expected number. Because there is no easy way to identify real guests so anyone without an invitation can get in. Existing ways of identifying guests are manual and time-consuming and sometimes it becomes a matter of indecency to check the invitation. Having more guests than expectations can cause a shortage in the sitting arrangement, shortage of food and beverage, unwanted crowd and chaos, etc.

Solution to the problem

To solve this problem, it is suggested to keep track of guests. Create a proper guest list long before the event. Then manage the guest list properly. (Scotti, 2018)

Sometimes people overspend money as they don't have previous experience. It causes financial loss to the individual. Most of the people don't conduct event frequently. So, they don't know the

exact price range of every product and service they need. Moreover, they don't have the proper idea of their spending for each product or service. In personal events like weddings or birthdays, it happens a lot. Vendors also take bad advantage of this crisis. They charge higher from these types of clients. Besides they don't have a proper source of information as well. So, they have to pay more money for everything they need. Which compromises the success factor of an event. Corporate and commercial events are mostly supposed as an investment in their business. If the investment behind any event crosses the budget and doesn't produce sufficient ROI then the event is considered as a loss project for the business. It is one of the biggest challenges that any event host may face. (Leoisaac.com, n.d.)

Solution to the problem

To solve this problem, it is suggested to keep track of every expense. Setting up a budget at the very first step of the event. Having a total knowledge about where I am spending how much. Try to stick to the budget while purchasing any service or product for the event. To avoid the above-mentioned circumstances, it is necessary to maintain the requirements properly and consider the budget factor before going for any expenditure. (Scotti, 2018)

Challenges for an event manager

Manpower is an important factor in terms of event management. Without the skilled and appropriate number of manpower, it is quite difficult to run any business smoothly. For event management business it is more important than usual. This is one of the common challenges which is faced by almost every event manager. One of the core reasons is managers, don't have enough options for human resourcing and have to pay high to the existing workers. (Really now, 2013) Another reason for the high demand is location. Sometimes, workers have to come for work from a long distance which causes the extra cost of transportation. They claim high wages from the event manager. As a result, the total cost for the event crosses its budget sometimes.

Solution to the problem

There are many solutions to this problem as it is one of the most common challenges that every business may face. According to an article, it is suggested to use websites and HR hiring tools to get the right skilled workers. It will also solve the problems regarding the relevant factors such as location, skillset, etc. (Scoop team, 2019)

This is one of the most common scenarios in the case of event management. It usually happens whenever the client is confused about what they need or because of any unwanted coincidence. But this causes a great awkwardness or the event manager. Sometimes they have to take

overpressure or they have to deny to the client and both can cause misunderstanding between two-party.

Solution to the problem

There are some certain solutions to avoid and fightback to these problems. It is suggested to clarify the client's requirements from the very previous stage. If the clients can track their requirements from the first day, it reduces this inconsistency. Moreover, it is not wise to always agree with the client to their last-minute changes or judge the change if that is a want or a need. (Metaspire, 2019)

Tracking every single activity of the business is both a difficult and significant job for a business owner. Especially in such kind of business, the event manager must have to track all the transactions of his/ her business. Because this job is all about responsibilities where the business owner can't just rely on any lower management staff. On the other hand, it is pretty hard to keep track of all the activities manually. So, the chances of doing mistakes become high. (Wagen, 2020)

Solution to the problem

Tracking activity is the best way to control everything. As long as anyone tracks their management activities, everything goes perfectly. Some certain things are required to be managed by the event manager proactively. Such as requirements of clients, bookings of the client, event dates, etc. (ALEIT Events, 2020)

Managing financial transactions is a big task for a business owner. It is hard to remember all the receivables and payables from the perspective of a business. Maintaining these manually is also a difficult task and the possibilities of doing a mistake are high. In the event industry, the volume of these transactions is even higher. They have to maintain transactions with several clients and vendors. In a manual process, these transactions are usually maintained by pen & paper or excel sheets. So, keeping a detailed record of the transaction is quite impossible in this way. More importantly, it creates the chances of data redundancy and inconsistency. So, the records become confusing & the chance to produce an accurate summary report is quite low. Besides manual calculation is also time-consuming. It takes more time to create and maintain the format of writing.

Solution to the problem

Digitalization is the only solution to this key problem. To grow any business, automation is a must thing to bring first. It is better to avoid excel sheets for data processing works. Because there are options for putting a lot of macros, formulas, and functions. One mistake on using these can ruin

the whole table of data and can cause re-enter the whole data. (Outsource2India, 2020) Using software or a web-based system will automatically track all the transactions of a business that are done online. It is one of the efficient ways to process data of any business.

A big problem for an event manager is managing multiple bookings on one day. This can create a critical situation for the event manager sometimes. Usually, it happens because they forget about multiple dates in manual process and commits to the clients. But it gets worse on the day of events and in the meantime, they have to take overpressure and work for both clients. Because of over-pressure, sometimes they can't deliver the works they promised to the clients which creates great misunderstanding in their business relationship with the client.

Recommended approach

To build an end to end understanding, I have done deep research on event management. I have gathered knowledge about several parts, such as the way event industry works, remaining problems in the industry, Probable solutions to those problems, how the use of technology can help to enhance the industry Etc. After this thorough research, I have identified some significant problems or challenges that usually faced by event hosts and professional event managers. I have also mentioned the suggested solutions I found throughout my research for each of the problems. Following those solutions, it is possible to make a software which can solve most of the problems efficiently. To develop a web application based on those given solutions, I have to refine those requirements again. So that my understanding before starting development gets clearer. Moreover, it is not possible to implement all the solutions in the first attempt. So, I will try to produce functional software that has the key requirements and fulfills the key business goals. Here I am providing the recommended approaches below.

- The system must provide an option to the clients and vendors to register their profiles and update them from time to time.
- The system will be bringing all the vendors and clients under one common platform so that it becomes easy finding each other. Besides, the clients will have plenty of options and easy access to vendors without spending any transport cost or roaming in the market for hours and hours.
- The system should have an admin panel for the event planner who will be the owner of the system and control every other user and activity through a dynamic dashboard.
- The database of the system must be storing all the data of clients and vendors respectively
- The system must provide a budgeting tool that will help the user to stick to their budget.

- The system should process an easy automated invitation system by using a unique identity for each guest. The guests will have access to the event after being recognized using that identity. Which they will be receive previously through an email. This feature will prevent having unwanted guests in the event. This will save time and money as well
- The system should provide a staff registration system. Where interested candidates would send their profile through a form and the system will store that information into the database. The event manager will be able to see the registered staff details. Moreover, they will also be able to sort the staffs according to their location, which will solve the problem of staffing, previously mentioned in this research
- The system should provide a dynamic dashboard to the vendors and event hosts. Where they will be able to view and manage their activity.
- The system should validate the last-minute change request in the client's requirement to avoid any inconvenience.

After conducting deep research on my preferred topic, I am quite clear about how my project will be solving some genuine problems. The knowledge and experience I gathered from this section, will help me throughout the project to make it a better one.

Chapter 3

Title:

Product research

Chapter contents:

- ✓ Introduction
- ✓ Review and comparison
- ✓ Three similar products
- ✓ Strengths and limitations
- ✓ Weighted scoring model
- ✓ Scoring model graph
- ✓ Conclusion

In this chapter, I will conduct another research on similar products. I will be comparing some leading solutions available in the market and discuss their strength and weaknesses. To do that I am going to choose four existing solutions (national and international) and gather information about those. Lastly, I will provide a scoring model to support my research.

Review/comparison of three leading application

As I am supposed to build a web application in this project, so I preferred choosing web applications for comparison. The comparison will be more relevant if it is done between the products with the same technological background. There are many similar web applications I have found after short research. Among them, I have chosen four web sites which provide the almost same kind of services. I will evaluate the websites by identifying their strengths and weaknesses. The identification will be mostly based on Jakob Nielsen's 10 usability heuristics. I will also use the knowledge I gained through the research I have done previously to produce the literature review. I am providing the list of my chosen web sites with short introduction below,

I. Event Up (International – USA)

Event up is a USA based event management website. This system is specifically made for providing event venues at various locations in the USA. People who are searching for a suitable venue for their event can come and search through this website. There is an option for venue owners to list their venues on this site. There are more observations regarding this site which I will be discussing in the further section. I am presenting strengths and weaknesses based on the information below.

Site link -> <https://eventup.com/>

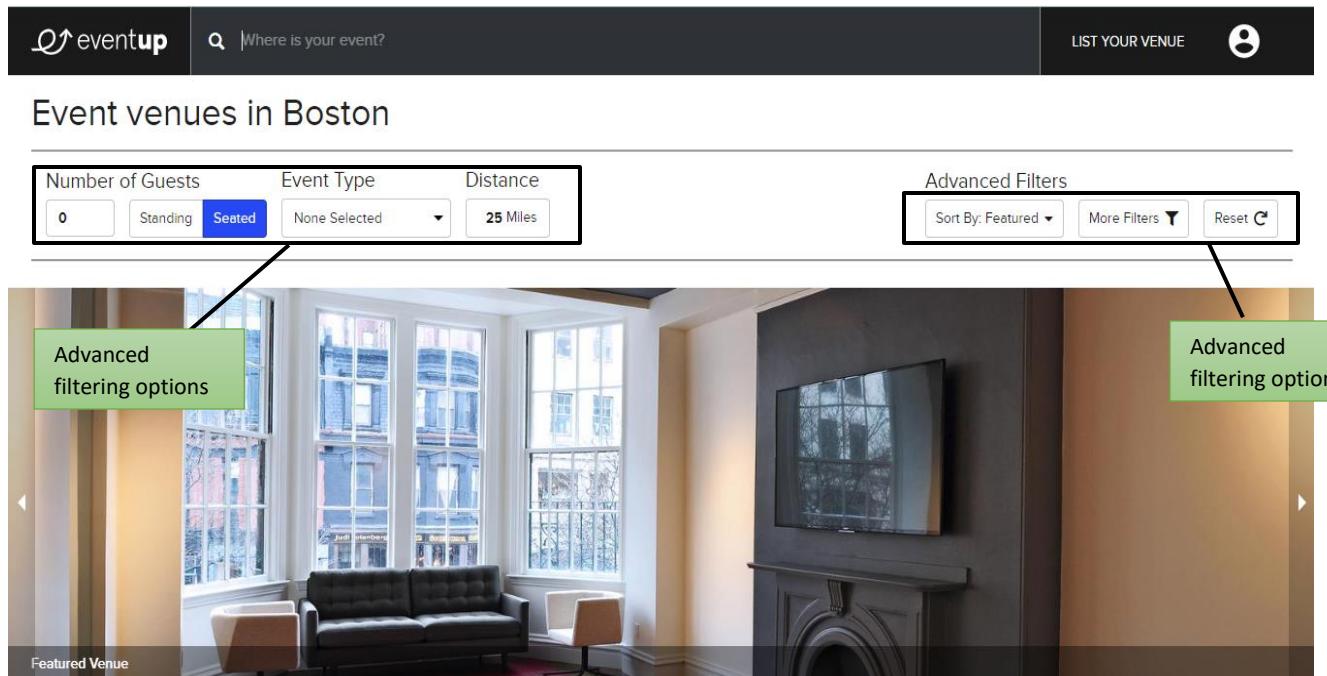


Figure 1: Event Up (venue search page)

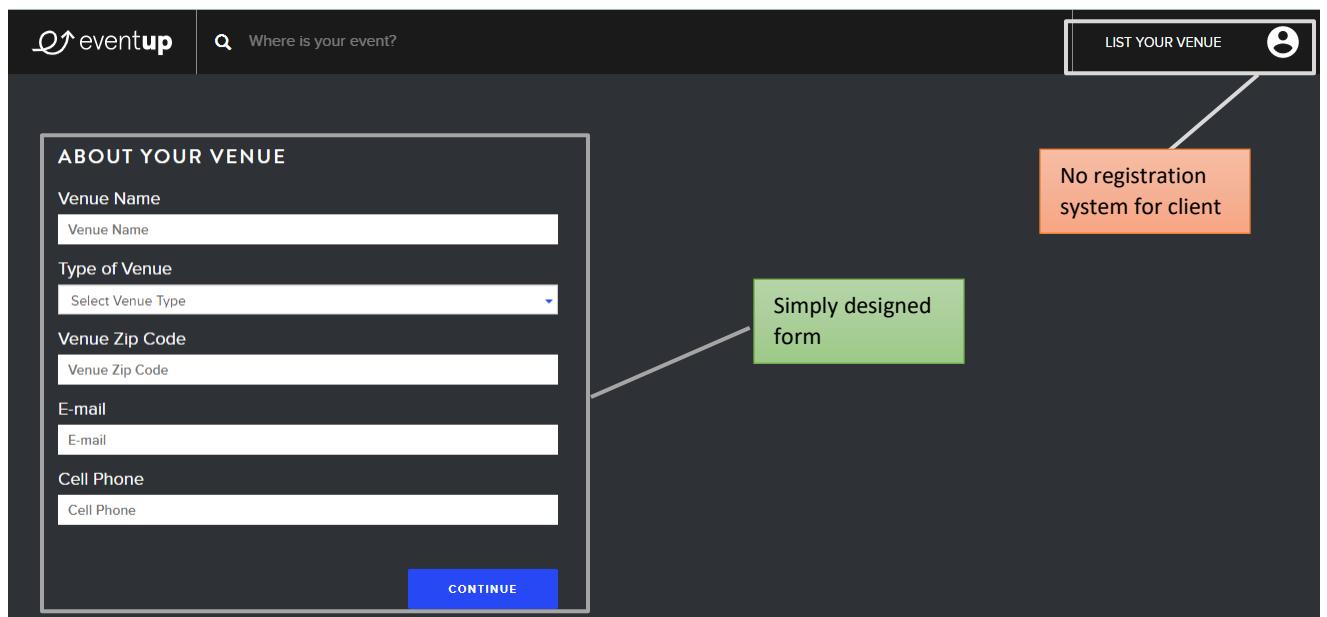


Figure 2: Event Up (venue listing page)

Strengths of the system

- a. The system is user-friendly.

The system is simple and easy to use. No complications faced while registering or searching for any venue.

- b. All Information is well structured and organized.

Every element in the site is well managed. On the homepage, the first screen appears with a search bar. After a little scroll, there is a section appears where all cities are listed.

- c. Clean and minimalist design

The design of the website is simple and attractive. The color combination is quite good. Buttons, forms, and other elements are well placed and well designed.

- d. Strong searching and filtering option

Their searching section provides the feature of advanced filtering options. Users can search using various parameters.

- e. Strong privacy policy and terms of use

The system has shown a list of privacy policies and terms of use where stated various guidelines about using their site.

Weaknesses of the system

- a. The system scope is quite short.

As an event planning website, there are a lot more services like catering, lighting, decorations, sound, etc. to provide besides venue searching. In this site, they are providing only one service. So, user expectations can be compromised because of this.

- b. Poor admin verification system.

After registration as a venue vendor, no verification needed by the admin. Anyone can easily create an account and post fake information without verification.

- c. Lack of admin support.

I have felt there is a lack of support from the admin. There is no way to contact the admin directly.

- d. No registration system for general users or customers.

There is no separate registration system for the customers. Customers and vendors both have to register through the same form. There is no identification between the users.

II. MGN Events (international- UK)

MGN Events is a UK based event management company. They have clients across the world. They provide all types of private & corporate event services. Through this website, they promote their brand and services. They also use this site as a medium of contact with their potential customers. The site is full of information and animated elements. I am discussing the strengths and weaknesses of this website below;

Site URL -> <https://www.mgnevents.co.uk/>

The screenshot shows a contact form on a website. At the top left, it says "START PLANNING YOUR NEXT EVENT TODAY!" in pink. Below that, there's a line of text: "Have a business or personal event coming up? Contact us to see how we can help...". On the right, there's an orange callout box with the text "Only sending contact informations for booking". The main form area has four input fields: "Ershad Bari" (name), "1000514@daffodil.ac" (email), "Your phone number" (phone number), and "What is your budget for the event?" (budget). A large text area labeled "Your Enquiry" is on the right. At the bottom left of the form is a pink "SUBMIT" button. A black arrow points from the text "Only sending contact informations for booking" to the "Your Enquiry" text area. Another black arrow points from the text "Not a standard design for a dashboard" to the overall form layout.

START PLANNING YOUR NEXT EVENT TODAY!

Have a business or personal event coming up? Contact us to see how we can help...

Only sending contact informations for booking

Ershad Bari

1000514@daffodil.ac

Your phone number

What is your budget for the event?

Your Enquiry

SUBMIT

Not a standard design for a dashboard

Figure 3: MGN events user dashboard

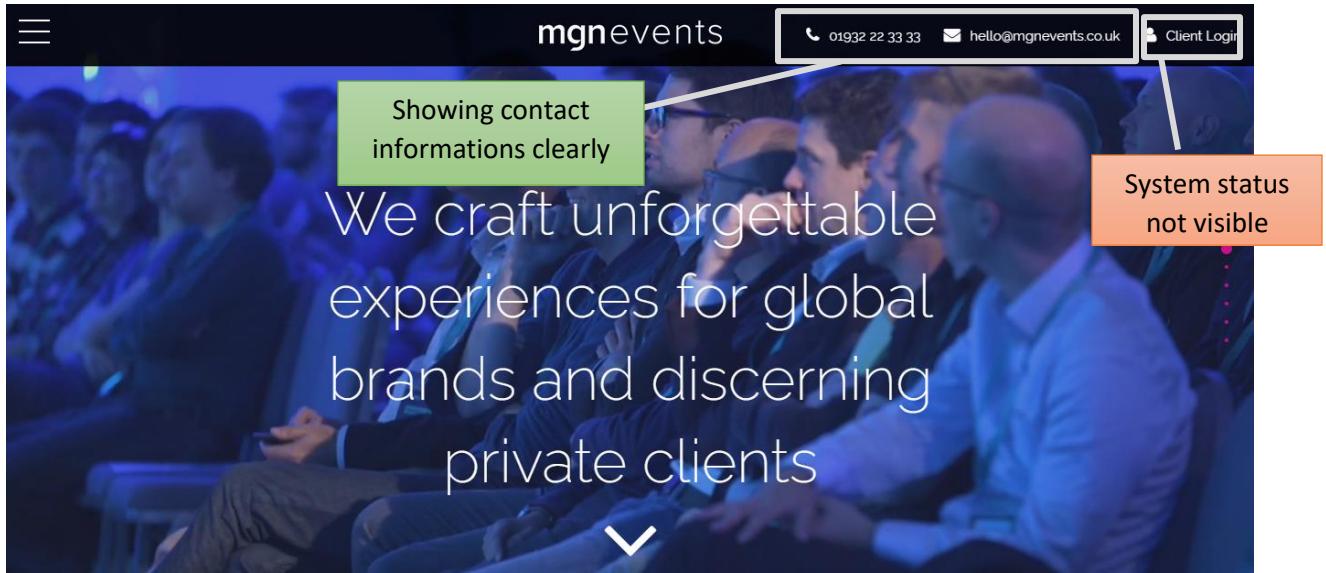


Figure 4: MGN events home page

Strengths of the system

- a. Dynamic design with lots of animations

The system design is lively and attractive. There are lots of jQuery animations used to attract visitors.

- b. Contact information visible and highlighted

The contact information like email and phone no is highlighted at the top of the website.

- c. Easy to use system

Registration and other functional process are easy in the system. The user won't need much assistance to complete those.

- d. Professionalism in color combination of UX.

The color combination used on the website is looking quite professional. No eye-soothing color used which can be irritating for a user.

- e. Fast

The system page loading speed is quite fast. The user won't be feeling frustrated while using the website.

Weaknesses of the system

- a. No choice of services.

This website has doesn't provide options to the customer. They only provide their services. There is no option for different vendors to join as a marketplace.

- b. No searching options

The system doesn't provide any keyword searching or filtering option for the user to find services according to their need.

- c. Lack of visibility

The system has a lack of visibility. According to Jakob Nielsen's principle, the user must be informed about what they are doing. In this system, despite getting logged in it shows the option for client login. This can create confusion for users.

- d. Design not according to standards

There are some pages on the website which are not designed to maintain modern standards and principles. The dashboard design is not satisfactory. The user won't have that feeling which they get while using other software after entering into the dashboard.

- e. No widely functional booking system identified.

There is no functional booking system on this website. The user can only send an inquiry to the admin of the system. This process is neither sufficient nor satisfactory for any user.

- f. The site is mostly informative.

No significant functional feature is identified on the website. There is no scope for a user to do any type of managerial task through this website.

III. BD event management & wedding planners

BD wedding planner is one of the biggest event companies in Bangladesh. They are well known and working in the industry for very long. In the year of 2007, they created their online platform to provide their service through a website. After the first look at their website, it can be assumed that they created this website to promote their services and their brand. However, I have done further

research by going to every webpage of their site. Now I will be stating the strengths and weaknesses of their site.

Site URL - > – <http://www.bdweddingplanners.com/> (Local)

BD Event Management & Wedding Planners

Clear navigation menu

Informations not arranged in a good manner

Welcome to BD Event Management & Wedding Planners. [\(R\)](#)

A directory of complete wedding , birthday & event to HELP plan your perfect wedding ,birthday & event day .

"Since 2007"

Award winning BD Event Management & Wedding Planners offer a highly creative , friendly & Professional service to Bangladesh .

Our Event Management & Wedding Planning offers you a user-friendly environment for facility scheduling and event management.

for

- Engagement
- Turmeric Ceremony
- Wedding Planning &
- Birthday Party planning
- Photography & Cinematography
- Baby Shower
- Marriage Anniversary
- Event Management & Employees meeting
- Event Set Design & Stall Design & Production .

whatever your Occasion or anniversary are in ...

Why We :::

1. Your one stop shop for designer weddings.
2. Uniqueness to your wedding event.
3. Strong network to offer you various specialties from different cities of Bangladesh.
4. Designer touch to enhance the ambience.
5. Highly cost effective.
6. We help you to figure out the best service providers of your town.
7. High professionalism and dedication.
8. Covering every aspect of wedding and giving a symmetric touch to it.
9. Our development department gives new concepts and designs.
10. Hassle free Wedding.

Fast Booking Contact :

Mobile :

- 01719 344 312
- 01619 344 312
- 01919 344 312

Congratulations on your engagement and forthcoming marriage, Event, Birthday . We are now taking bookings for 2020, 2021 & 2022

BD Wedding Planners : Ph...

Like Page

Be the first of your friends to like this

Designer touch to enhance the ambience

At ICCB

Figure 5: BD Wedding planner home page

Strengths of the system

- Clean dynamic sections for providing information about their business and services.

There are a lot of information sections that are dynamically controlled from the admin panel of the website.

- b. The easy navigation bar on top

The navigation bar is easily usable. The users won't get confused to move from one page to another.

- c. Displaying a lot of important information for users

The site is providing a lot of information about their company, services, discount offers, and necessary notices.

Weaknesses of the system

- a. The site is informative.

The site has no functional features for users. It just provides a bunch of information. Users won't get any benefit other than collecting pieces of information.

- b. Elements alignment are not well organized

The placement of the elements is not satisfactory. The site looks more like a pdf page rather than a webpage. The user has to scroll too much. No touch of modern web designing techniques is visible.

- c. The color combination is not up to the mark.

Color combination is not maintained according to the UX principles. The user can get bored while surfing on the website.

- d. Not responsive.

The site is not mobile or tab responsive. The user won't be satisfied using other devices except for browsers.

Weighted scoring model

At the end of this evaluation chapter, I am providing a weighted scoring model below to justify my thoughts. The criteria are set according to Jakob Nielsen's usability heuristics & based on this project's needs. Each of the criteria is defined with a particular weight within 100%. The marking is done against each criterion for each company within the range of 1 to 10. At last, a final score is calculated on the bottom.

Criteria names	Criteria Weight	Event Up	MGN Events	BD wedding planner
System scope	15%	6	5	2
Visibility of status	8%	7	4	4
User control & freedom	8%	5	6	3
Standard & consistency	7%	9	8	2
Flexibility & Efficiency	12%	8	7	7
Searching & Filtering	12%	8	1	2
UI & UX	15%	9	8	2
Security & Reliability	15%	5	7	6
Help & support system	8%	6	8	6
Total weighted score	100%	6.99	5.96	3.76

The final result shows that the BD Wedding Planner is placed at the last position with the lowest score from the scoring model. Scores of Event Up and MGN Events are quite close but both are not at a satisfactory level. Providing a chart below the scoring model to show the outcome graphically and more clearly.

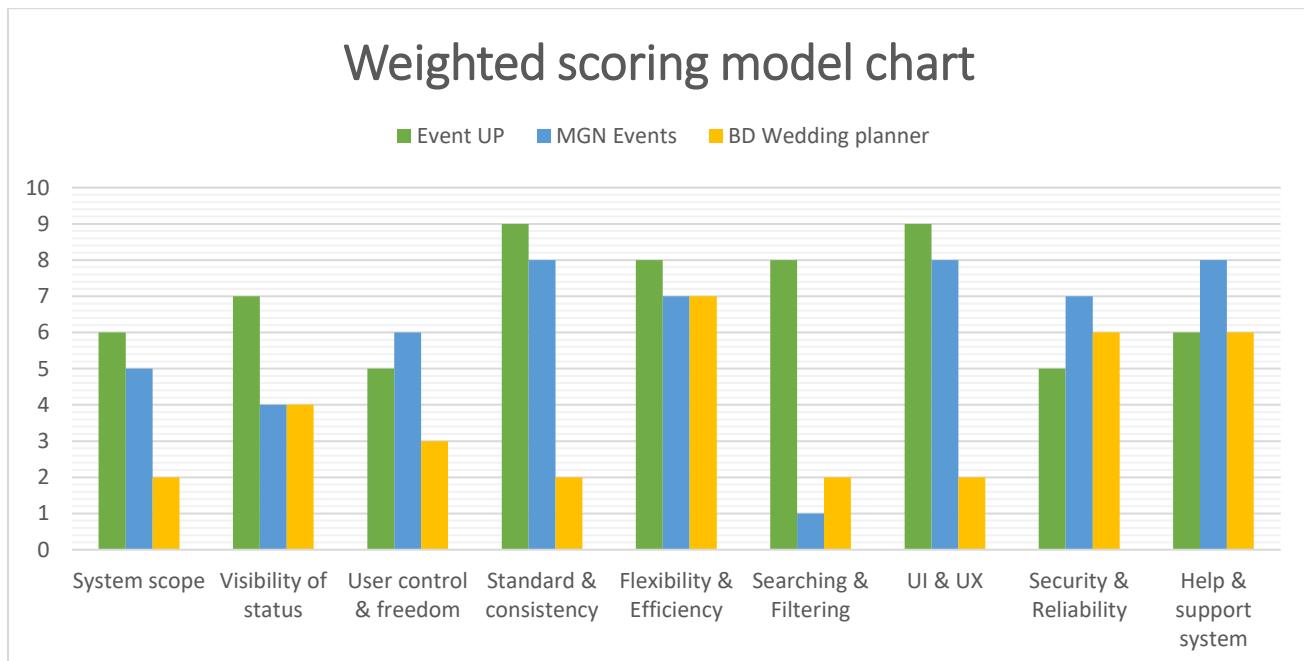


Figure 6: Weighted scoring model for product research

Chapter 4

Title:

Legal, Social, Ethical and Professional issues and consideration

Chapter contents :

- ✓ Introduction
- ✓ Discrimination and bias
- ✓ Security and data protection
- ✓ Licensing
- ✓ Legal impact
- ✓ Conclusion

In this chapter, I will be discussing some key topics which are relevant to legal, social, ethical, and professional aspects of the software industry. I am discussing those topics below. I will also mention how I will obey these in this academic project.

Discrimination & bias

Discrimination is not expected from any kind of public software. It is necessary to make a promise of providing equal facilities to every user. Discrimination is very harmful to the software industry. People who are responsible for building any software must be aware of this fact. Using any kind of picture, voice, video, icon, logo, functional process that can indicate discrimination to any race, gender, religion, skin color should be strictly avoided. Recently, there have been some incidents where some well-known AI software was providing biased results. Due to this, they had to face a lot of criticism later on. (Joy Buolamwini, 2019) So, it is always wise to take these matters into account. In this project, these factors will be in consideration at its best.

Security and data protection

This is quite important to maintain data protection and security in the software. While using any software, the user has to provide various important data as an input to the system. The system stores those data into their database and uses them with the prior consent of the users. It always needs to be ensured that the data system owners are storing is not accessed by any third party because of any security breach. Moreover, they won't use or sell those data intentionally for any unfair means. So, it is clear that there are two things need to be ensured. One is Security which is classified into three parts, Confidentiality, Integrity, and availability. Another one is Data protection, which identifies the conditions of processing the user's personal data. (Huovinen, 2010) In this project, these factors of security and data protection must be ensured.

Licensing

Software licensing is an important factor to be considered. Every software is build using dedicated coding frameworks and libraries which are licensed. Using any unlicensed codes in software is not legal. In this project, I will be using many open source libraries & frameworks. I will provide a full list of my used packages to ensure transparency.

Legal impact

Every software that is made has to ensure, that it obeys the nation's rules and laws firmly. In our country, the ICT act was first established in the year of 2006. Later on, it was revised and strengthened in the year of 2013. The act mentions several rules and regulations about using digital platforms for various purposes. Moreover, in the year 2018, the latest GDPR law about

data protection and integrity was first implemented. Which mentions about various terms and policies about processing user data. (Jeanette Herrle, 2019) Nowadays people are quite dependent on technologies. The number of internet users is increasing drastically in our country. In this project, I will be adhering to the established national and international laws about software throughout.

Chapter 5

Title:

Development method and tools

Chapter contents:

- ✓ Introduction
- ✓ The necessity of development methodology
- ✓ Comparison between methodologies
- ✓ Recommendation with justification
- ✓ Recommendation gathering tool
- ✓ Technology tool with justification
- ✓ Conclusion

The necessity of development methodology

The software development methodology is a term, used as context for the betterment in the software development process. It helps to ensure the high success rate of any software development project. Not following any development methodology can cause a delay in project delivery, crosses project budget, or fail to meet customer expectation. One of the major things that a software development methodology ensures meetings between the client and the development team from time to time. which helps to grow the trust among them, Clients can share their ideas & thoughts, Development team can discuss their problems or barriers with the project owners. There are lots of other things such as it provides a proper guideline for every step of the development, ensures proper analysis of requirements, Helps in decision-making processes, etc. Furthermore, there is a key rule that there are many different types of software development methodology. Like, Waterfall, iterative, agile, etc. All of these follow some different principles. (Segue Technologies, 2015) Nowadays, agile is a widely used and most popular software development methodology. In this project, I will choose the most appropriate frameworks which will work best with this project. The comparison between frameworks is given in further sections.

Comparison between methodology

There are several development frameworks introduced until now. Each of them works following different principles and strategies. In this part, I will be comparing three development frameworks based on their working structure and principles. Then I will choose one of the most suitable for this project. Three frameworks I will be comparing are,

I. Scrum

Scrum is one of the most popular agile development frameworks. It is widely known as a framework rather than a methodology. It purely follows agile principles. Scrum doesn't specify any certain practices, but let the team decide according to their convenience. In scrum, the project starts with a clear set of business needs. Later on, those were identified as product backlogs. Those product backlogs are the core deliverables from each defined timeboxes called Sprint. A sprint starts after the sprint planning meeting and during the sprint development team only focuses on its development works. Even no changes in requirements are allowed during this time. Because at the end of the sprint, they have to deliver their assigned tasks which are functional and tested. Instead, a daily scrum meeting is conducted by the scrum team to discuss any blocking or advisory tips for the development. This was a short discussion on how scrum works, providing a diagram below to provide a more clear picture. (Sliger, 2011)

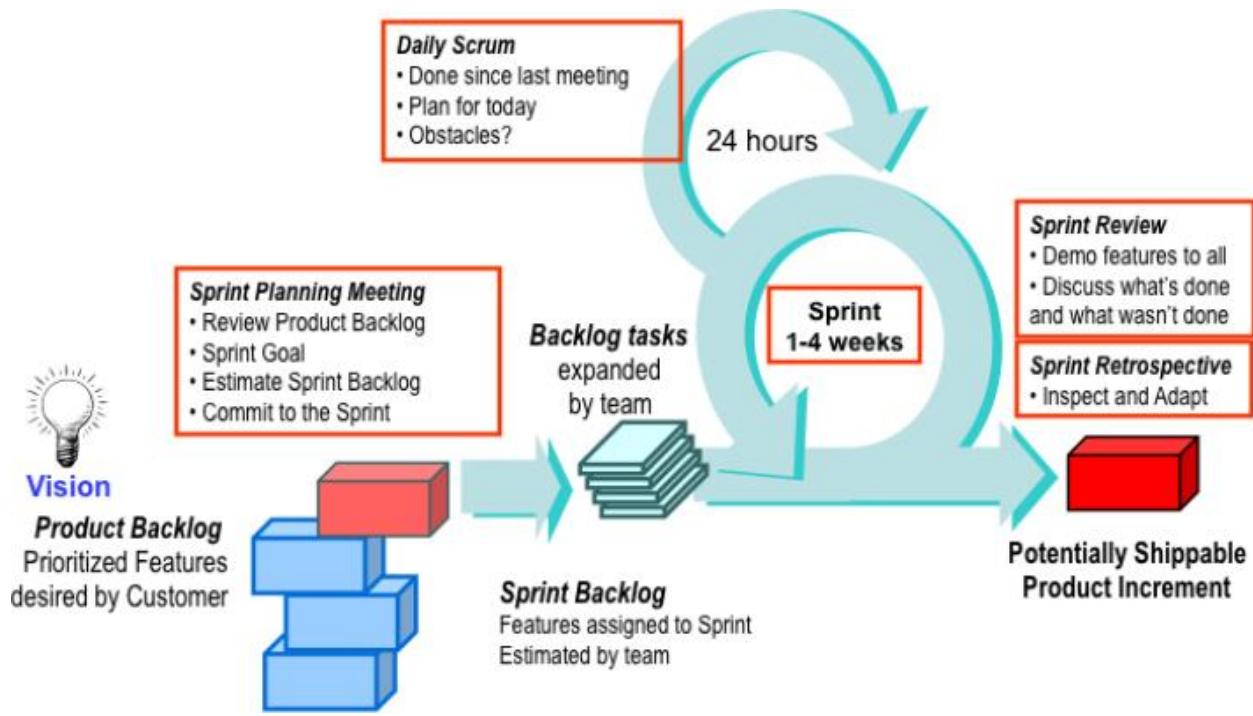


Figure 7: Scrum process

II. DSDM

DSDM is another famous development framework for agile. There are some specific principles and philosophies that need to be followed while using the DSDM framework. According to the Agile Business Consortium, DSDM philosophy is, When a project is aligned with clear business goals, ensure frequent deliveries with the collaboration of a Motivated and empowered team, then it produces the great business value. (Agile Business Consortium, 2019) DSDM also has some strong principles inspired by their philosophy. Where they have classified 8 points that need to be ensured to make a project successfully produce some business value. For example, some of them are Focusing on business needs, iterative delivery, product quality, on-time delivery, etc. I am providing a picture below where all the principles are given.

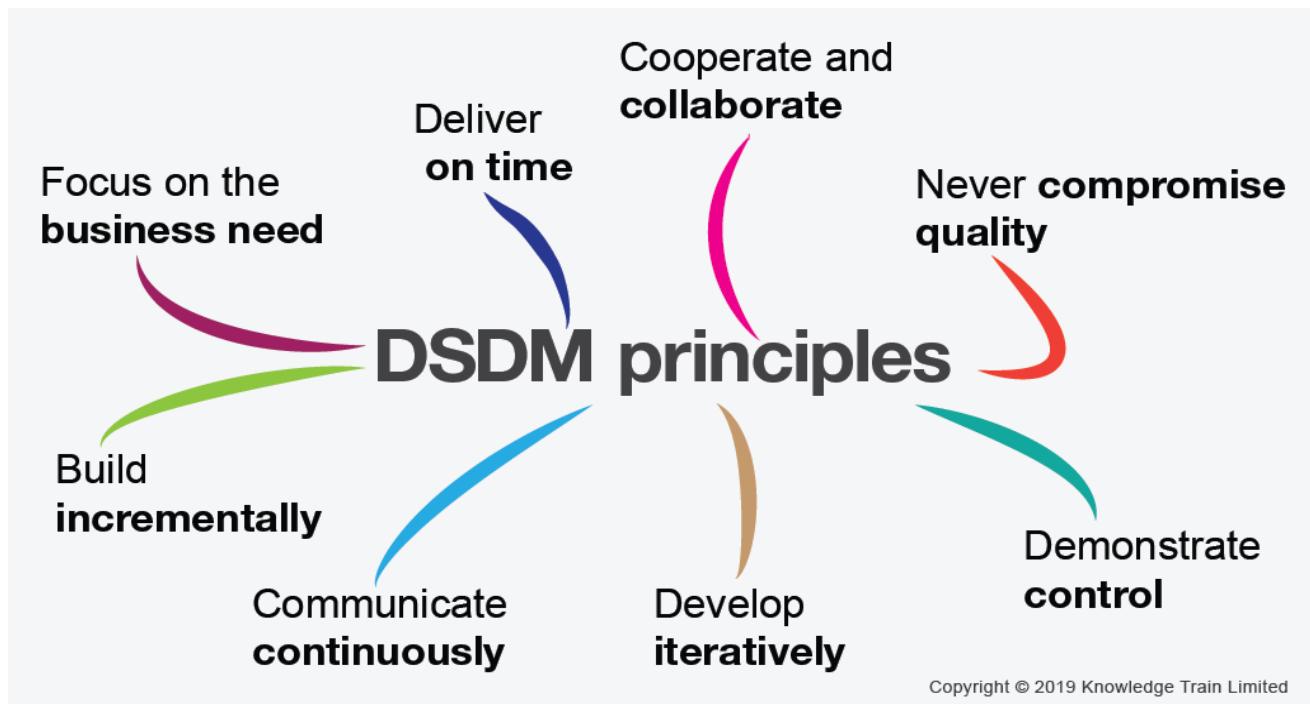


Figure 8: DSDM principles (Simon Buehring, 2019)

III. Waterfall methodology

Waterfall methodology is a linear software development approach that was first introduced by Winston W. Royce in 1970. In this process project development goes in a sequential approach. This process is widely used because of its logical sequential steps and ease of implementation. The waterfall methodology has 5-7 linear phases or steps. Every next phase can't be processed until the previous one is completed. Mr. Royce has defined those phases like the Requirements phase, Design phase, Implementation phase, Verification phase & Maintenance phase. These terms of phases can vary from company to company. One of the core benefits of using waterfall is its adaptability. But this methodology is losing its popularity day by day since the agile has been introduced. (Project Manager, 2020) The acceptance of agile is quite remarkable because of its on-time quality product delivery. The core disadvantage of the waterfall is, once the software goes on the testing phase and any issue arises, then the development team has to roll back to the first phase where the concept was not well-thought. It becomes quite difficult to manage these inconsistencies and in some cases, it causes failure of the project. Providing a picture below which will show the working structure of waterfall methodology

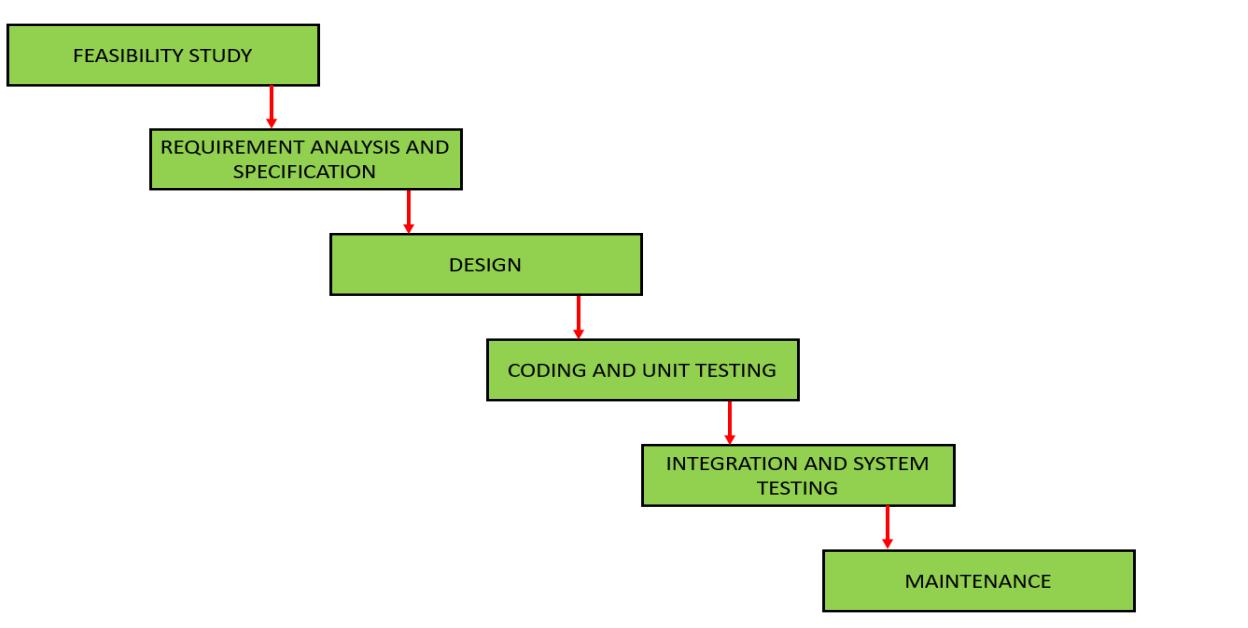


Figure 9: Waterfall work structure (Pal, 2019)

In this section, I have done thorough research about different development methodologies. I have identified their working strategies, philosophies, and principles. Now I will decide which approach I am going to use for this project. In the next section, I will be discussing my choice with proper justification.

Recommendation with justification

After the research about three commonly used development methodologies, I have decided to use scrum for this project. Though I will be using Scrum for this project, I will partially follow the waterfall technique for requirement analysis in the first step. As this is a single academic project so the risk of changing requirements is quite low. All I have to do is clarify my thoughts and business needs for this project. That will help me to efficiently move on upcoming phases. Otherwise, as a single developer, it will be quite difficult for me to handle the project. However, I am providing the reasonings or justification why I am choosing Scrum for this project below.

I. Quickly releases usable product

Scrum always produces usable products quickly. After every sprint product owner can see some functional output. So that they can make an idea about what they are building and they can suggest for improvement. The regular and continuous improvement is the reason why scrum produces a good product finally. Moreover, daily scrum meetings & sprint retrospections are done to enhance the development process.

II. Lower risk

Scrum always helps to mitigate the risk of the absolute failure of the project. This happens because of working a short time-boxes. After every timebox, the stakeholder of the project can check if the actual product is meeting their requirement or not. If anything seems wrong they immediately take action against it. Moreover, Scrum always produces a tiny but functional output at the end of a timebox. So it is not possible to produce something unusable or disaster following the scrum development technique.

III. Lower costs

Lower risk always ensures the lower cost behind a project. The project budget doesn't usually cross its limit too bad until some unwanted situation is created. Scrum is a process where the product is built based on customer feedback. If anything, wrong is happening it gets noticed before any disaster. So, if the team decides to stop, then the cost of development gets stopped.

IV. Best in handling changes

Scrum is always best for handling changes. It always welcomes changes in the project requirement. After every end of the sprint, the product goes for a review to get feedback about what they are building. Then if anything seems wrong, the project owners suggest applying some change. So, the working structure of scrum always has the preparation of welcoming changes.

V. Higher productivity

Scrum increases the productivity of the development team. The development team can conduct a short 15 minutes meeting daily discussing their development progress, further plan, and any blocking they are facing. This meeting improves the productivity of working members. Moreover, after every sprint, a retrospective session is held to improve their productivity by discussing transparency, inspection, and adaption.

(Agilest.org, 2020)

Because of these great benefits, I have chosen **scrum** for this project. In scrum, there are three different roles the product owner, the scrum master, and the team. In this project, I will be the only person in the team as this is a single project. My project supervisor Mr. Mustafizur Rahman will help by playing the role of a scrum master.

Requirement gathering technique

Gathering requirements is important for any kind of project research. Without a proper set of business requirements, it is not possible to build any project successfully. Because the developer must know the requirements throughout the development works. Requirements are gathered based on data. To gather these data there are many techniques to follow. Some of the most common data gathering tools are Brainstorming, interviews, questionnaire, survey, observation, Focus groups, etc. (BrightHub PM, 2009) There are two types of data gathering, one is primary data collection and another is secondary data collection. Primary data collection refers to conducting these above-mentioned techniques and activities. Secondary data collection is working based on previously collected data by someone else. The formerly mentioned techniques are useful but don't apply for all kinds of projects or companies. There are certain reasons relevant to project size, time, scope, and budget. For example, the Focus group technique is executed by gathering a group of users or customers together and demonstrate the product or high fidelity prototype. Later on, their feedback about needs, opportunities, and problems are collected. Most often, it becomes hard to gather too many users and customers together and demonstrate the product in front of them, especially for these types of academic projects. For this project, I will be using primary and secondary both type of data collection techniques. For primary data gathering, I will use the Survey questionnaire and Observation method in this project. I will use the Document analysis as the secondary data collection technique.

Requirement analysis tools with justification

After gathering requirements, the next important step is refining those data by conducting a thorough analysis. Without proper analysis, understanding of requirements is impossible and without clear requirement understanding, it is not possible to produce successful software. So, requirement analysis is known as a core part of software engineering. Requirement analysis involves all activities that help to transform raw requirements into the implementation. These activities help to produce a human-understandable specification of requirements. There are many tools and techniques to conduct these analyses such as the UML class diagram, Data flow diagram, Data dictionary, Entity relationship diagram, Pseudocode, etc. (Tutorials Point, 2020) Each of these tools are used for different purposes. In this project, I will be some useful techniques to analyze my project requirements. I am mentioning my choices with justification below.

UML class diagram:

Unified modeling language as known as UML was created to produce a common, semantically, and syntactically rich visual modeling language that can be used to simplify, design, and implement any critical software. UML is not any programming language but it is widely used to generate software codes with the help of its tools. It has a direct relation with object-oriented analysis. Using UML is count as best practice for building and documenting any software. In this project, I will create UML diagram for my respective software.

Data flow diagram:

ERD diagram:

Chapter 6

Title:

Planning

Chapter contents:

- ✓ Introduction
- ✓ Project plan
- ✓ Testing plan
- ✓ Risk management plan
- ✓ Change management plan
- ✓ Quality management plan
- ✓ Conclusion

In this chapter, I will discuss the whole project planning. My discussion topics will be about project planning, test planning, risk management planning, change management planning & quality maintenance planning. All this planning information will be provided against this academic project. I am providing further discussion section-wise in upcoming sections.

Project plan

Project planning is an essential part of any project. It is like a formal document that describes the plan of project implementation and control. Without proper planning of time, resources, and tools it is impossible to implement a project successfully. In this part, I will provide thorough planning over the whole project.

Management plan and work breakdown structure

Work breakdown structure as known as WBS is a strategy of managing the works of large projects. In this strategy, project works are broken down into smaller parts. It helps to establish a common understanding of project scope. WBS is used as the base of project planning, execution, controlling, monitoring, and reporting. (Visual Paradigm, 2020) For this project, I am dividing the big tasks into small phases for better output. I am providing the WBS for this project specifying the time duration in the next section.

1	Tasks - Pre project	Start date	End date	Duration (days)
2				
3	Project proposal	7-Dec	14-Dec	8
4	Meeting	15-Dec	15-Dec	1
5	Introduction	16-Dec	17-Dec	2
6	Aims & objectives	18-Dec	18-Dec	1
7	Scrum meeting	19-Dec	19-Dec	1
8	Literature review	20-Dec	23-Dec	4
9	Scrum meeting	24-Dec	24-Dec	1
10	Recommended approach	25-Dec	25-Dec	1
11	Product research	26-Dec	28-Dec	3
12	Scrum meeting	29-Dec	29-Dec	1
13	LSEP considerations	30-Dec	31-Dec	2
14	Methodologies & Tools	1-Jan	2-Jan	2
15	Scrum meeting	3-Jan	4-Jan	2
16	Total days =			29

Figure 10: Pre-project phase WBS

	Tasks - Planning	Start date	End date	Duration (days)
3	Sprint planning	5-Jan	5-Jan	1
4	Test planning	6-Jan	7-Jan	2
5	Scrum meeting	8-Jan	8-Jan	1
6	Risk management plan	9-Jan	10-Jan	2
7	Scrum meeting	11-Jan	11-Jan	1
8	Change management plan	12-Jan	13-Jan	2
9	Scrum meeting	14-Jan	14-Jan	1
10	Quality management plan	15-Jan	16-Jan	2
11	Scrum meeting	17-Jan	17-Jan	1
12	Total days =			13

Figure 11: Planning phase WBS

	Tasks - Foundation	Start date	End date	Duration (days)
3	Feasibility study	18-Jan	20-Jan	3
4	Rich picture	21-Jan	21-Jan	1
5	Organizational structure	22-Jan	22-Jan	1
6	Scrum meeting	23-Jan	23-Jan	1
7	Requirement gathering	24-Jan	28-Jan	5
8	Problem area identification	29-Jan	31-Jan	3
9	Possible solution	1-Feb	2-Feb	2
10	Requirement list specification	3-Feb	4-Feb	2
11	Requirement prioritization	5-Feb	7-Feb	3
12	Scrum meeting	8-Feb	8-Feb	1
13	Requirement catalogue	9-Feb	10-Feb	2
14	Scrum meeting	11-Feb	11-Feb	1
15	Review of technology	12-Feb	14-Feb	3
16	Total days =			28

Figure 12: Foundation phase WBS

	Tasks - New system analysis and development	Start date	End date	Duration (days)	Status
2					
3	Usecase diagram	15-Feb	16-Feb	2	Completed
4	Database desisgn	17-Feb	20-Feb	4	Completed
5	Class diagram	21-Feb	22-Feb	2	Completed
6	Sequence diagram	23-Feb	24-Feb	2	Completed
7	Scrum meeting	25-Feb	25-Feb	1	Completed
8	New system module	26-Feb	21-Mar	25	Completed
9	High fidelity prototypes	22-Mar	26-Mar	5	Completed
10	Possible solution breakdown	27-Mar	1-Apr	6	Completed
11	Test case	2-Apr	5-Apr	4	Completed
12	Test execution	6-Apr	16-Apr	11	Completed
13	Scrum meeting	17-Apr	18-Apr	1	Completed
14	Total days =			63	

Figure 13: New system analysis & development phase WBS

	Tasks - Implementation	Start date	End date	Duration (days)
1				
2				
3	Deployment	19-Apr	26-Apr	8
4	Scrum meeting	27-Apr	27-Apr	1
5	Evaluation	28-Apr	30-Apr	3
6	Critical Appraisal	1-May	5-May	5
7	Lessons learned	6-May	8-May	3
8	Conclusion	9-May	10-May	2
9	Total days =			22

Figure 14: Implementation phase WBS

Resource allocation

Resource allocation is important to start any project. It refers to allocating manpower, time, and equipment tasks by task properly for the project. Providing the resource allocation plan for this project below.

1	2	Modules of Eventmanagerpro	Time (days)	Start date	End date	Resource
3	Pre-project preparation	9	7-Dec-19	15-Dec-19		Analyst, Scrum master, Product owner
4	Introduction	4	16-Dec-19	19-Dec-19		Analyst, Scrum master, Product owner
5	Literature review	6	20-Dec-19	25-Dec-19		Analyst
6	Product research	4	26-Dec-19	29-Dec-19		Analyst
7	LSEP considerations	2	30-Dec-19	31-Dec-19		Analyst, Product owner, End user
8	Methodologies & Tools	3	1-Jan-20	3-Jan-20		Analyst, Developer
9	Planning	14	4-Jan-20	17-Jan-20		Analyst, Developer
10	Feasibility study	3	18-Jan-20	20-Jan-20		Analyst, Developer
11	Requirement analysis	22	21-Jan-20	11-Feb-20		Analyst, Developer, End user
12	Review of technology	3	12-Feb-20	14-Feb-20		Analyst, Developer, Scrum Master
13	New system design & analysis	11	15-Feb-20	25-Feb-20		Analyst, Developer
14	Engineering	36	26-Feb-20	1-Apr-20		Analyst, Developer
15	Testing	16	2-Apr-20	18-Apr-20		Analyst, Developer, Tester, End user, Product Owner
16	Deployment	9	19-Apr-20	27-Apr-20		Analyst, Developer, Product Owner
17	Evaluation	3	28-Apr-20	30-Apr-20		Analyst, Developer, Product Owner
18	Critical appraisal	5	1-May-20	5-May-20		Analyst, Product owner
19	Lessons learned	3	6-May-20	8-May-20		Analyst, Developer
20	Conclusion	2	9-May-20	10-May-20		Analyst, Developer, Tester, End user, Product Owner
21	Total days =	155				

Figure 15: Project resource allocation

Time allocation

Allocating time is an important task of project planning. In scrum, project works are done in several timeboxes known as a sprint. As I am following the scrum framework for this project, I have breakdown my project works between several sprints. I will work in 11 sprints and each of them will 14 days long. I am providing a detailed breakdown below.

Sprint names	Start date	End date	Duration
Sprint 1	7-Dec-19	20-Dec-19	14
Sprint 2	21-Dec-19	3-Jan-20	14
Sprint 3	4-Jan-20	17-Jan-20	14
Sprint 4	18-Jan-20	31-Jan-20	14
Sprint 5	1-Feb-20	14-Feb-20	14
Sprint 6	15-Feb-20	28-Feb-20	14
Sprint 7	29-Feb-20	13-Mar-20	14
Sprint 8	14-Mar-20	27-Mar-20	14
Sprint 9	28-Mar-20	10-Apr-20	14
Sprint 10	11-Apr-20	24-Apr-20	14
Sprint 11	25-Apr-20	10-May-20	15
Total days			155

Figure 16: Sprint planning

Based on this sprint breakdown, I am providing a sprint Gantt chart below to clarify the breakdown more.

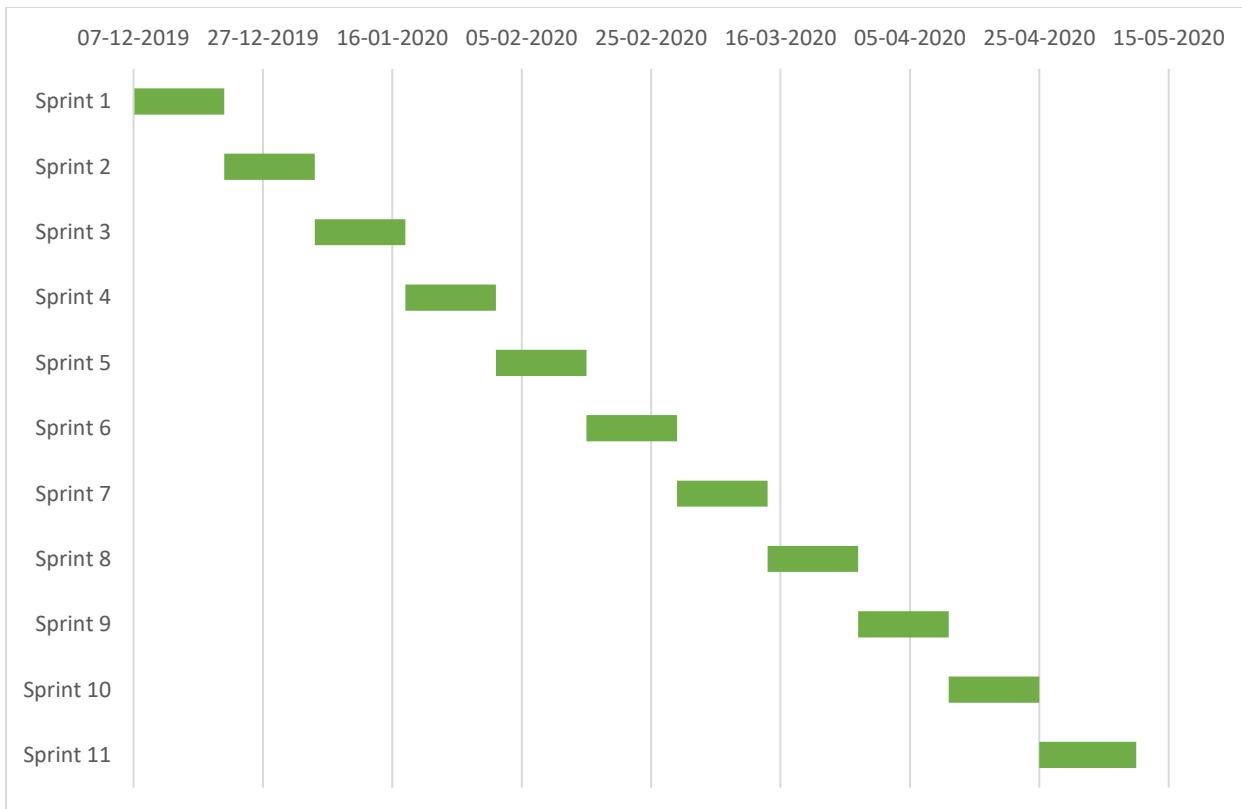


Figure 17: Sprint Gantt chart

Activity network

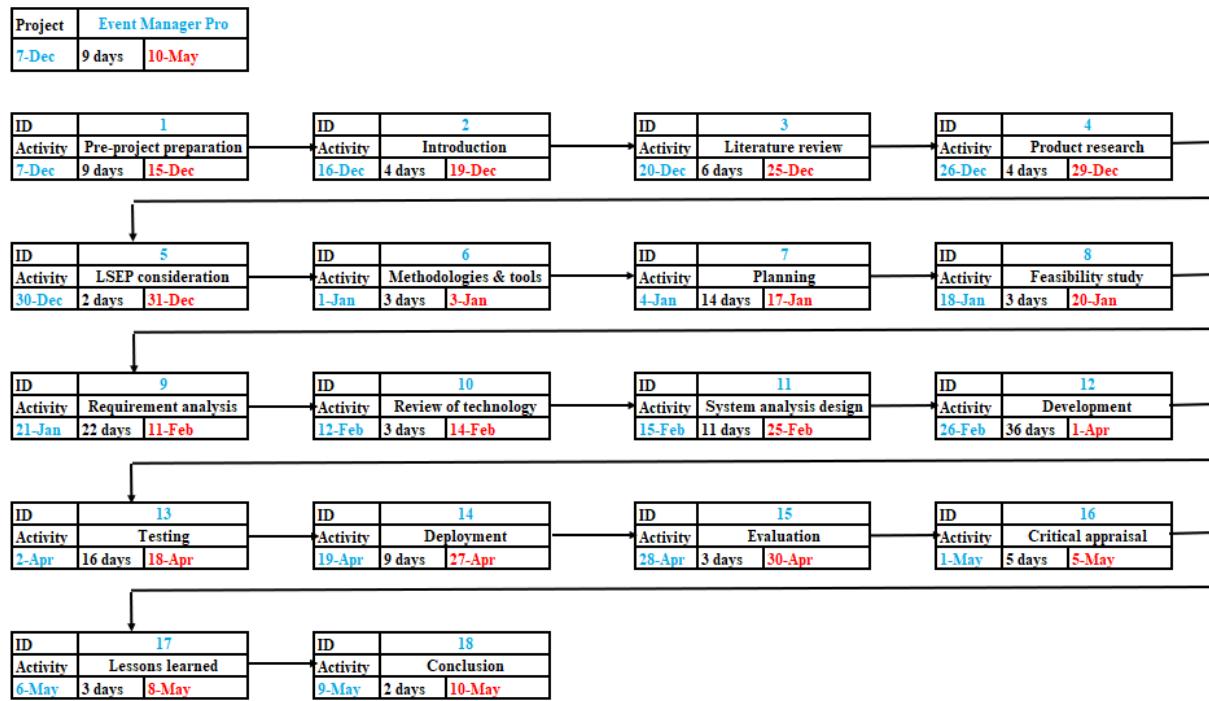


Figure 18: activity network diagram

Critical path

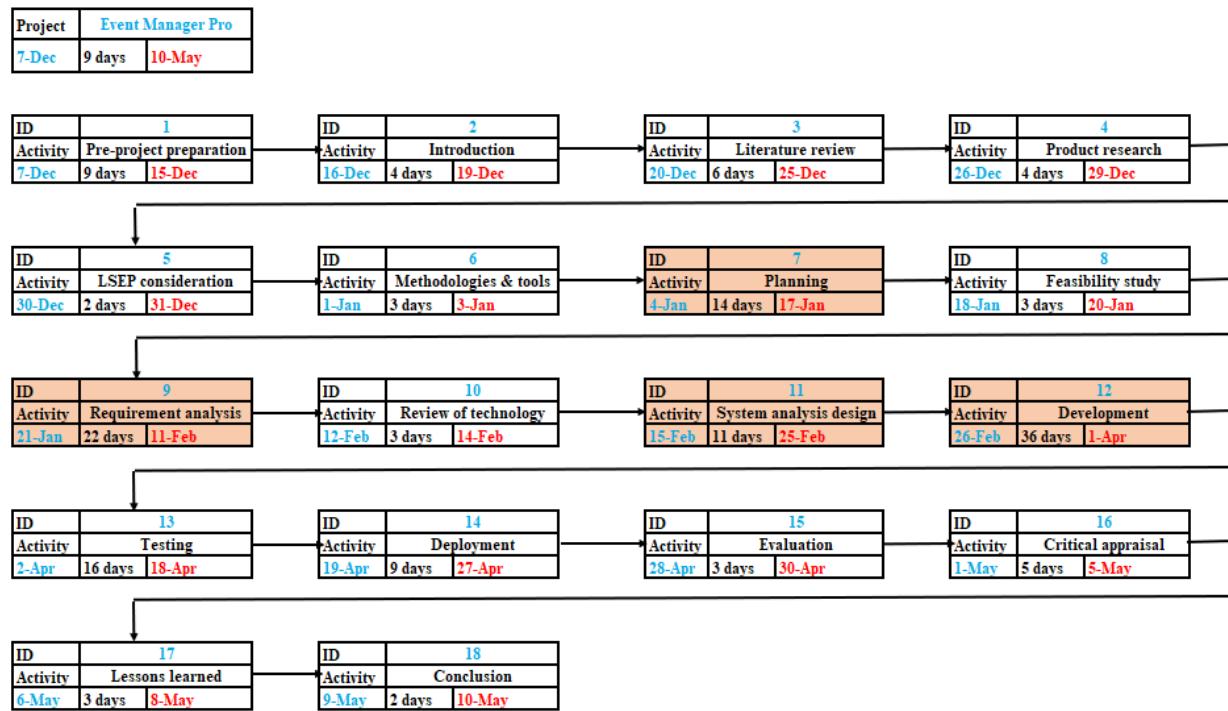


Figure 19: Critical path

Gantt chart

Providing the Gantt chart part by part below, which will reflect a clear view of whole project planning.

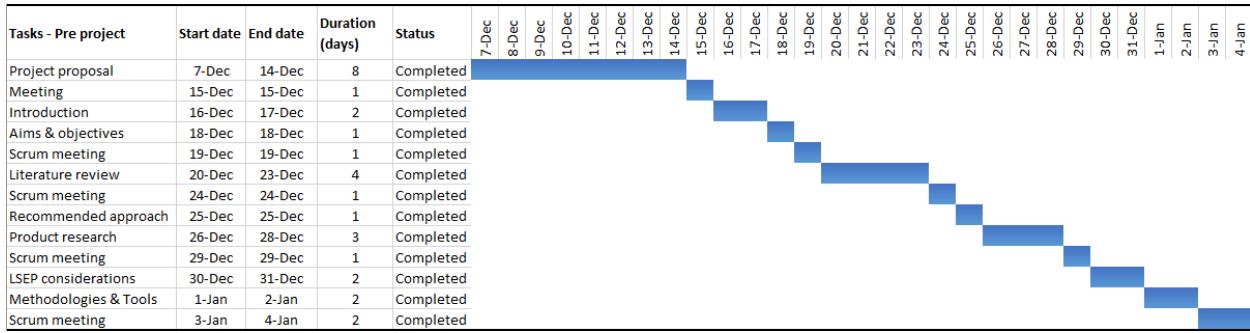


Figure 20: Pre-project Gantt chart

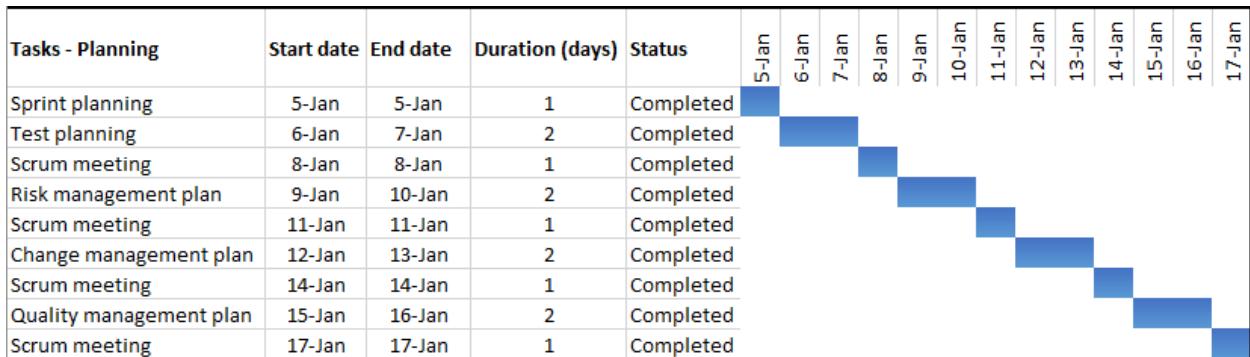


Figure 21: Planning Gantt chart

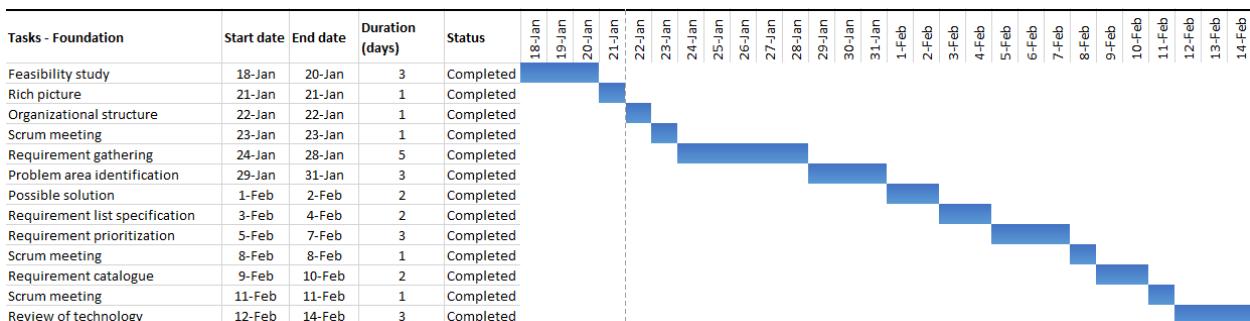


Figure 22: Foundation Gantt chart

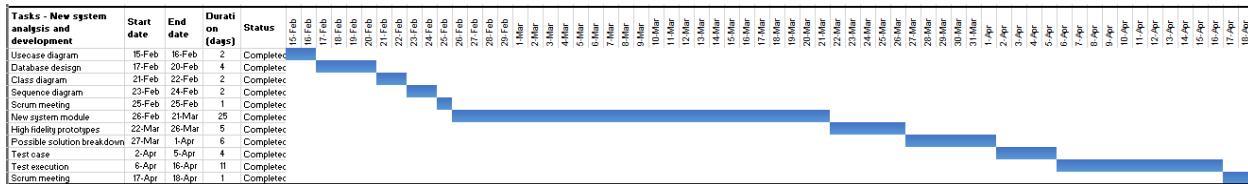


Figure 23: New system analysis & Development Gantt chart

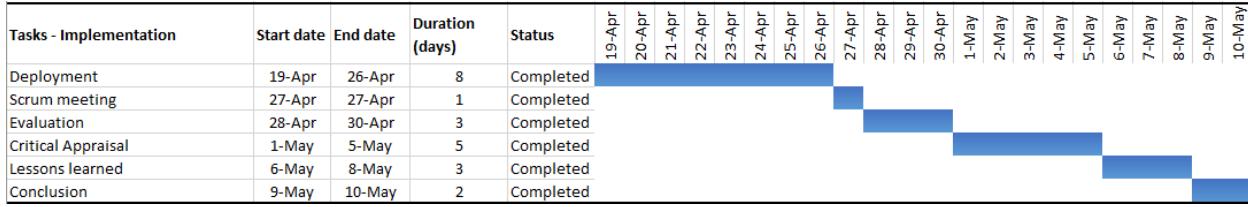


Figure 24: Implementation Gantt chart

Testing plan

To ensure the quality of software there is no alternative to testing. Proper testing of any software leads to a successful product. To test properly there is always needs to be a plan. I am providing a test plan below by describing different forms of testing which are required for this project.

Required test

There are various types of software testing. Each type of testing ensures a different type of quality of the software. I am describing those testing types below which I will be using to test the software of this project.

Unit testing

Unit testing refers to testing the software by dividing it into individual units and components. The purpose of unit testing is to test the performance of each unit of software code based on expected output. This is done during the development phase by the developers. It isolates a section of codes and validates its correctness. (Guru99, 2020) This testing is one of the most important. I will perform this testing in this project.

Integration testing

Integration testing is a process where relevant parts or units of the software are combined and tested for its efficiency and reliability. Exposing the faults and errors in the integrated units is the prime objective of this type of testing. After proper unit testing, Integration testing is a must.

Because most of the software doesn't work properly at the first attempt after the integration of several parts. In this project, I will conduct integration testing to ensure the quality of the software. (Software Testing Fundamentals, 2019)

Module testing

Module testing refers to testing a sub-program, sub-class, sub-process of the system instead of testing the whole software at once. The purpose of this testing is not to demonstrate the functionality of the system but to focus on the errors. It is a kind of white box testing. (Guru99, 2020)

Acceptance testing

In this process, the software is tested to ensure its acceptability. Evaluating the software based on customer or business requirements is the prime of the purpose of this test. It uses the process of black-box testing. (Software Testing Fundamentals, 2019) For this project, I will be using this type of test.

Performance testing

Performance testing is the process where system speed, responsiveness, stability are being tested. This test is usually done in a production environment. Some important parameters that tested are Data transfer rate, Network bandwidth, reliability, Workload efficiency, etc. (TechTarget, 2020) This test is important to identify whether the system performance is as expected or not.

Security testing

Security testing is one of the most important testing categories. It tests and reveals the vulnerabilities of the system. Conducting this test ensures that, the system is risk-free from all types of security threats, data loss, a break of system authentication, etc. The major goals of security testing are, identify threats, Measure potential vulnerability, detect possible security attacks, and help developers fixing the security issues. (Geeks for Geeks, 2020)

Test case

The test case is the tool of software testing which contains the test input specification, test execution procedure, test execution conditions, test expected result, and tested final results. These are some common necessary elements that a test case usually has. There can be more information depends on the testing type of software type. These test cases are used to determine the test results of the system. In this system, I will be using test cases to test the program. I am providing a sample test case below.

Test case Id:		Checked time (s):	
Test type:			
Test details:			
Expected output:	Test result:	Pass / Fail logs:	

Figure 25: Test case template

User acceptance testing

This type of testing is done by the actual end-user. It is also known as beta testing or end-user testing. This is the final testing phase of any software before releasing for the actual market. I am providing the test case sample below for the user acceptance test.

User name:		User role:	
Test case Id:		Checked time (s):	
Test type:		Test device:	
Test details:			
Expected output:	Test result:	Pass / Fail logs:	

Figure 26: UAT testing template

Test environment

An important task of testing software is, making the environment ready to conduct different types of tests. Because proper software testing requires different browsers, operating systems, devices, valid and invalid sets of data. So that the tester can use different devices or enter different types

of values to test the software. I am providing a list of essentials below to create a proper testing environment.

Sl. no.	Component name	Component types
1.	Device	Desktop, Laptop, Smartphone, Tablet
2.	OS	Windows, Linux, macOS
3.	Browsers	Google Chrome, Mozilla Firefox, Safari, Edge
4.	Database	MySQL server
5.	Connection	Wi-Fi, 4g
6.	Data	User data

Risk management plan

Risk management is known as managing probable risks for a specific project. In every project, some risk factors can cause the failure of the project. Risk management includes identifying the risks, assessment of probable risks, mapping of risk assessment, and risk precaution, etc. Properly planning risk management can prevent this type of failure. For this project, I am making a proper plan for risk management in further sections.

Risk identification

There are several types of risk which can collapse a project at a certain stage. I am identifying those below,

Sl. No.	Risk title	Reasons for occurring	Possible impact
1.	Changing requirements	If the project requirement changes too frequently.	This can cause a poor outcome and increases complications in development.
2.	Requirement understanding gap	When the expectation of the project is not fully understood to the developer.	it can cause a delivering unwanted product at the end.
3.	Poor architecture and design	It happens if the system architecture is not well-defined in the analysis stage	It can create conflict in the development stage. That can cause a waste of time, effort and breaks the confidence of

			the developer as well. Sometimes the impact of the conflict is so high that it can cause even failure of the project.
4.	Communication gap	This happens when regular communication with the stakeholders is disturbed.	It can cause building an unwanted product when it doesn't meet stakeholders' expectations as a result of miscommunication
5.	Technological factors	When the chosen technology of this project doesn't fit properly for the project.	This can cause project failure due to the failure of maintaining the project quality or unable to meet project objectives sometimes.
6.	Organizational changes	Based on the scenario of this project, If suddenly any changes come in the event management industry	This can cause a big change in project architecture. That will increase the cost and effort of the project highly.
7.	Unprioritized requirements	If the requirements of the project are not prioritized well at the beginning.	This can cause building less important features first and sometimes there remains no time for building highly needed requirements. That lowers the quality of the project.
8.	External factors	Not considering legal, social, ethical, and professional factors seriously.	This is the reason why some projects may get banned despite being a wonderful project.
9.	Inefficient planning	Not every part of the project planned well.	There are several impacts of this like crossing project budget and time, get stuck in between the development phase, not

			prepared for any disaster, producing the lower quality of the project, etc.
10.	Loss of data	This can happen because of many reasons like a hard disk crash, the laptop gets stolen, intentional attack by a third party.	Loss of data can cause the failure of a project if the amount of loss is high. Sometimes it's not possible to recover the data.

Risk assessment

After proper identification, it is important to know the potential impression of each risk. Risk assessment refers to calculating the impact and chances of occurrence through an assessment mapping technique. I am assessing the above-identified risks using the technique below.

Risk id	Risk name	Impact rate	Occurrence rate
R_01	Changing requirement	10%	50%
R_02	Requirement understanding gap	25%	40%
R_03	Poor analysis	30%	50%
R_04	Communication gap	10%	20%
R_05	Technological factors	60%	10%
R_06	Organizational changes	40%	20%
R_07	Unprioritized requirements	50%	10%
R_08	External factors	60%	30%
R_09	Inefficient planning	10%	40%
R_10	Loss of data	60%	10%

Risk assessment scale is,

1% - 10% = Low

11% - 40% = Medium

41% - 100% = High

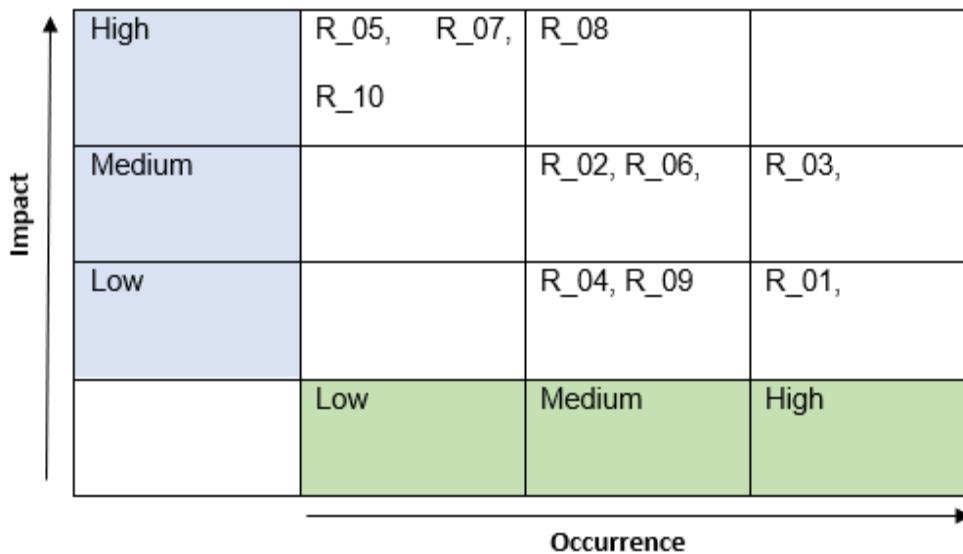


Figure 27: Risk assessment mapping

Risk action plan

Risk name	Impact rate	Occurrence rate	Action and precautions
Changing requirement	10%	50%	Try to convene the stakeholder not to give changes too frequently. Following agile principles strictly will help in this
Requirement understanding gap	25%	40%	Clarify the requirement more than once before starting development in full phase.
Poor analysis	30%	50%	Use all possible tools of analysis and design to strengthen the analysis. For example - UML
Communication gap	10%	20%	Triggering frequent communication from both sides.
Technological factors	60%	10%	Staying up to date with the technologies is the only suitable action for this risk.
Organizational changes	40%	20%	Having an assumption from before what kind of change may take place. Moreover, keep the system structure flexible while coding.
Unprioritized requirements	50%	10%	Using the MoSCoW rule properly while analyzing the requirements.

External factors	60%	30%	Try to analyze all LSEP factors from before. In the case of no knowledge taking professional advice is wise.
Inefficient planning	10%	40%	Plan the project well is the only option to prevent this risk.
Loss of data	60%	10%	Maintaining Git and cloud for code back up.

Change management plan

Changes are always expected in software development projects. But sometimes changes can affect a project too badly that it causes failure of the project. So, this chapter is necessary where planning for changes is going to be made. There are different kind of changes which can impact the project.

Factors that might cause the change

I am providing a list below about different kinds of changes.

- Change in functional requirement
- Change in organizational structure
- Change in non-functional requirement
- Change in organizational strategy
- System implementation environment

Considering business priority

The business goals need to be considered while taking any decision to change. The change which benefits the business directly should be prioritized. There will be some changes that don't have any impact on business goals. These changes should be count as optional. So decision factors should be depending on business values and priorities.

Change workshop

The participant of this workshop includes the project key stakeholders and system developers. This workshop is important to discuss the changes that may take place in the project. Some objectives or goals of this workshop are,

- Discussing steps for managing the latest changes
- Making a plan for instigating change
- Recognizing barriers and constraints.

- Manage and motivate team members about the change. Etc.

This workshop is really important to manage the change easily and fight back against the challenges. (Accelerate UK, 2020)

Key decision taker of change

The decision of applying any change in the project relies on someone responsible. The change doesn't take place depending on any outsider's decision. Only some certain people from the project team can take such decisions. Mentioning the key decision taker of this Scrum project

Product owner – The product owner of the project is a key decision taker. Any decision comes from them is valid.

Scrum Master – Scrum master is the person who keeps track of all activities following the scrum principle. The scrum master can be a decision taker as well.

Development team – The development team or anyone from the development team can be a decision taker who is actively involved with the development activities of the project. Because ultimately the change will be executed by the development team.

Quality management plan

Quality management is the task of overseeing all the activities to maintain the desired level of quality of the product. The plan that is made to run quality management is known as a quality management plan. Proper planning of quality management leads to produce a better product. I am describing the matter below.

Rules for quality maintenance

Four components of quality management can help to retain the quality of the product. I am providing them below.

- **Quality planning** - This is the process to identify the quality standard of the product and try to analyze how to meet that standard.
- **Quality improvement** - Bringing intentional change in process to improve the quality of the product
- **Quality control** - Maintaining the current status of quality and retain them for a long period.
- **Quality assurance** – Taking proper planned steps to ensure reliability so that a particular service will meet user expectations.

Quality plan and measuring meter

To assure the system quality, a measuring plan or meter is needed. I am providing a list of tools and techniques by which system quality can be measured.

- User acceptance measure
- Measuring system performance
- Measuring system usability
- Measuring security
- Compare the system with business goals

(CFI, 2020)

So, the end of this chapter is here. I have tried to cover all aspects of planning which are important for this project. I hope this planning will be helpful in my further sections.

Chapter 7

Title:

Feasibility study

Chapter contents:

- ✓ Introduction
- ✓ Technical feasibility
- ✓ Operational feasibility
- ✓ Economic feasibility
- ✓ Major organizational changes with the new system
- ✓ SWOT analysis
- ✓ Conclusion

To reduce the project failure risk, It is important to check the feasibility of the project. There are different types of feasibility such as technological, economic, operational, etc. this feasibility check ensures that the project is feasible from these perspectives. I am providing a brief discussion below describing different types of feasibilities for this project.

Technical feasibility

Analyzing the technical feasibility of a project is important. It helps to gather knowledge about the feasibility of used technology based on organizational capabilities. This process works to identify whether the organization has the financial capability, enough resource for maintenance, mental acceptance, and management capability to adopt the system in its current system. As I am building a web application, I am using the following technologies for this project.

- Framework: Scrum (agile)
- Programming language: PHP
- Query language: MySQL
- Front end: Html, CSS, JavaScript
- Backend framework: CodeIgniter
- Front end framework: Bootstrap, jQuery
- Design pattern: MVC
- IDE: Atom, Sublime
- Repository: GitLab
- Local server: XAMPP
- Browser: Google Chrome, Mozilla Firefox

I am providing a checklist below to assess the technical feasibility of this project.

Sl. No.	Criteria	Yes / No	Justification/steps taken
1.	Chosen technical infrastructure meets the specified requirements of the project.	Yes	The decision of building a web-application is more feasible for this type of project requirement.
2.	The chosen technology is cost-efficient.	Yes	The cost of maintaining a web application is way cheaper than android or iOS application.
3.	The engineering and architectural requirement of the project achievable.	Yes	Proper analysis will be done in further sections to ensure achieving the architectural requirement.
4.	The proposed technology is proven and manageable if any risk arises.	Yes	Following an agile framework reduces and manages the risk of the project properly.
5.	The development team can use the proposed technology appropriately.	Yes	I have done proper research and tested my capability before choosing the technologies for this project.
6 .	The main technological changes in delivered services can be satisfactory.	Yes	The impact of changes will be easily adapted by the organization. The more about this part is discussed in the economic feasibility section of this documentation.

Through this assessment, It can be said that this project will be technically feasible and the chances of facing any inconsistency will be lower. (PPP Certification, 2020)

Operational feasibility

The operational feasibility is about how well the organization will be able to operate the new system staying within its organizational structure. It is about the challenge any organization may face with adopting the new technology. Most often the organization fails to take all the advantages from the developed system. To ensure the operational feasibility some steps can be taken. I am providing them below.

- Making the process of the new system clear to the system handler.
- The evaluation should be done to determine whether the system benefits everyone in the organization or not.
- The impression of the implementation of the new system should be measured.
- Identify the group or people of the organization who will resist the new system with proper reasoning.
- Strategies should be made about how the organization will deal with the changes occurred because of the new system.
- Measuring the time & effort it will take to adopt the new technology.

(Jean Scheid, 2010)

Economic feasibility

Economic feasibility refers to identifying the financial benefit in terms of investment behind the project. If the outcome from the project is not remarkable year by year, then the project counts as a loss. So it is important to measure economic feasibility while implementing a new system. I am providing the details of the economic feasibility below. (Bowen, 2009)

Required hardware, software, and hosting cost

I am providing the approximate cost for required hardware, software, and hosting to install the new system and also the maintenance for 3 years. Some costs are required only once during the installation of the system. Providing the budget for three years separately below.

New system cost for the 1st year

Component name	Quantity	Unit price	Total price (BDT)
Desktop computer (core i 3 processor)	4	33,000	1,60,000
Operating system (windows 10)	1	23,000	23,000
Domain	1 year	1,000	1,000
Web hosting (Windows enterprise plan, 25gb disk space, MySQL database)	1 year	850 per months	10,200
Email marketing plan	6 months	3,500	21,000
Maintenance	1 year	10,000	10,000
Staff salary	1 person	8,000	96,000
Staff training	1 person	5,000	5,000
Total cost for 1st year =			<u>3,26,200</u>

Check **Appendix B** to view the data for the other two years.

All prices and data are collected from various E-commerce sites and vendors' websites, providing a proper reference for each. (Startech, 2020) , (Xeonbd, 2020) , (Xeonbd, 2020) , (Microsoft, 2020) ,

The summary of the above-presented data and calculation is, the organization has to spend **3,26,200 BDT** (approx.) for the first year, **1,27,700 BDT** (approx.) for the second year, and **1,28,900 BDT** (approx.) for the third year including installation and maintenance cost.

Net present value

The net present value known as NPV is about calculating the current cost for running and maintenance the organization. As the new system will bring some remarkable changes in the current business process. I would like to calculate the net present value of the organization to identify the yearly cost of the current manual approach. Providing the details below.

Component name	Quantity	Unit price	Total price (BDT)
Admin level managerial costs	1 year	15,000	15,000
Printing & paper-based cost	1 year	10,000	10,000
Traditional marketing cost (printing, leaflet, banners, flyers)	1 year	40,000	40,000
HR management cost	1 year	12,000	12,000
Maintenance	1 year	20,000	20,000
Staff salary	3 persons	8,000	2,88,000
Total cost for every year =			<u>3,85,000</u>

The cost every year the organization has to bear in manual approach is **3,85,000 BDT** (approx.)

Calculate possible earns

Here I will calculate the possible earnings from the system. There are many features in the system that will help to grow the business of an event manager. The automation system will increase the sales of the business as it will attract the customer and improve the trust more. An increase in sales means an increase in profit. Another profitable feature will be selling the QR code invitation sending system. The organization can charge for this feature. The organization will do profit from advertising on the website from the next year after implementation. They will also be able to charge a commission from the vendors for giving them a platform from the 3rd year. Besides all these, the automation system will deduct the regular managerial costs which will be also counted as a benefit. I am providing a calculation below to show the possible earns in three years.

Benefit	Year 1	Year 2	Year 3
Increase in profit	50,000	70,000	1,00,000

Advertising	10,000	30,000	80,000
QR code feature	20,000	50,000	1,00,000
Commission from vendors	50,000	80,000	1,50,000
Savings from the old system cost	58,800	2,57,300	2,56,100
Total benefit =	<u>1,88,800</u>	<u>4,87,300</u>	<u>6,86,100</u>

See **Appendix B**, check how I calculated these possible earnings.

Cost-benefit analysis

Cost-benefit analysis refers to calculating the benefit from the upcoming benefits from a project over its investment. In the above section, I have identified the possible costs and benefits of this new system for the next three years. Now I am calculating the benefit over cost and provide a final analysis report on the topic

Years	Benefits	Costs	Net profit
1st year	1,88,800	3,26,200	-1,37,400 (loss)
2nd year	4,87,300	1,27,700	3,59,600
3rd year	6,86,100	1,28,900	5,57,200

This calculation shows that there will be loss instead of benefit in the first year as the system is new there are some essential investments needed. Moreover, it will take some time for the system to be known and famous publicly. So, the amount of loss will be counted as an investment behind the system. From the second year, the system will start returning a profit and for the ongoing years, it will keep increasing. Which makes the system look promising. So, it can be assumed after a thorough analysis that the system will be economically feasible.

Major organizational changes with the new system

Checking with major organizational changes is also a part of the feasibility study. Implementing a new system always impacts an organization in various ways. I am describing the major organizational changes that may take place below.

Business structural change

Implementing a new system in business always impacts the business structure. It might affect the traditional approach of allocating tasks, coordination between team members, etc. The organization should handle these changes carefully.

Business working procedure

Implementing a new system means bringing automation into the working procedure. So it will put a big impact on the working procedure of the business.

Business policies

This might also enforce changing some business policies as there will be more services for them to offer. There is also a noticeable change in their existing service as well.

Business staff attitude

The business staff's attitude will be get impacted by implementing a new system. As the work procedure will change so they also have to change their traditional working style.

Chapter 8

Requirement analysis and specification

Chapter contents

- ✓ **Introduction**
- ✓ **Rich picture**
- ✓ **Organizational structure**
- ✓ **Project stakeholders**
- ✓ **Business and user requirement**
- ✓ **Specific problem area identification and description**
- ✓ **Possible solution**
- ✓ **Requirement list with specification**
- ✓ **Prioritizing requirement**
- ✓ **Requirement catalog**
- ✓ **Conclusion**

In this chapter, I will analyze the requirements for this project. Requirement analysis is very important for a software development project. Without proper analysis of requirements, a developer can't start development works.

Rich picture

A rich picture is a graphical presentation of the current scenario of a problem domain. I am providing the rich picture diagram for this project which will state the current perspective of different stakeholders.

Rich picture diagram

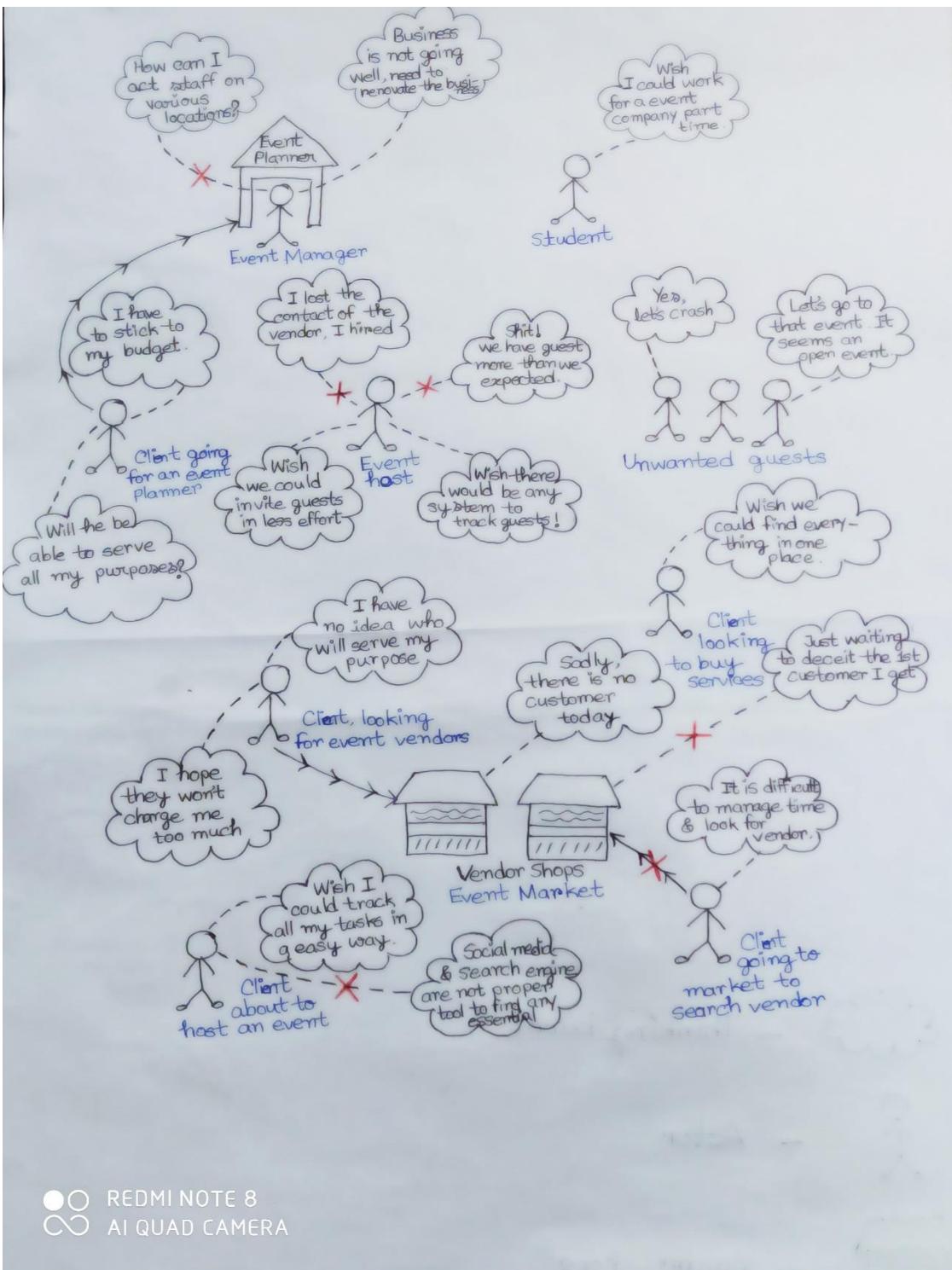


Figure 28: Rich picture

Rich picture legends

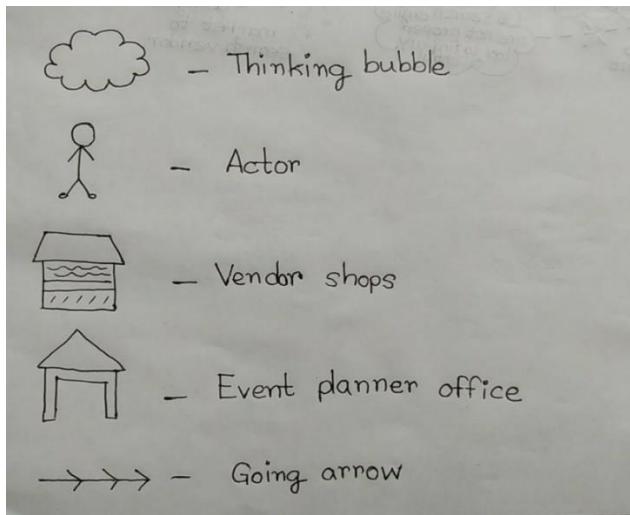


Figure 29: Rich picture legends

Rich picture description

The diagram I have made above clearly stating some already established problems in the event management industry. If I start describing from a client perspective, they face various types of troubles while they have to organize an event. Most of them do not have a proper idea where they will find the services that they are seeking. Using social media or search-engines is also frustrating because of getting biased results. So, they have to roam around from market to market and find vendors who will probably help them. Moreover, they also have the fear of getting deceived as they don't have a clear idea of prices. It becomes a matter of trouble for busy people to manage time, as these types of arrangements require too much time. There are too many items needed to successfully host an event such as food, decoration, lights, sound system, etc. So people always prefer arranging everything from one place rather than going to different vendors. So they prefer hiring event planners who provide them all the third party services and manages their event properly. But going to an event planner causes getting out of budgets sometimes. This is also a matter of concern for them. Event planners also face trouble to hire their staff. Staffs and workers are one of the core assets for an event planning business. But it becomes costly for them to hire too many permanent employees because this is a seasonal business. So they prefer hiring contractual employees when they have any project ahead. Which creates the conflict of finding worker at the right time and right location. The vendors also face trouble running their business because some of them don't get enough clients to make enough profit. So they start carrying the intention of deceiving the clients. Besides these types of arrangement reasons, a client faces another type of problem as well. Inviting the guests is a big task for an event host. Moreover, while

hosting an event sometimes they receive too many unwanted guests as a result of not taking proper precautions. Sometimes they lost the contact information of vendors or forgets important details. They also face trouble in managing various tasks of the event.

Rich picture key issues:

Key issues that exist and need to be solved in this problem domain are identified below.

- Many of the clients have a minimum idea about who can serve their purpose.
- Clients have the fear of getting overcharged.
- Clients are not able to track all their activities easily
- Clients do not find their all needs from one place.
- Clients are worried about crossing their budgets.
- Clients have no proper tool to track and manage their guests
- Clients have no manageable option to invite their guests.

Rich picture area of conflicts:

Mentioning the conflicts that the current system contains below.

- Event business owners face trouble finding appropriate staff.
- Vendors keep the intention of deceiving their customers.
- Clients have to sacrifice their lot of time roaming around from shops to shops.
- Clients do not get accurate information from existing resources.
- Clients receive too many unwanted guests at their event.
- Clients lose valuable information sometimes relevant to the event.

Organization structure

Providing the organizational structure of an event management business below. This diagram is made based on the observation of different event management business and thorough research about the common organizational structure of an organization. This may vary based on the size of the organization as well. Providing the structure below.

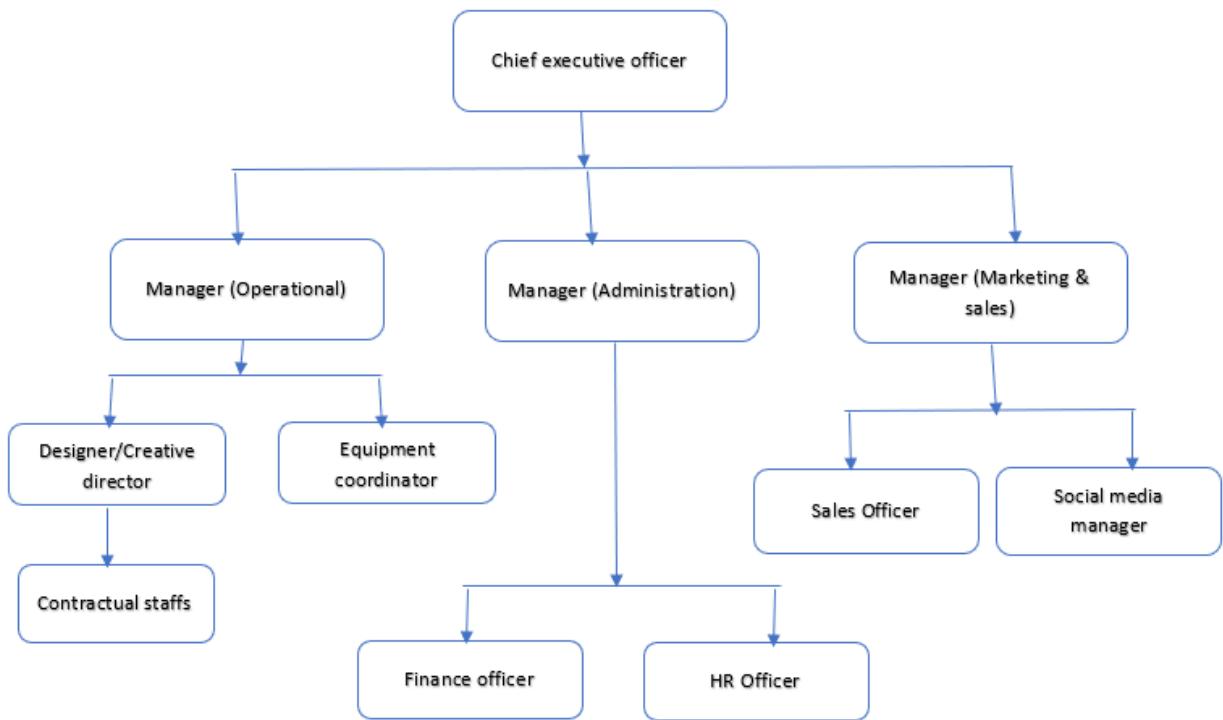


Figure 30: Organizational structure

Project stakeholder

According to the Project management institute project stakeholder refers to, “An individual, group, or organization who may affect, be affected by, or perceive itself to be affected by a decision, activity, or outcome of a project”. ISO 21500 also similarly defines this term. So, it means project stakeholders are a very important part of a project. Usually, the project requirements are generated by the stakeholders. I have identified key stakeholders for this project and providing the list below.

- Event planner/manager
- Client/Customer
- Event service provider vendors
- Staffs/workers

Business & user requirements

To gather business and user requirements I have chosen two techniques. As I have already mentioned that I will choose Interview and Survey technique to gather user requirements. I am providing the summary result below.

Observation

I have used the observation technique to gather data about the problem domain. I have conducted this observation over an event management business. One of my friends willingly helped for this purpose who owns a business of event management. I have done this observation by closely observe some key factors of his business. I am providing the list below.

- Business structure
- Managerial tasks.
- Hiring process.
- Areas of conflict.
- Dealing with clients

Summary of observation

The summary result of my observation is, They usually maintain their decision in the top-down approach. The boss or owner of the organization is the key decision-maker of the organization and then other employees sequentially follow the orders. The managerial task is done manually. They mostly use office software and mostly pen-paper to maintain their calculations and other tasks. They mostly prefer contacting HR agencies to hire their contractual workers. Which is not cost-efficient for them. There face many problems in handling clients in the manual process. Sometimes clients break their commitment to paying bills or their given requirements. Which causes great suffering for them

Survey

I have done a proper survey on several types of users to find out what problems a general person can face while hosting an event. The survey result has expressed their thoughts on the matter. My questions were set to determine whether they face these types of problems or not. I have used google form for collecting the data. This was a public survey to understand their reactions. Providing the summary result below.

Summary of survey

The survey was conducted over a group of users who usually hosts events. The questions were made to know their thoughts and problems they faced usually conducting an event. Most of the

user face various types of troubles while hosting an event. These are related with budget, finding services and products properly, having too many unwanted guests, inefficiency in inviting the guests, etc. This survey helped me gather and refine my requirement for this project.

Document analysis

I have done document analysis as the secondary research for this project. I have read some internet published articles and relevant books associated with event management problems. The outcome I got is, I have found some existing problems with the current process. Clients and event managers face some critical problems while dealing with each other. I want to mention those problem areas from a high-level perspective. these problems are relevant to budget, communication, trust, commitment, etc.

Check **appendix C** to find the details of requirement gathering tools

Specific problem area identification and description

For a client

- **Difficulty in finding services** – Most of the time the clients don't find what they are looking for their event. They have to pass a hard time finding everything they need by traveling around different places.
- **Quality service not ensured** – Another big problem is sometimes the vendors don't provide a quality service as they promised and there is also no way to judge them before placing orders. So, the clients seem frustrated regarding this issue.
- **Inviting guests** – Clients face a lot of trouble in inviting guests for their event. The traditional approach of inviting all the guests by visiting them physically is quite unacceptable for corporate clients. Using email is not also an efficient way for this.
- **Unwanted guests** – Another problem that event hosts usually face is receiving guests more than they expected. Which creates so much inconsistency for them to handle.
- **Things go unmanageable** – The event host has to maintain many activities in an event. So sometimes it becomes unmanageable for them.
- **Overspend** – Crossing the budget is another big problem which is faced by an event host. They don't get the right track of their budget and they cross their budget unintentionally.

For an event manager

- **Unmanageable event activities** – As an event manager has to track various activities of different events. In the manual process, it is not possible to track these tasks perfectly.

- **Staffing** – A big challenge for an event planner is hiring staff for their business. An event company runs with the support of manpower. So they have to hire contractual staff for events and the hiring cost goes too much sometimes. Moreover, it becomes difficult to find appropriate manpower in the right location because the staff charges more when they have to travel in distant locations.
- **Inefficiency in managerial activities** – As a business owner of an event management company there are many things need to be managed to run the business. But they face a lot of difficulties in the manual process which is time-consuming and not a proper way.
- **No business growth** – Every business needs financial growth to sustain. Event management business is a seasonal business and to sustain in this business the business decisions have to be creative. Manual marketing plans and advertisement and the managerial process doesn't ensure that much business growth.

Possible solution

Here I am discussing some possible solution for the above-mentioned problems.

- The system must provide all service which is provided by verified vendors through a single page.
- The system must provide a rating system for the vendors directly by the clients after taking any service from them. Through that, the client will be able to rate the vendor according to their service.
- The system must allow the event host to easily send an invitation through the system without any hassle.
- The system must ensure the unique identity of the guest while inviting him through this system.
- The system must provide a budgeting tool that will help the user to stick to their budget.
- The system must provide a tool that will be used by the client to track their activities.
- The system should provide a staff registration system that can be used to sort the staff according to their location and contact them for the job.
- The system must provide a transparent view of the business processes to the business owner.
- The system must enable managerial activities for the business owner.
- The system should provide a dynamic dashboard to the vendors and event hosts. Where they will be able to view and manage their activity.

Requirement list specification

There are two types of requirements usually, Functional and non-functional requirements. I am identifying both types of requirements for this project.

Functional requirement

I have identified module wise functional requirements of this system. I am providing the list below.

User module

Req_ID	Functional requirements
1	The system must authenticate the user while entering into the system
2	The user will be able to register as a client
3	The user will be able to register as a vendor
4	Users will get an email confirmation after registration

Client module

Req_ID	Functional requirements
5	The system will allow clients to view their profile details on a separate page
6	The system will allow clients to edit their profile
7	The client will be able to view all notifications
8	Clients will be able to create an event
9	Clients will be able to view the list of upcoming events
10	Clients will be able to edit their events.
11	Clients will be able to mark done their event
12	The client will be able to add the task list for an event.
13	The client will be able to mark their completed task.
14	The client will be able to delete the task from the list.

Service booking module

Req_ID	Functional requirements
15	User will be able to view vendor services list
16	Users will be able to search specific services using various parameters.
17	The system will authenticate the user as a client to book any service.
18	The client will be able to select a specific service under a created event
19	The system must validate the budget of the event while purchasing a service
20	The client will be able to send a booking request to a specific vendor choosing a specific service
21	The vendor will be able to accept the booking request
22	The client will get a notification as a response from vendors for their booking request
23	The client will be able to choose the payment method and sent to the vendor
24	The vendor will be able to see the booking details on a separate page after confirmation.
25	The vendor will get an email notification after the booking process completes.

Guestlist module

Req_ID	Functional requirements
26	The client will be able to insert guest emails by uploading a CSV format file.
27	The client will be able to view the guest list.
28	The client will be able to edit the generated guest list from the CSV file.
29	The system must provide a payment system for guestlist service

30	The client will be able to send the guest list to the admin.
31	Client have to choose the payment method while sending the guest list
32	Admin will be able to generate random generate QR code.
33	Admin will be able to send email to the guests with the generated QR code.

Vendor module

Req_ID	Functional requirements
34	The vendor will be able to view their profile details
35	The vendor will be able to edit their profile details
36	The vendor will be able to view all notifications
37	Vendors will be able to add their services
38	Vendors will be able to view their service from a separate page.
39	The vendor will be able to manage their services

Admin module

Req_ID	Functional requirements
40	Admin must have to log in with using credentials
41	Admin will be able to view system status report on their dashboard
42	Admin will be able to view all booking data
43	Admin will be able to block or activate clients from the system
44	Admin will be able to block or activate vendors from the system.

Staff module

Req_ID	Functional requirements
45	Staffs will be able to register their profile through the system
46	Admin will be able to view the details of registered staff
47	Admin will be able to search for data using different locations
48	Admin will be able to hire staff from the system
49	The system should send an email notification to the staff when hired

Non-functional requirement

Some non-functional requirements that this system should ensure are given below.

- Reliability
- Security
- Fast
- Compatibility
- User friendly
- Documented

Prioritized requirement list (MoSCoW)

I have prioritized the above-mentioned functional requirements using the MoSCoW technique. MoSCoW is a well-known and widely used requirement prioritizing tool. It helps to generate the idea about project scope. Usually, project stakeholders and developers sit for a meeting to make this list. (Product Plan, 2020) In this project, I have made the prioritized requirement list based on my conducted research and other requirement gathering results. I am providing the list below.

Must-Have

Req_ID	Requirement list	Priority	Reasoning/Justification
1	The system must authenticate the user while entering into the system	Must have	This requirement is non-negligible to ensure access of users to different modules
2	The user will be able to register as a client	Must have	This requirement is non-negligible to ensure access of clients
3	The user will be able to register as a vendor	Must have	This requirement is non-negligible to ensure access of vendors
8	Clients will be able to create an event	Must have	This requirement is necessary to initiate a certain feature
11	Clients will be able to mark done their event	Must have	This requirement is non-avoidable to provide a clear view of their event status to avoid misunderstanding
15	User will be able to view vendor services list	Must have	This requirement is must to initiate the sequential process
17	The system will authenticate the user as a client to book any service.	Must have	This requirement is must to ensure the access of client
18	The client will be able to select a specific service under a created event	Must have	This requirement is a must to book the service for a specific event.
20	The client will be able to send a booking request to a specific vendor choosing a specific service	Must have	This requirement is non-avoidable to enhance the booking process
21	The vendor will be able to accept the booking request	Must have	This is a non-negligible requirement because it is an important step of the process

26	The client will be able to insert guest emails by uploading a CSV format file.	Must have	This requirement is a core feature that will solve any problem
30	The client will be able to send the guest list to the admin.	Must have	This requirement is must to make the feature working
32	Admin will be able to generate random generate QR code.	Must have	This is one of the core features of this system which is non-negligible.
33	Admin will be able to send email to the guests with the generated QR code.	Must have	This one is also a non-negligible requirement to solve users one of the main problems
37	Vendors will be able to add their services	Must have	This requirement is non-avoidable because it initiates the whole process of service booking
40	Admin must have to log in with proper credentials	Must have	This requirement is must to ensure the access of admin
42	Admin will be able to view all booking data	Must have	This requirement is necessary to meet the success factor of the system
43	Admin will be able to block or activate clients from the system	Must have	This requirement is a must to meet the success factor of this project
44	Admin will be able to block or activate vendors from the system.	Must have	This requirement is a must to meet the success factor of this project
45	Staffs will be able to register their profile through the system	Must have	This requirement is must for this project to solve the hiring problem of the business owner
46	Admin will be able to view the details of registered staff	Must have	This requirement is unavoidable to hire any staff

Should Have

Req_ID	Requirement list	Priority	Reasoning/Justification
5	The client will be able to view their profile details	Should have	This will add value to the system
6	The client will be able to edit their profile	Should have	This function will add value to the system
7	The client will be able to view all notifications	Should have	This requirement will add significant value to the project
13	The client will be able to add the task list for an event	Should have	This will add value to the system by solving clients manging problem
14	The client will be able to delete the task from the list.	Should have	This requirement is important to make the system feasible
16	Users will be able to search specific services using various parameters.	Should have	This requirement will add value to the project by providing flexibility to the user
19	The system must validate the budget of the event while purchasing a service	Should have	This requirement will add value to the project by solving a problem of clients
22	The client will get a notification as a response from vendors for their booking request	Should have	This requirement will make the system more attractive
23	The client will be able to choose the payment method and sent to the vendor	Should have	This requirement will add value to the project by ensuring monetary facts efficiently
24	The vendor will be able to see the booking details on a separate page after confirmation.	Should have	This requirement will be helpful for the vendors by providing them clear view to information

27	The client will be able to view the guest list	Should have	This requirement is helpful to ensure the visibility of clients
28	The client will be able to edit the generated guest list from the CSV file.	Should have	This requirement will add value by providing client control over the system
31	Client have to choose the payment method while sending the guest list	Should have	This function will add value to the system by ensuring business benefit
34	The vendor will be able to view their profile details	Should have	This requirement is important to make product problem solving by increasing system visibility
35	The vendor will be able to edit their profile details	Should have	This requirement is important to make product problem solving by increasing system control
36	The vendor will be able to view all notifications	Should have	This requirement will add significant value to the project
38	Vendors will be able to view their service from a separate page	Should have	This requirement will be helpful for the vendors by providing them clear view to information
39	The vendor will be able to manage their services	Should have	This requirement is important to make product problem solving by increasing system control
41	Admin will be able to view system status report on their dashboard	Should have	This requirement is a must that solves a core problem.
47	Admin will be able to search for data using different locations	Should have	This requirement will add value to the project by providing the flexibility of data retrieving to the admin

Could Have

Req_ID	Requirement list	Priority	Reasoning/Justification
4	Users will get an email confirmation after registration	Could have	This requirement can be needed to increase more trust over the system
9	Clients will be able to view the list of upcoming events	Could have	This requirement can be a good initiative to increase user visibility
10	Clients will be able to edit their events.	Could have	This requirement is important to make product problem solving by increasing system control but can create inconsistency
12	The client will be able to Mark done their task.	Could have	This requirement can be done to give a practical feel to the user
25	The vendor will get an email notification after the booking process completes.	Could have	This requirement can be needed to increase user acceptance to the system
48	Admin will be able to hire staff from the system	Could have	This requirement can be helpful for the admin in hiring staff. It can be implemented if had enough time

Won't Have this time

Req_ID	Requirement list	Priority	Reasoning/Justification
29	The system must provide a payment system for guestlist code service	Won't have	This requirement won't be important currently as the system will need to gain trust from the user
49	The system should send an email notification to the staff when hired	Won't have	This requirement won't be needed at this stage. More analysis will be needed to implement this feature

Chapter 9

New system design and architecture

Chapter Contents

- ✓ **Use case diagram**
- ✓ **Use case documentation**
- ✓ **Database design**
- ✓ **Sequence diagram**
- ✓ **Component diagram**
- ✓ **Deployment diagram**
- ✓ **Low fidelity wireframes**

Use case

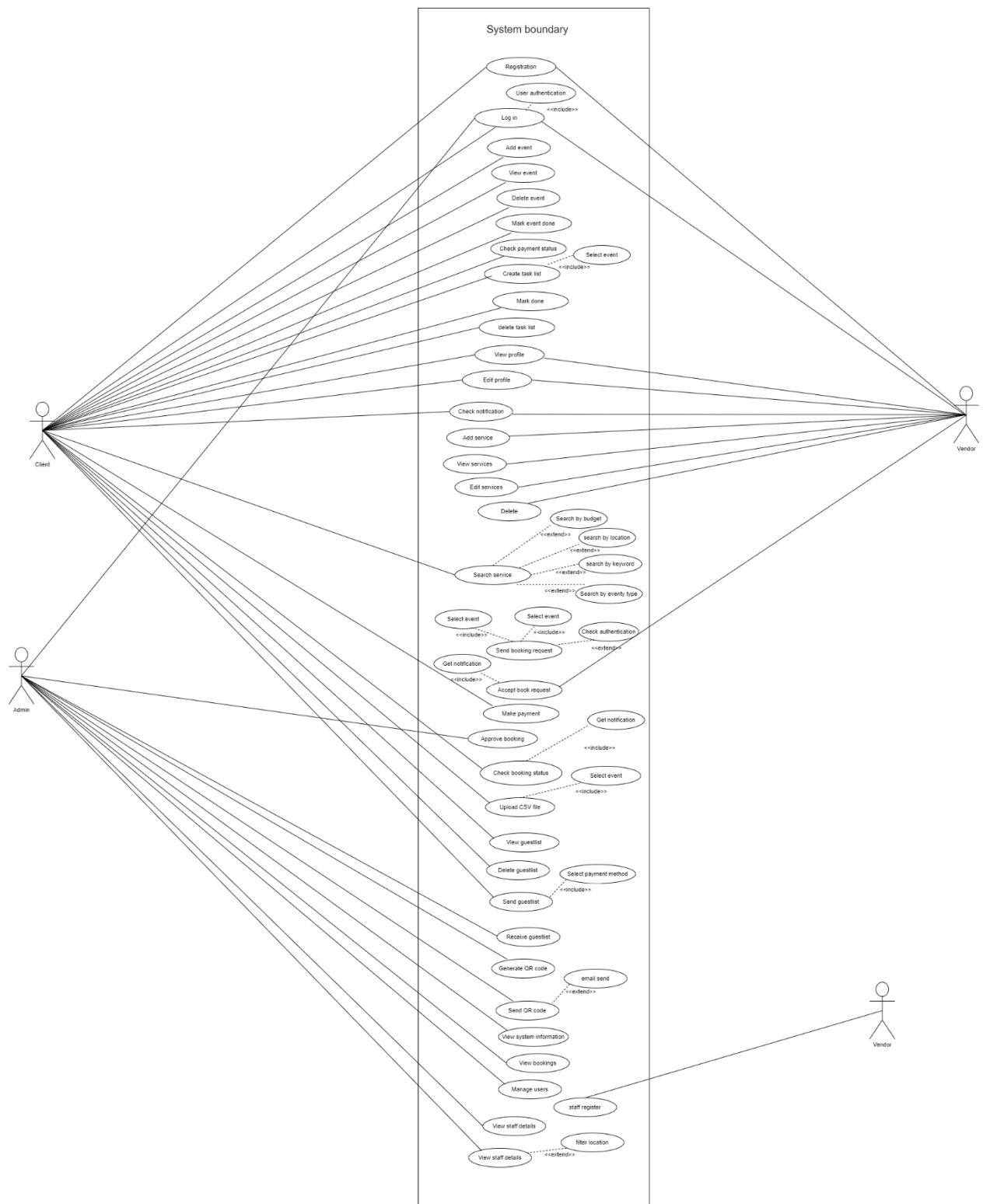


Figure 31: Full system UseCase

User registration use case

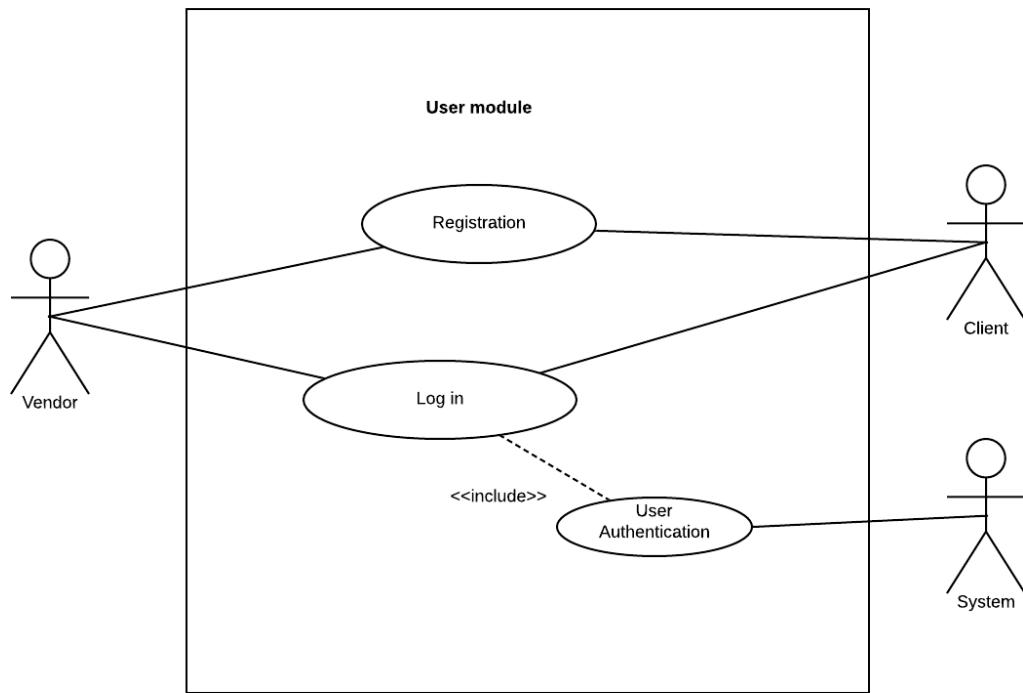


Figure 32: User registration usecase

Client use case

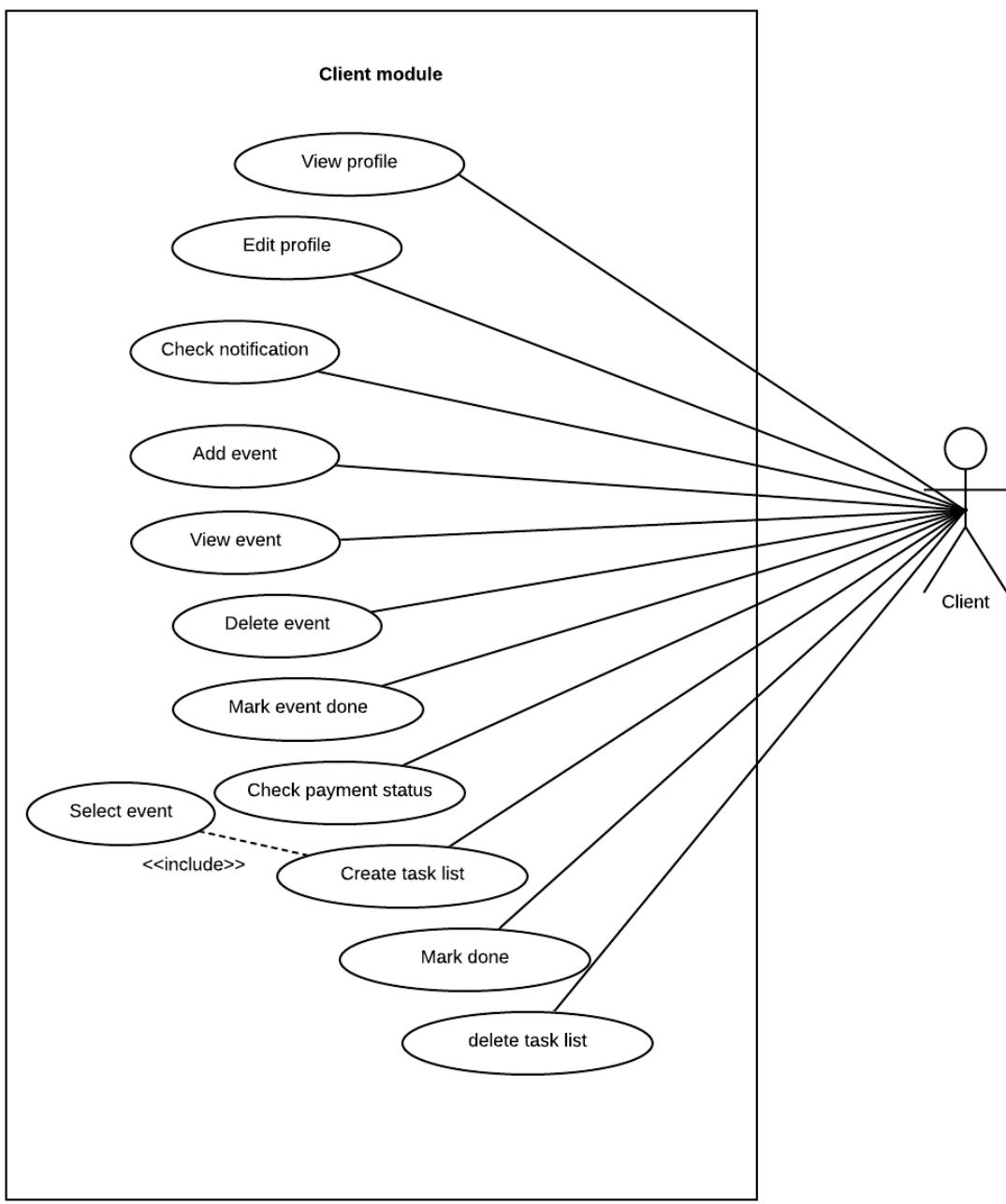


Figure 33: Use case for clients activities

Vendor use case

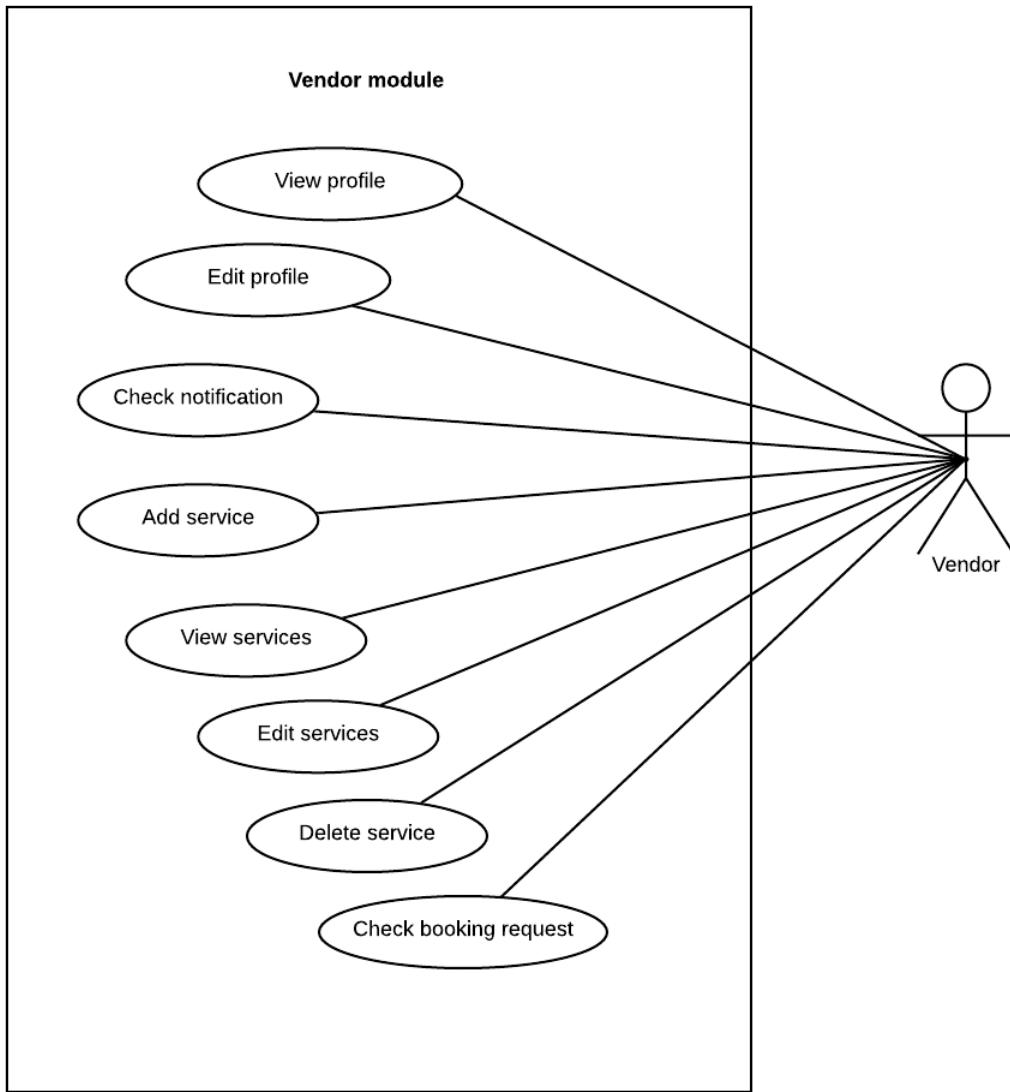


Figure 34: Use case for vendors general tasks

Booking service use case



Figure 35: Booking service use case

Admin use case

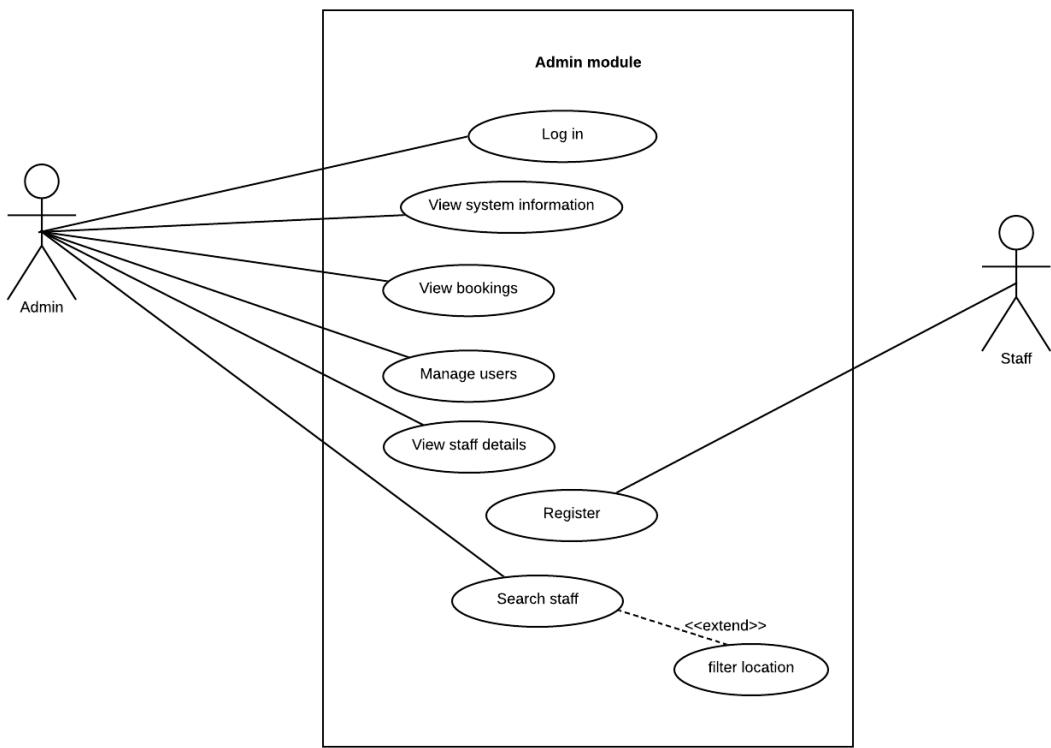


Figure 36: Admin panel usecase

Invitation use case

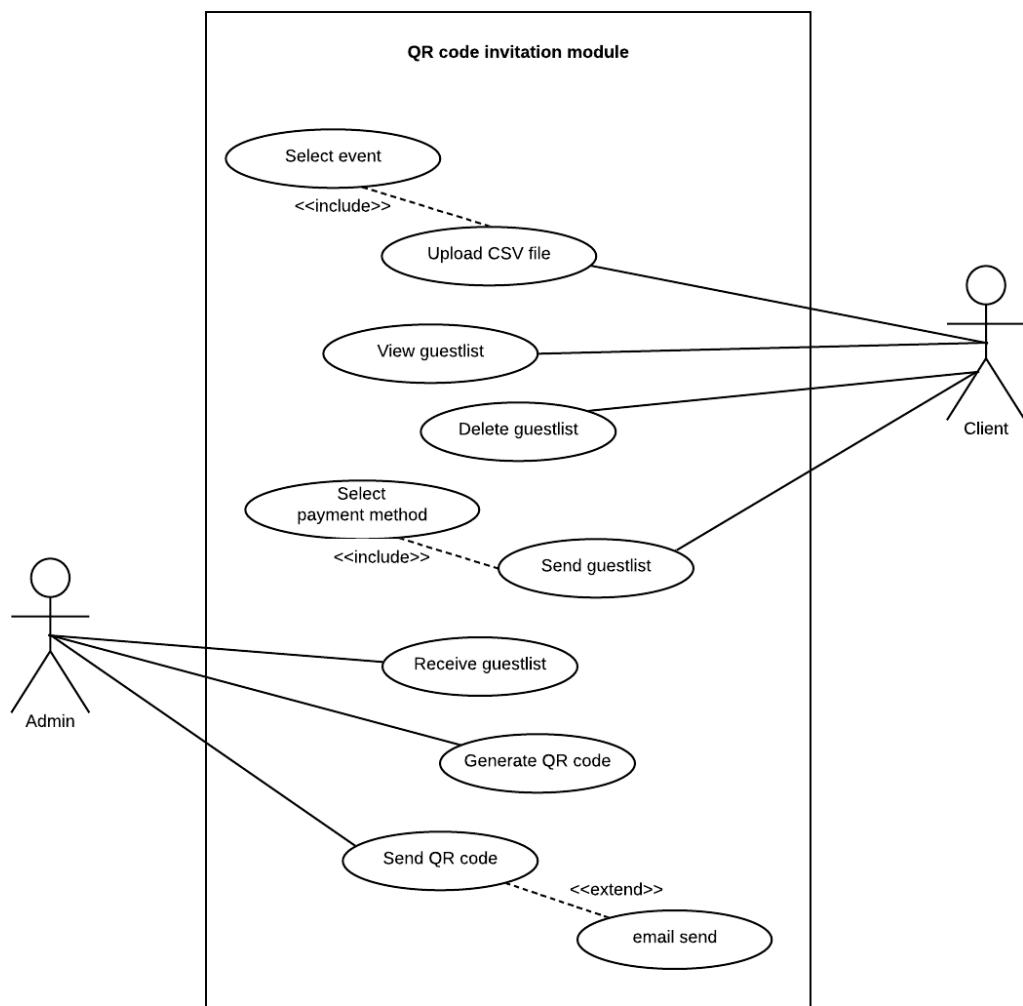


Figure 37: QR code invitation module

Use case description

Providing some major use case description below

Use case ID	UCD01	Created by:	Ershadul bari
Use case name	Log in		
Actor	Vendor, Client		
Description	Vendor and client should use their credential to log in into the system.		
Pre-condition	Users should register first		
Post condition	Will redirect to their dashboard		
Include	Check authentication		

Use case ID	UCD02	Created by:	Ershadul bari
Use case name	Send booking request		
Actor	Client		
Description	Client will be able to send the request to the vendors		
Pre-condition	Logged in as client		
Post condition	Will get success or failure message		
Include	Check authentication, select event, check budget		

Use case ID	UCD04	Created by:	Ershadul bari
Use case name	Upload CSV file		
Actor	Client		
Description	Client will be able to upload their guest list using CSV files		
Pre-condition	Event created		
Post condition	Will get success or failure message and show the guestlist result		
Include	Selecting event		

Use case ID	UCD04	Created by:	Ershadul bari
Use case name	Send QR code invitation		
Actor	Admin		
Description	Admin will be able to send the qr code invitation to the guests.		
Pre-condition	Generate QR code		

Post condition	Will get success or failure message
Include	Send mail

Entity relationship diagram

Providing the entity relationship diagram below.

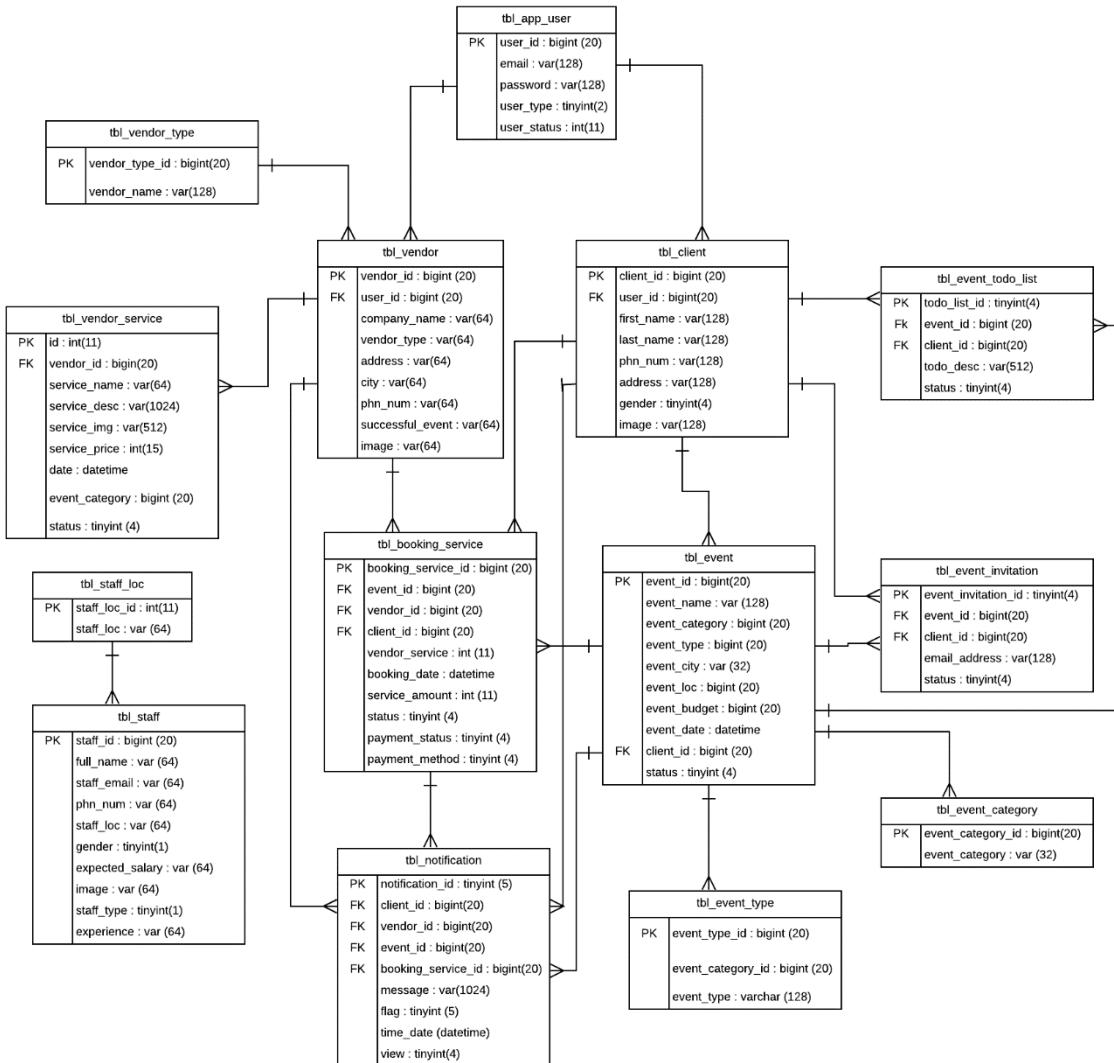


Figure 38: Entity relationship diagram

Sequence diagram

Here I am providing sequence diagram for admin, client, and login process

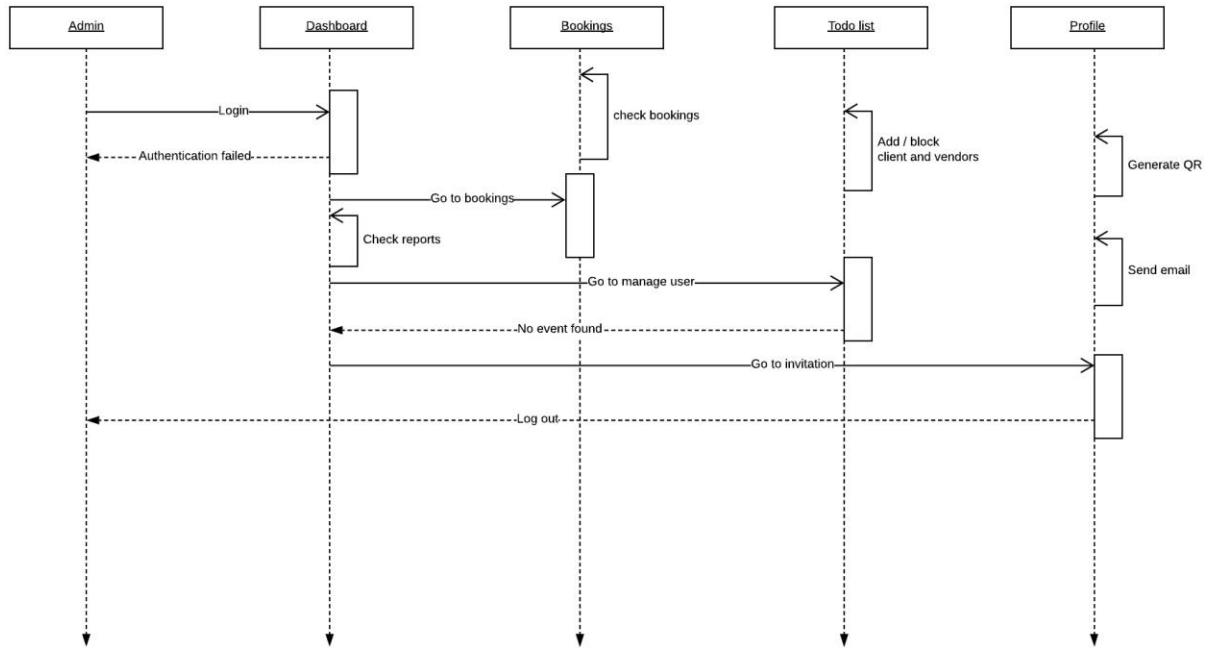


Figure 39: Admin sequence

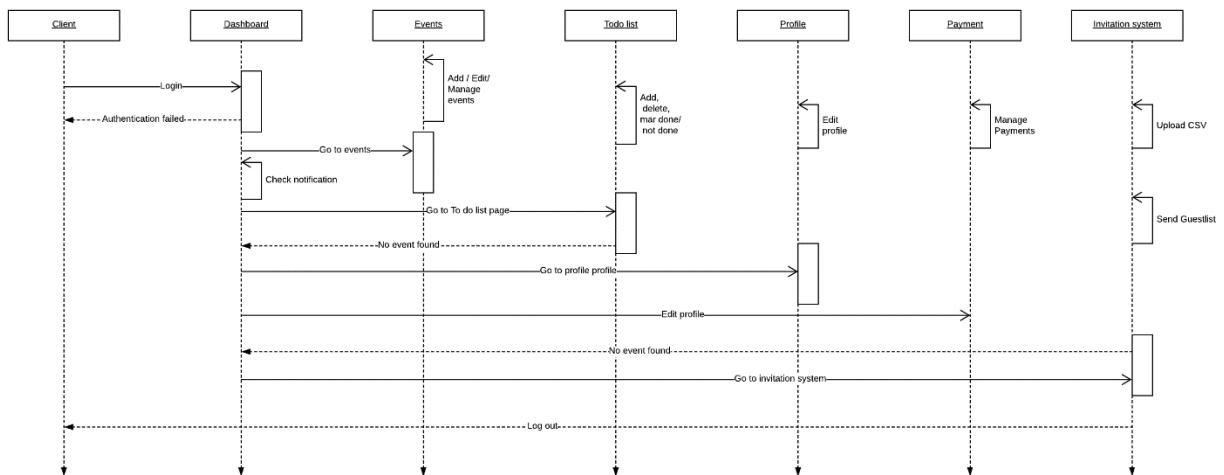


Figure 40: Client sequence

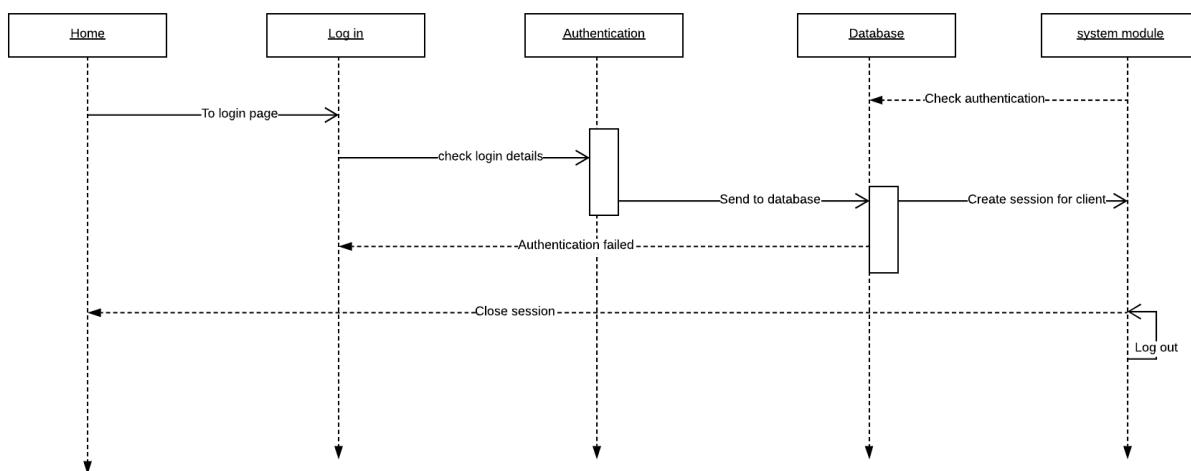


Figure 41: Login sequence

Component diagram

Here I am providing a component diagram for client

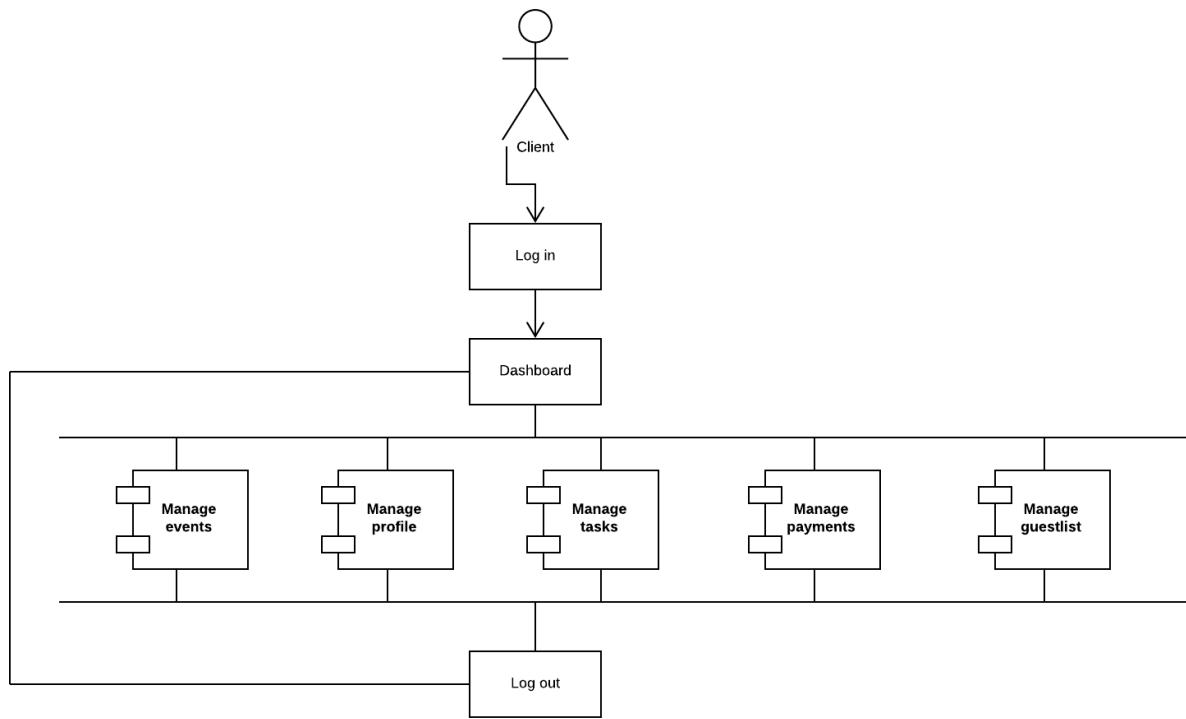


Figure 42: Client component diagram

Deployment diagram

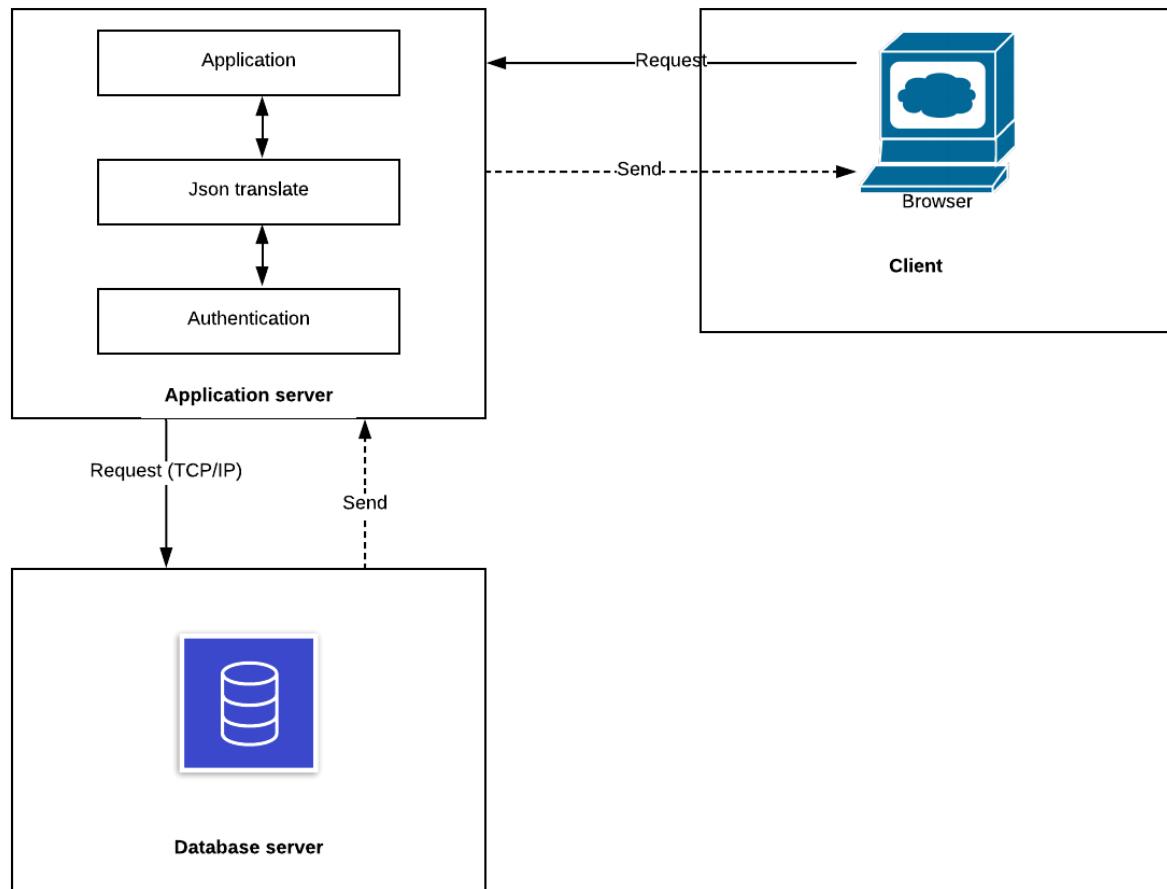


Figure 43: System deployment diagram

Low fidelity prototype

Here I am providing system low fidelity prototypes for some core modules. Rest of the design is done based on these prototypes.

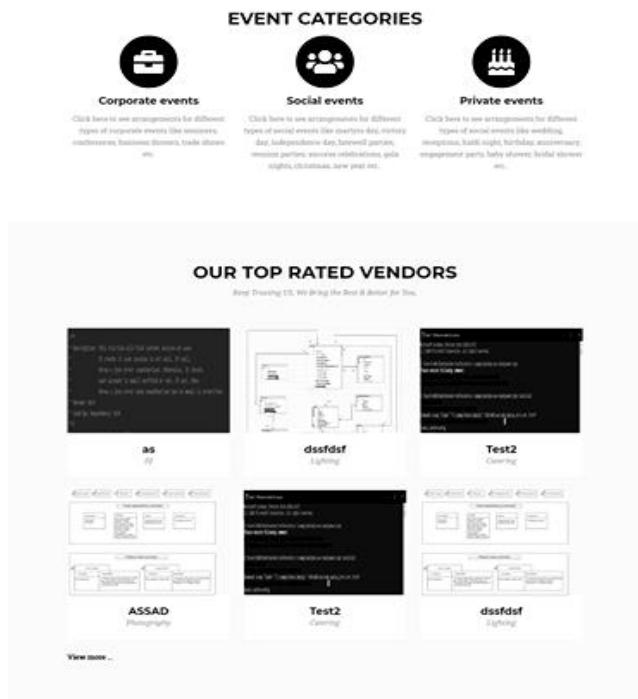
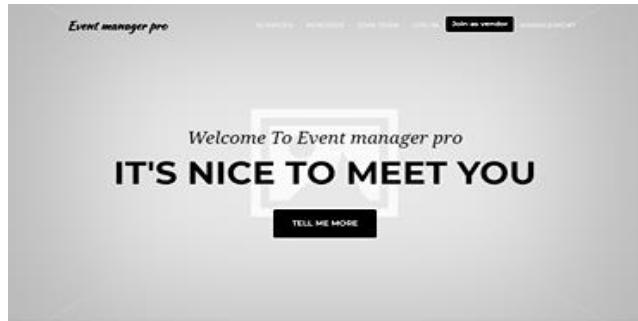


Figure 44: Homepage lowfidelity

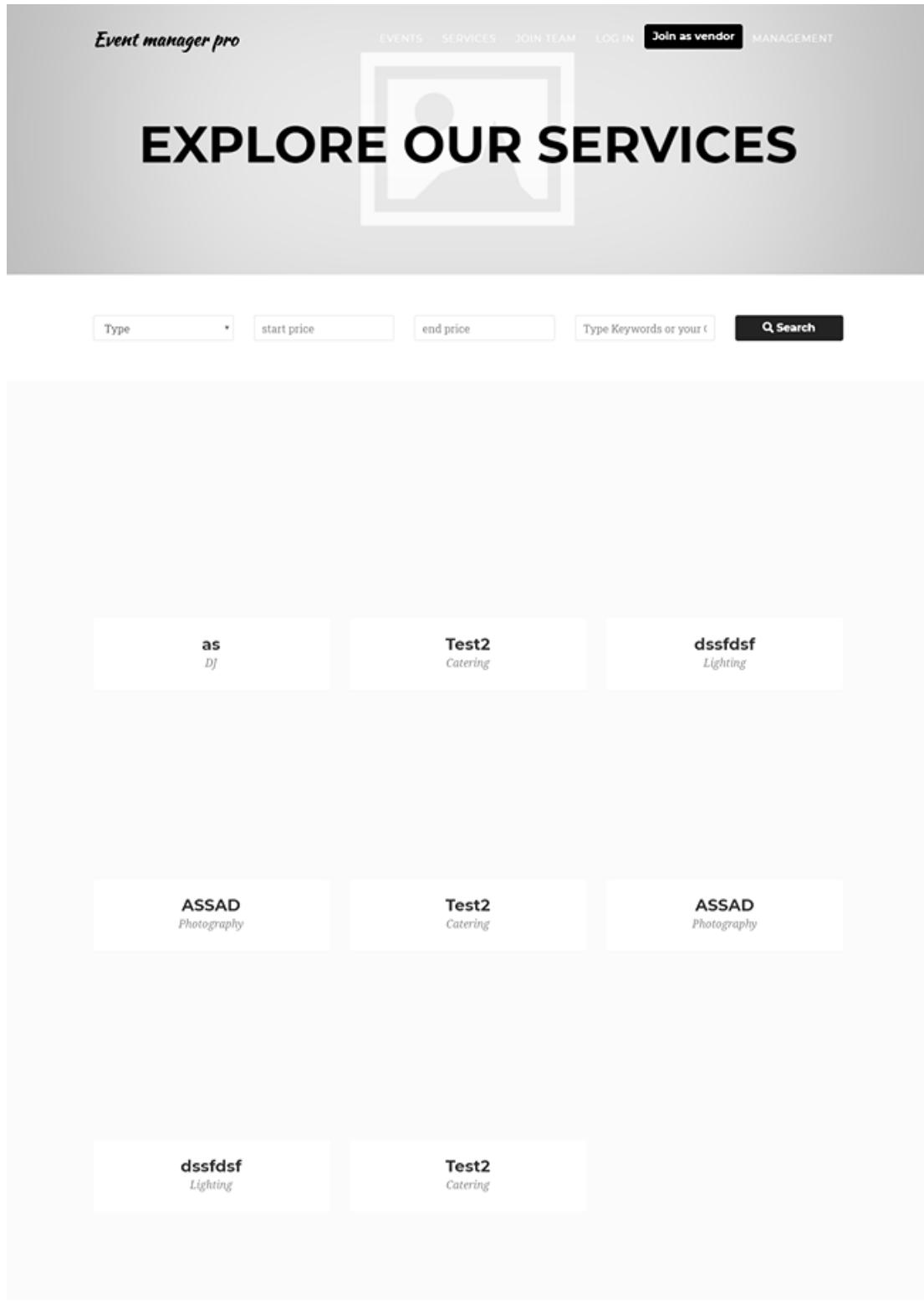


Figure 45: Service page low fidelity

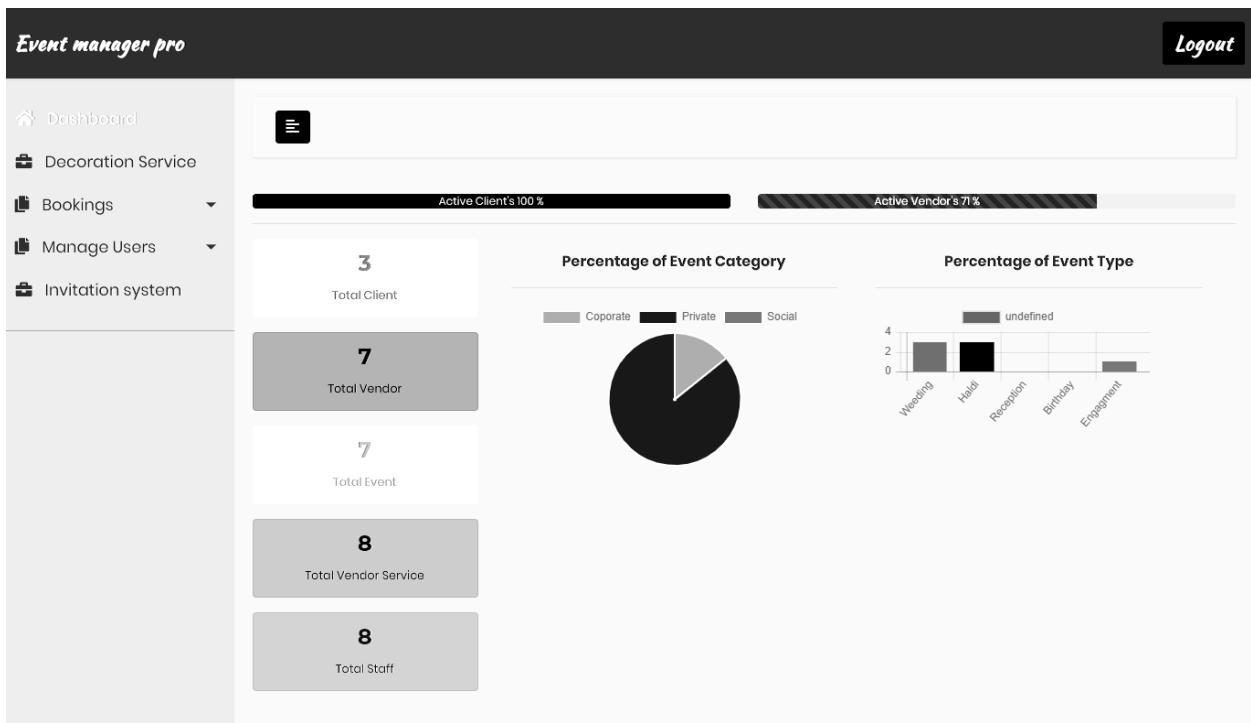


Figure 46: Admin dashboard low fidelity

Event manager

[Log in](#) [Register as Vendor](#) x MANAGEMENT

Company Name *

Company Type *

Mobile No. *

Email Address *

We'll never share your email with anyone else.

Company Address *

Area*

Password *

Confirm password *

I agree that I have read and accepted the
Terms & Conditions

Register



Figure 47: Vendor registration low fidelity

Event manager

[Log in](#) [New user? Register](#) x MANAGEMENT

Email address

Password

Log in

TELL ME MORE



Figure 48: Client login low fidelity

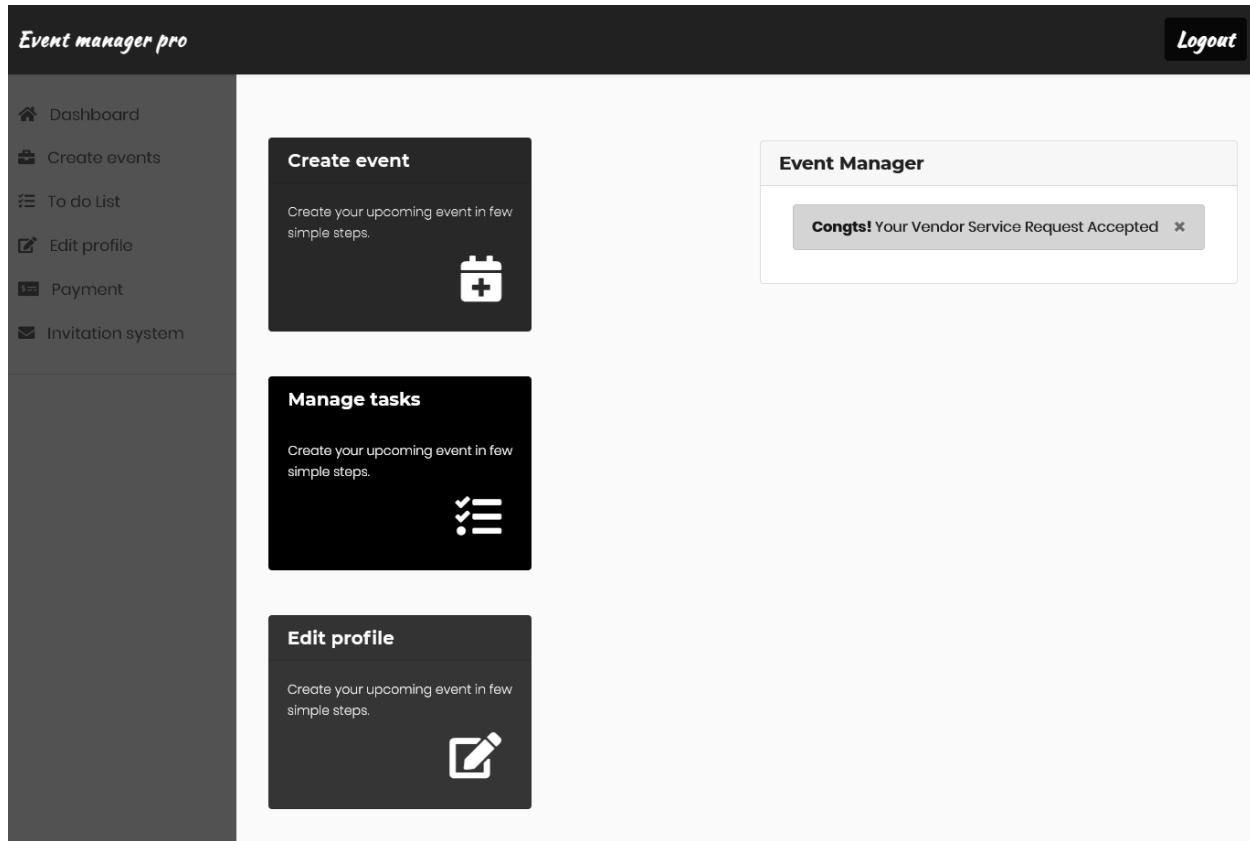


Figure 49: Client dashboard low-fidelity

Chapter 10

Development

Chapter contents

- ✓ **New system modules**
- ✓ **High fidelity prototypes**
- ✓ **Timeboxing**
- ✓ **Possible problem breakdown**
- ✓ **Potential alternate approach**

New system modules

In this chapter, I am going to discuss my developed module for this project one by one with a brief discussion. There are some big modules in this system that I will be showing by breaking down into small modules.

Service booking module

This module is about booking the services by the clients. In this module, the client will be able to view the services offering by different vendors. They will be able to check their prices, image, and description. Other types of users will be also able to view this information but only the clients will be able to view booking options here. There is some certain necessary validation done to make the system more feasible. The client will see their created events and book service they have to select an event under which they want to book that specific service. Then after creating a booking request system will check the budget of that specific event. If any specific service crosses the budget of that event the system will restrict the user buying it. The system will also restrict the user to buy the same service again under the same event. After creation, the buying request system will send the booking information to the vendor. The vendor will get a notification as well. The vendor can accept or reject the booking request. If the vendor accepts the booking the system will ask the client to confirm the payment method. This will also generate a notification for the client. The client will select the payment method and send the information to the vendor. then the vendor will get another notification and they will be able to view the booking details in their service booking list. This is the whole process of this module. I am providing the activity diagram and screenshot of logical codes to provide a clear understanding of the module. I will also provide the design of the system interface in the next section of a high-fidelity prototype.

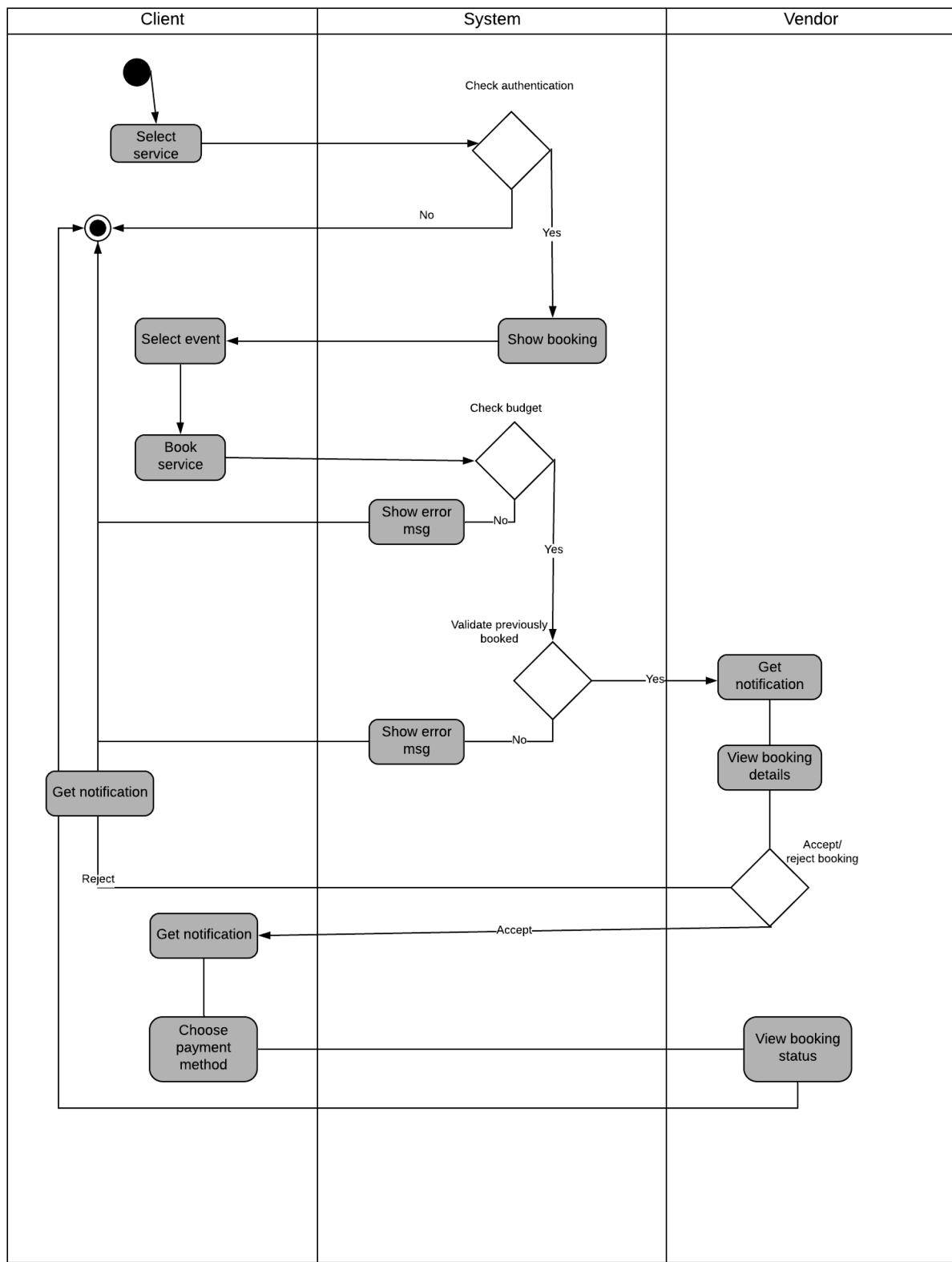


Figure 50: Booking activity diagram

Controller: Here you will see some validation check and passing of data in array type.

```
// check validation
if ($event_id == "") {
    $data_error["event"] = "Event required";
}

//Checking data inconsistency
if (!empty($data_error)) {
    $result = array("status"=>402, "reason"=>"Please verify your input", "error_list"=>$data_error);
} else {
    $existing_data = $this->booking_service_model->check_exist($vendor_id,$event_id,$client_id,$vendor_service_id);
    if (!empty($existing_data)) {
        $result = array("status"=>403, "reason"=>"Same Service Already Booking for this event");
    } else {
        $amount = $this->booking_service_model->check_budget($event_id);
        $vendor_service = $this->service_model->select_by_id_vendor_id($vendor_service_id,$vendor_id);
        $check_budget = ($amount->service_amount + ($vendor_service->service_price));
        if ($event_list->event_budget < $check_budget) {
            $result = array("status"=>403, "reason"=>"This service already over your event budget. Select another service");
        } else {
            $data['event_id'] = $event_id;
            $data['vendor_id'] = $vendor_id;
            $data['client_id'] = $client_id;
            $data['vendor_service'] = $vendor_service_id;
            $data['service_amount'] = $vendor_service->service_price;
            $booking_service_id = $this->booking_service_model->save($data);
            if (!$booking_service_id) {
                $result = array("status"=>401, "reason"=>'Failed to Save');
            } else {
                $data_notification['client_id'] = $client_id;
                $data_notification['vendor_id'] = $vendor_id;
                $data_notification['event_id'] = $event_id;
                $data_notification['booking_service_id'] = $booking_service_id;
                $data_notification['message'] = "Your Have a Request of Vendor Service";
                $data_notification['flag'] = "1";
                $data_notification['view'] = "1";
                $notification_id = $this->notification_model->save($data_notification);
                if (!$notification_id) {
                    $result = array("status"=>200, "message"=>'Event Service Request Send Successfully');
                } else {
                    $result = array("status"=>200, "message"=>'Event Service Request Send Successfully');
                }
            }
        }
    }
}
echo json_encode($result, JSON_PRETTY_PRINT);
exit();
}
```

Figure 51: booking system controller

In this project, system is passing the data through an array in every controller. In this controller there are several arrays used such as \$data for passing the data, \$data_error for showing the error list, \$data_notification for passing the notification data in the database, \$result for showing the result. There are many validation codes are also used in this controller. As the system is creating every booking under a specific event

QR code invitation module

This module is about a core feature of this web application. This whole module is divided into two parts. The first one is about the client creating a guest list & the other part is about generating unique QR codes for each guest and send them through email. The whole process of this module is, the client will upload a CSV file under an event to the system. The system will extract all the emails from that CSV file and store them into the system database. Next, the client will be able to see a unique guestlist for each event. Then they will be able to delete the guest list and send the guest list to the admin. They will be also able to download the uploaded CSV file and check whether they uploaded the right file or not. After clicking the send button, the system will make the guest list visible to the admin. Then the process of the admin side will start. The admin will simply click the generate button. That will create a unique QR code against each email. The combination of QR code will be unique for each event and each email address separate. I am providing a screenshot of logical codes and an activity diagram to provide a clearer view of these details.

```
public function email_test(){
    $this->load->library("qrcode_lib");
    $event_id= $this->input->post("event_id", true);
    $emails = $this->event_invitation_model->select_by_event_id($event_id);
    // dd()
    foreach ($emails as $key => $email) {
        $id = $email->event_invitation_id;
        $string = "$event_id - $id - $email->email_address";
        $path = "./uploads/qrcode/$id.png";
        $this->qrcode_lib->generateQRCODE($string, $path);
        echo "$email->email_address <br>";
        send_attachment_mail("techtalents.contact@gmail.com", "Event manager $id", $email->email_address, "Invitation subject $id", "Invitation Body $id", $path );
    }
}
```

Figure 52: QR code controller code

In this code of controller, I have used a variable named string where I have made the combination of QR code generating. As it can be seen, every QR code will be generated using 3 parameters that is event_id, invitation_id, and email address of the guest. I have also used an open source library in this module. I will give credit in the appendix section.

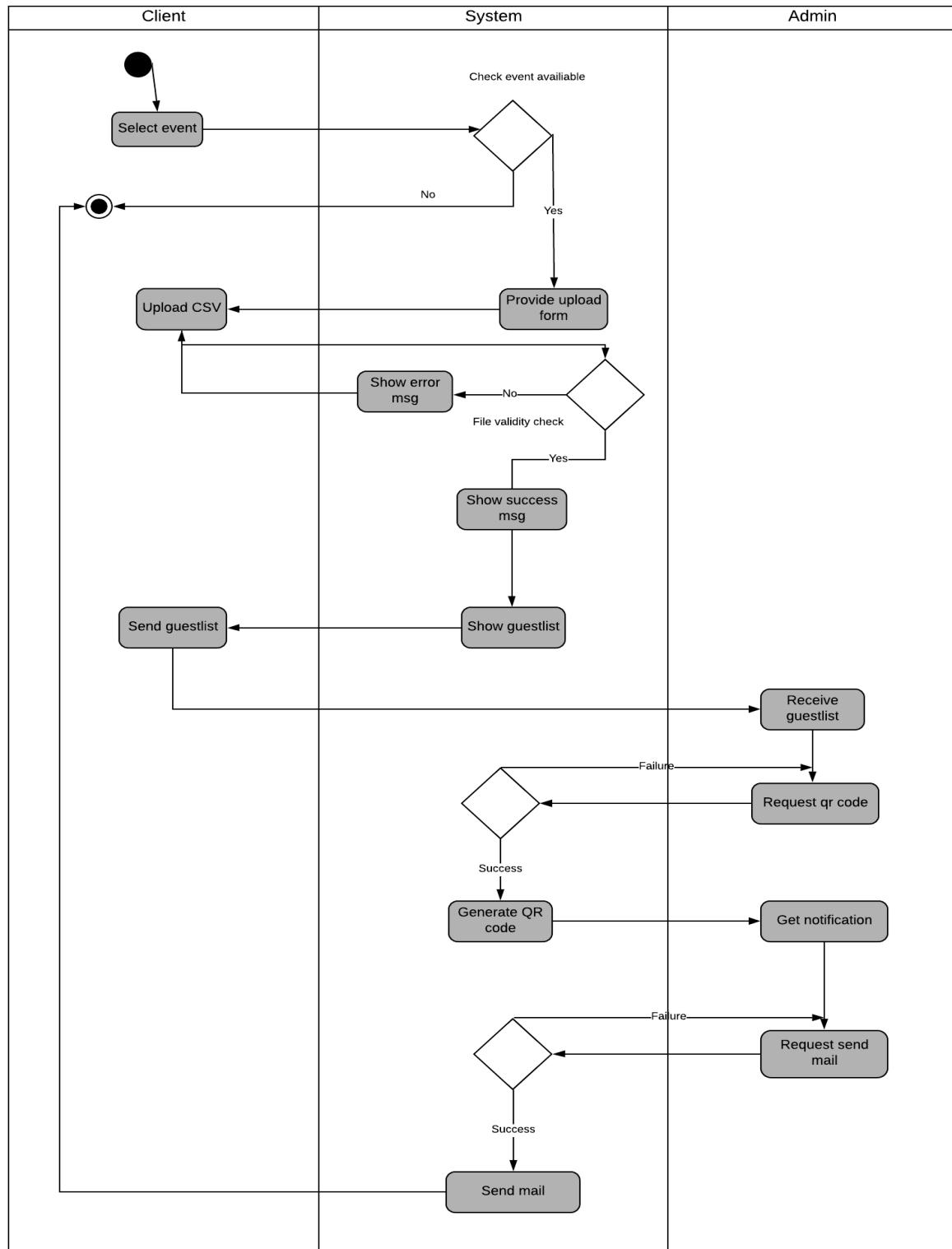
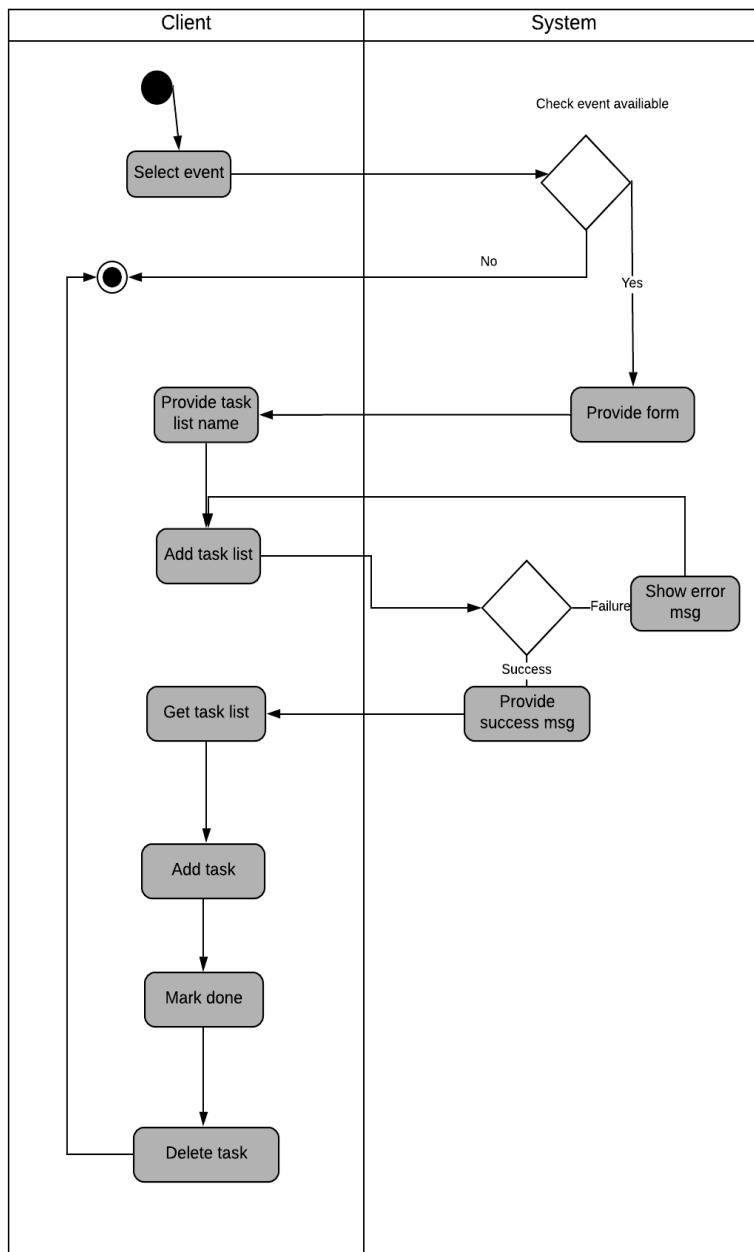


Figure 53: QR code invitation activity diagram

To-do list module



In this module, the client or event host will be able to maintain a to-do list for every event specifically. This can be considered as the whole task management system. Through this module, the client will be able to create a task list under a specific event. Then the client will be able to add multiple tasks on that list. They will be also able to edit, delete, and mark done and not done those tasks. Providing an activity diagram and some logical codes of this module.

Figure 54: TODO list

Managing service module

This module refers to managing the services by the vendor. From this module, the vendor will be able to add their services. They will be able to enter the meta-information about their services. There are certain validation or checkpoint which will verify the valid data only. The system will check validation for empty input in mandatory fields. The system will validate the price range. Any service price can't be less than 3 digits or more than 7 digits. The vendor will be able to view their added services. They will be able to edit them, change pictures or service prices, and delete them whenever they want. In this project, the database interaction has been done using the call of Ajax. It was used to avoid the loading of the page and make the response faster. Providing an example of below for this module how I used Ajax.

```
var URI_SAVE_SERVICE = BASE_URL + "vendor/service/save";  
  
$("#btn_save_service").click(function() {  
    var loader = $(this).children(".loader_icon");  
    if (loader.is(":visible")) {  
        return false;  
    }  
    loader.show();  
    var sendData = {};  
    var formData = new FormData($("#frm_vendor_service")[0]);  
    sendData.url = URI_SAVE_SERVICE;  
    sendData.content = formData;  
    formDataSend(sendData, function(callback){  
        if (callback.data != null) {  
            loader.hide();  
            var result = jsonProcess(callback.data);  
            if (result.status == 200) {  
                alertify.success(result.message);  
                $("#service_img").val("");  
                $("#service_name").val("");  
                $("#service_price").val("");  
                $("#event_category").val("");  
                $("#service_desc").val("");  
                location.reload();  
            } else if (result.status == 402) {  
                alertify.error(result.reason);  
                placeFormErrorMessages(result.error_list);  
                focusTopError(result.error_list);  
            } else {  
                alertify.error(result.reason);  
            }  
        }  
    });  
});
```

Figure 55: Service add Scripts (ajax)

here, when the user is hitting the save button to create any service. This JavaScript function will be called. The JavaScript will check the values of the insert. If any inconsistency found it will send the response to the user immediately. Instead of reloading the page and then giving the response. It will increase the usability of the user. If the validity of data is correct then, this JavaScript function will throw a success message and send the data to the PHP controller through the URL declared at the top.

Managing event module

Every client can manage the event. This is the first task every client can do after creating a profile. The client will be able to add an event by providing some information. Every input of the client will be validated where necessary. The client will be able to insert their event name, type, date, event category, budget, etc. The client will be able to view the details of their event once added to an

event. Later they will be able to edit that event if needed. They will also change the status of the event as pending. If the event gets pending for any certain reason. Later they will be able to change the status to running. They will also be able to close the event if it got canceled. The event can be deleted permanently also by the client. This was a major module to continue other works of the client. Because later every step is dependent on their created events. Here is the only time they will enter all their data regarding their event. After the successful creation of an event, the client will be able to purchase services against that particular event, add a task list, add a guest list, and get QR code invitation service. In every step, they won't need to add their event date or budget separately. This will improve the user experience of clients. In the later section, I have given the interface prototype of this module.

In this section I have tried to describe my coding style by giving examples of some major modules. Besides these modules there are other different modules like, Login, Registration, Staff registration, searching service, User manage etc. In the later sections, I am giving the high-fidelity prototypes of my system form some major modules. I will also discuss some critical modules where I faced difficulties and how I solved and overcame the situation.

High fidelity prototypes

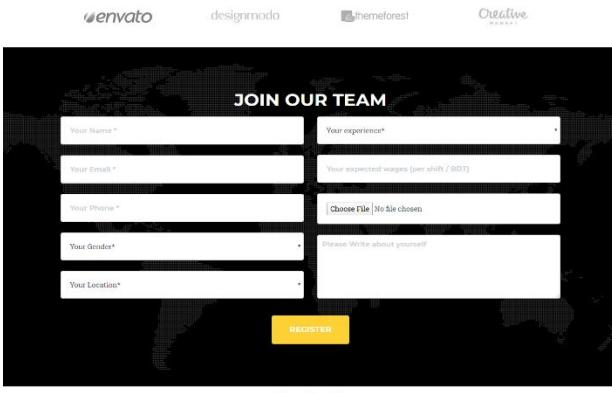
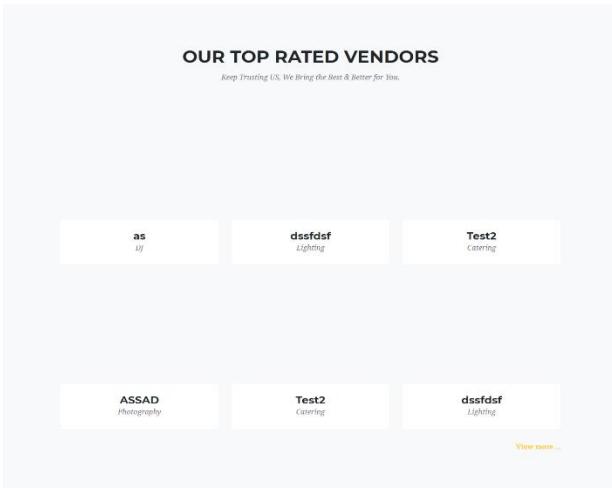


Figure 56: Homepage high-fidelity

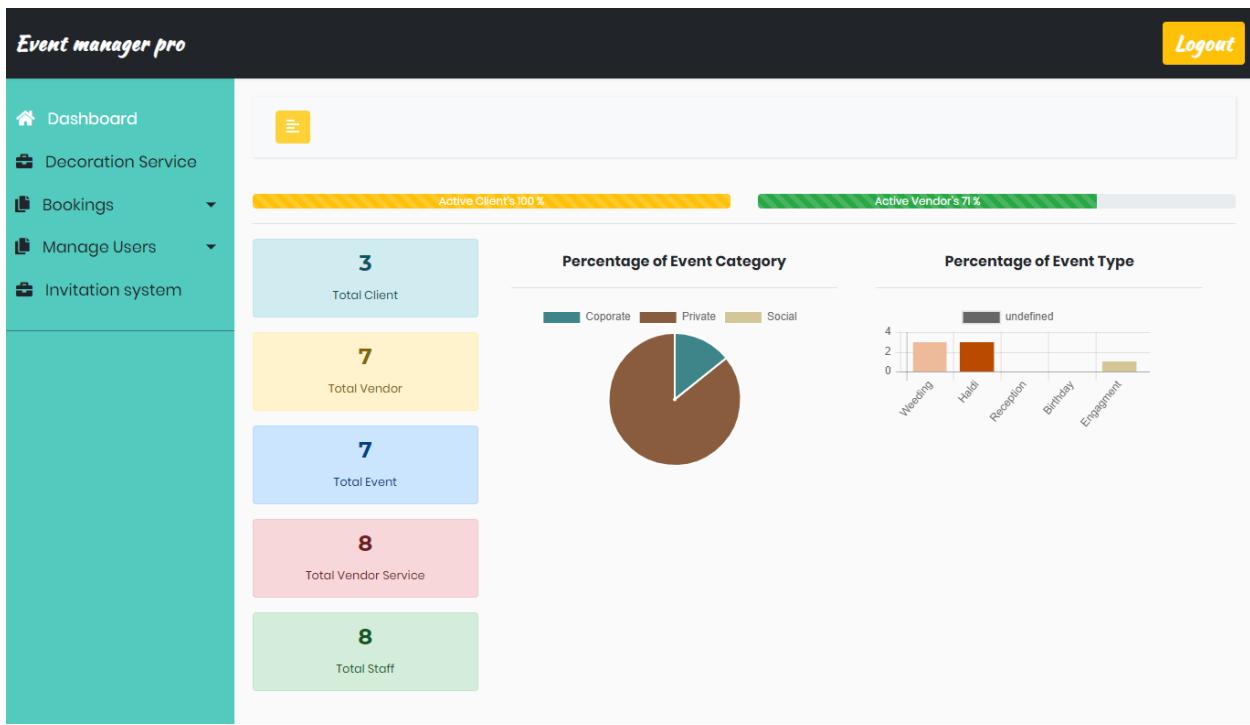


Figure 57: Admin panel

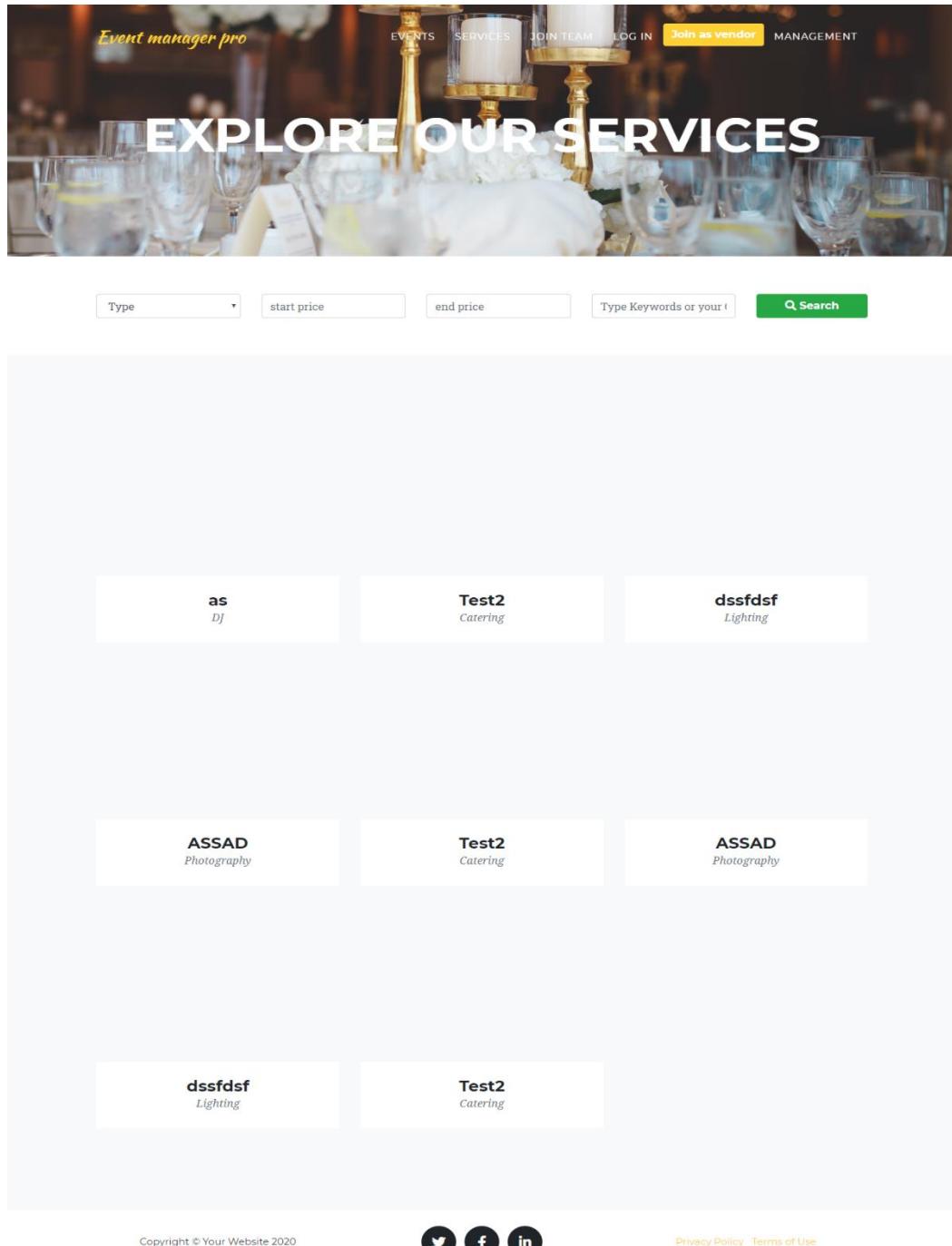


Figure 58 : Service search and booking page

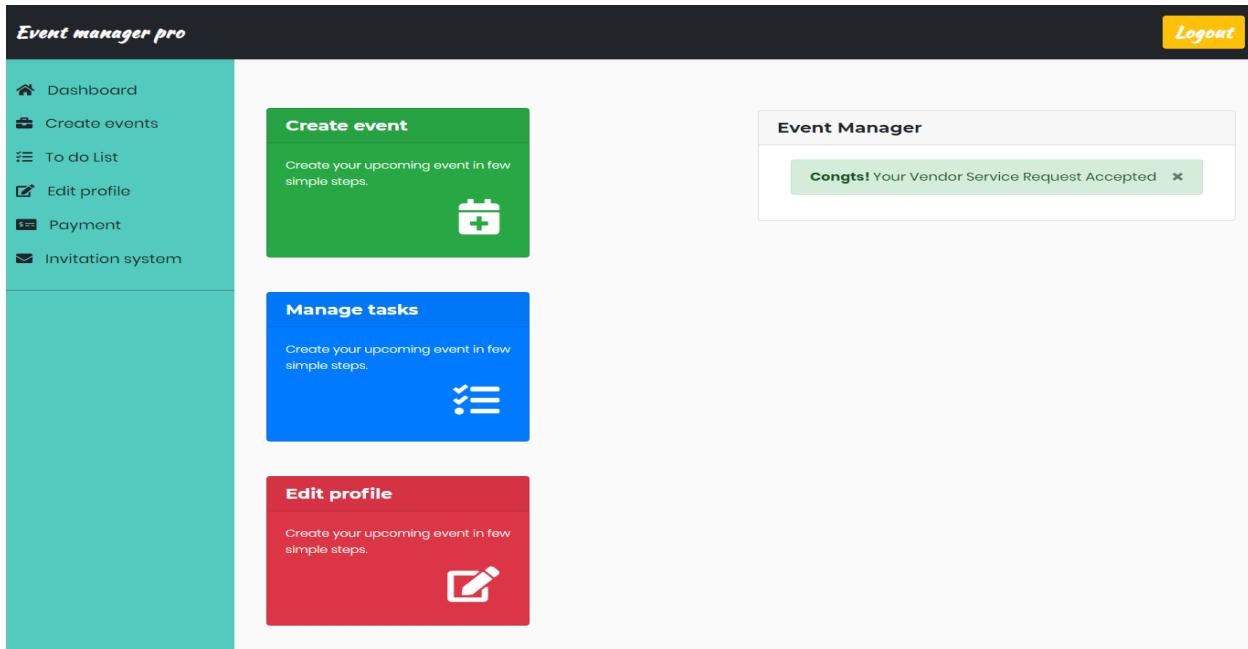


Figure 59: Client dashboard

The manage events page has a sidebar with a teal background containing the same links as Figure 59. The main area is divided into two sections:

- Create your Special Event**: A form with fields for Event Name*, Event budget*, Event Category*, Event type*, Event location*, Event city*, and Event date*. There is also a checkbox for agreeing to terms and a "Create Event" button.
- View all events**: A table listing events with columns: Event Name, Category, Type, City, Location, Budget, Date, Status, and Action. The table contains three rows of data:

Event Name	Category	Type	City	Location	Budget	Date	Status	Action
My wedding	Corporate	Wedding	Dhaka	Mohammadpur	200000 BDT	2020-05-29	Running	
test	Private	Haldi	dhaka	Mohammadpur	12000 BDT	2020-05-28	Pending	
hello Testing purpose	Private	Wedding	Dhaka	Chawkbazar	21000 BDT	2020-05-08	Closed	

Figure 60: Manage events

Event manager pro

Add your guestlist

Choose event * Upload guest list * only xls, xlsx, csv files No file chosen

[Download - File Format](#) I agree that I have read and accepted the Terms of use

View all guest lists

Haldi night

Guest email list	Action
hellowq@gmail.com	

Figure 61: Upload guestlist

Event manager pro
Logout

- [Dashboard](#)
- [Create events](#)
- [To do List](#)
- [Edit profile](#)
- [Payment](#)
- [Invitation system](#)

Add your To do List against event

Choose event *

Please Select

Note *

Take a Note

[Add Note](#)

View all To Do (Note) list

hello Testing purpose

To Do List	Status	Action
new task	Done	Delete
Another task	Not Done	Delete
Another task	Not Done	Delete

Figure 62: To-do list prototype

Timeboxing

As I am following, I have followed using the timeboxing techniques. I have already mention about how I am maintaining my timebox or sprint throughout this project. Yet I am presenting the details breakdown of my development period timebox to show how I have developed this software throughout.

New system modules	Start date	End date	Duration (days)	Description
Analysis & design	15-Feb	25-Feb	4	All types of diagram including ERD, Use Case, Sequence diagram, Component diagram, deployment diagram, and prototypes
User modules	26-Feb	29-Feb	4	Rendering the UI layout & building all types of user registration and login
Client modules	1-Mar	6-Mar	6	All types of client activities including, edit profile, manage event, Manage task, etc.
Admin modules	7-Mar	12-Mar	5	Preparing all admin module like, User manage, staff hiring process, Dashboard etc.
Vendor module	13-Mar	14-Mar	2	All tasks including edit profile, Add and managing service, etc.
Service booking	15-Mar	18-Mar	4	All tasks including rendering service in new page, searching & filtering, budget checker, booking requests for client and vendor sides, Approval, payment, running bookings etc.
QR code invitation	19-Mar	26-Mar	8	All tasks include uploading CSV file from client side, storing into database & rendering in UI, send guest list to admin, generating unique QR code, Sending qr codes through mail to all valid emails.
Total days =			33	

Figure 63: Time box

Possible problem breakdown

Doing code is always a complex when anyone doesn't know how to debug and look for the solution. It is quite common to get stuck in a problem while coding and have no idea what to do. In this project, my goal was to do something that is beyond my capability which will help me to grow my skills. So that, I have chosen some features which were quite difficult for me and I was stuck for a long period of time. I am explaining those below.

Service searching and filtering

In this section, I was facing trouble in not generating the result after so much hardship. My database query was perfect & I was continuously rechecking it again and again. I am describing below how I succeeded finally.

Iteration 1

Firstly, I have coded some query in the model. Where all search conditions were given. The aim was searching the service based on the parameter of keywords, event_types, start_budget, & end_budget. So, I used JOIN query using OR and AND operator but I failed. The result wasn't showing perfectly and when the search button is clicked it was showing all result instead of showing only searched once.

Iteration 2

Then after doing so much research and debugging, I found out that I have done the mistake of not grouping the queries with IF conditions but only service price parameter. That's why the result was returning all services. After applying this technique my search worked perfectly. Please check the attached screenshot below.

```

141 | 141 | $this->db->join("tbl_vendor_type", "tbl_vendor.vendor_type=tbl_vendor_type.vendor_type_id");
142 | -   | $this->db->like("$this->_table.service_name", $search_term);
143 | -   | $this->db->or_like("$this->_table.service_desc", $search_term);
144 | -   | $this->db->or_like("$this->_table.service_price", $search_term);
145 | -   | $this->db->or_like("tbl_event_category.event_category", $search_term);
146 | -   | $this->db->or_like("tbl_vendor_type.vendor_name", $search_term);
147 | -   | $this->db->or_like("tbl_vendor_type.vendor_type_id", $event_type);
148 | -   | if($service_price_start != "" && $service_price_end != ""){
149 | -   |     $this->db->where("$this->_table.service_price < ", $service_price_start);
150 | -   |     $this->db->where("$this->_table.service_price > ", $service_price_end);
151 | 150 | }
152 | +   | if($search_term != ""){
153 | +   |   $this->db->group_start();
154 | +   |   $this->db->like("$this->_table.service_name", $search_term);
155 | +   |   $this->db->or_like("$this->_table.service_desc", $search_term);
156 | +   |   $this->db->or_like("tbl_event_category.event_category", $search_term);
157 | +   |   $this->db->or_like("tbl_vendor_type.vendor_name", $search_term);
158 | +   |   $this->db->group_end();
159 | +   |
160 | +   |
161 | 161 | $this->db->where("$this->_table.status", 0);
162 | 162 | $this->db->order_by("$this->_table.date", "DESC");

```

Figure 64: Searching service coding iteration

This is screenshot is from the repository after pushing my right codes. Green marked are right codes and red marked are previous wrong code.

Service booking

In this section, the problem was about the booking request was not initiating. All codes where seem to be right but there was something wrong. I am describing the iterations of this problem breakdown below.

Iteration 1

The task was to render a modal showing details about the service and booking option. At the first attempt I have used a FOREACH loop to render the modal form 6 times. Because the requirement was the homepage will show only top 6 vendor services. So, I was using this technique and being failed to send the booking request in spite of doing everything right. I am providing the screenshot below of my first iteration.

```

<?php
    foreach ($vendor_list as $key => $vendor) {
?>
<div class="portfolio-modal modal-fade" id="vendor><?php echo $vendor->user_id ? $vendor->
    <div class="modal-dialog ">
        <div class="modal-content">
            <div class="close-modal" data-dismiss="modal">
                <div class="lr">
                    <div class="rl"></div>

```

Figure 65: Service booking iteration 1

Here it is marked that how I was printing the whole modal for 6 times.

Iteration 2

Soon I was able to find out where I was doing the mistake. The approach of rendering the static modal 6 times is wrong. Instead the right approach is the modal will be printed once and the information in them will be in the loop. Check the screenshot below which shows how I used the loop later. But then it was still not working properly so I had to debug more for the reason.

```

<div class="col-lg-12 text-center">
    <h2 class="section-heading text-uppercase">Our Top Rated Vendors</h2>
    <h3 class="section-subheading text-muted">Keep Trusting US, We Bring the Best & Better for You.</h3>
</div>
<div class="row">
    <?php
        foreach ($vendor_list as $key => $vendor) {
?>
    <div class="col-md-4 col-sm-6 portfolio-item">
        <a class="portfolio-link" data-toggle="modal" href="#vendor><?php echo $vendor->user_id ? $vendor->user_id : " "?><?php e
            <div class="portfolio-hover">
                <div class="portfolio-hover-content">
                    <i class="fas fa-plus fa-3x"></i>
                </div>
            </div>
            <img class="img-fluid" src=<?php echo base_url(); ?><?php echo $vendor->service_img ? $vendor->service_img : " "?>">
        </a>
        <div class="portfolio-caption">
            <h4><?php echo $vendor->company_name ? $vendor->company_name : " "?></h4>
            <p class="text-muted"><?php echo $vendor->vendor_name ? $vendor->vendor_name : " "?></p>
        </div>
    </div>
    <?php
        }
?>
</div>

```

Figure 66: Booking service iteration 2

The data sending approach through AJAX is also marked next.

Iteration 3

Later I found out that the id sending approach was not right. I was using AJAX so using the attribute is a proper way to send data through AJAX. So, I used “data-vendor-id” as an attribute to send the vendor id to the database.

```
</div>
<div class="row">
    <?php
        foreach ($vendor_list as $key => $vendor) {
    ?>
    <div class="col-md-4 col-sm-6 portfolio-item">
        <a class="portfolio-link single_vendor" data-toggle="modal" data-vendor-id="<?php echo $vendor->vendor_id; ?>" data-service-id="<?php echo $vendor->id; ?>" data-vendor-service="<?php echo $vendor->service_name; ?>" href="#vendorModal">
            <div class="portfolio-hover">
                <div class="portfolio-hover-content">
                    <i class="fas fa-plus fa-3x"></i>
                </div>
            </div>
            " ,>
        </a>
        <div class="portfolio-caption">
            <h4><?php echo $vendor->company_name ? $vendor->company_name : " "?></h4>
            <p class="text-muted"><?php echo $vendor->vendor_name ? $vendor->vendor_name : " "?></p>
        </div>
    </div>
    <?php
        }
    ?>
```

Figure 67: service booking iteration 3

There were lot more scenarios where I got stuck or had to spend a hard to solve those problem. It was not possible to mention all those because of time constraints. So, consider these two problems as an example of what types of problem I faced during the development period. These were not the most complex. But I had enough time and opportunity to capture these two examples.

Chapter 11

Testing

Chapter contents

- ✓ **Introduction**
- ✓ **Test plan**
- ✓ **Security testing**
- ✓ **Cross browser testing**
- ✓ **Validation test**
- ✓ **Responsive test**
- ✓ **Functionality test**
- ✓ **Integration testing**
- ✓ **Module testing**
- ✓ **Acceptance testing**
- ✓ **Conclusion**

Testing plan

Testing is a very important phase of software development. Testing should be done properly before deployment of any software. For proper testing test plan is always important. I am providing the test plan of this project below

Test name	Specification	Expected outcome
Security	<ul style="list-style-type: none">✓ Check URL✓ Authentication✓ SQL injection	All result should be passed
Cross browser testing	<ul style="list-style-type: none">✓ Google chrome✓ Firefox	All result should be passed
Validation testing	<ul style="list-style-type: none">✓ Form validation✓ Session validation	All result should be passed
Responsive test	<ul style="list-style-type: none">✓ Mobile device✓ Tablet	All result should be passed
Functionality test	<ul style="list-style-type: none">✓ Login access✓ View reports✓ CSV generate guest list✓ QR code email✓ Search	All result should be passed
Integration test	<ul style="list-style-type: none">✓ Check a full module	All result should be passed
Module test	<ul style="list-style-type: none">✓ Check booking results✓ Add task in todo list	All result should be passed
Acceptance test	<ul style="list-style-type: none">✓ User acceptance checklist	All result should be passed

Security test

Test case Id:	Tc1	Checked time (s):	3
Test type:	Security		

Test details:	Give wrong credential and click on login button	
Expected output:	Test result:	Pass / Fail logs:

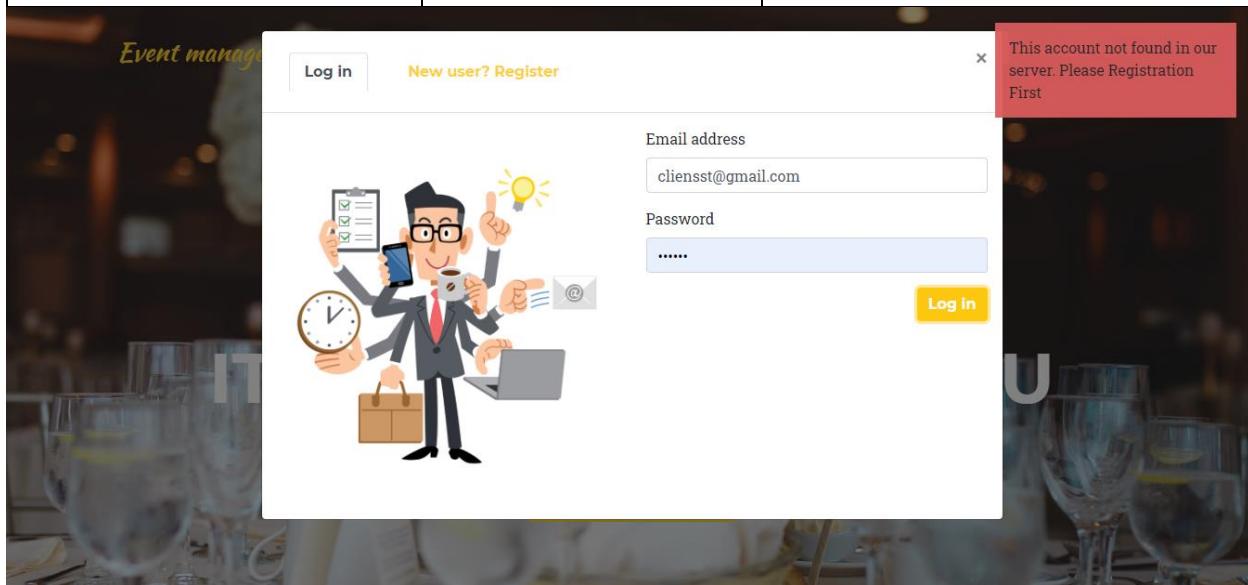


Figure 68: security test

Test case Id:	Tc2	Checked time (s):	3
Test type:	Security		
Test details:	Try to access the vendor dashboard with URL while logged in as a client		
Expected output:	Test result:	Pass / Fail logs:	

System should not allow user to go that page	Pass	System redirect the user to homepage again
--	------	--

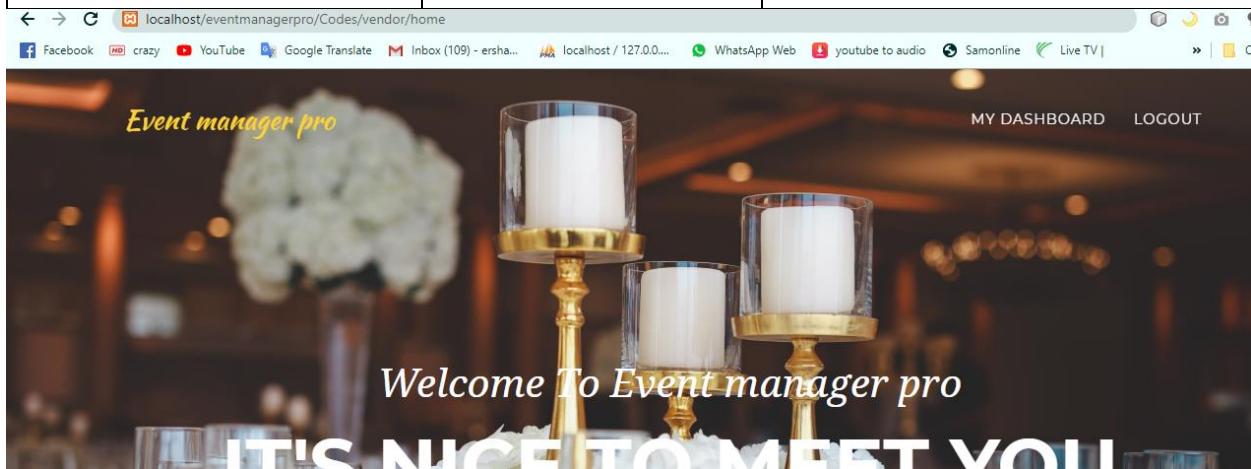


Figure 69: security test 2



Figure 70: Security test 3

Cross browser test

Test case Id:	Tc3	Checked time (s):	3
---------------	-----	-------------------	---

Test type:	Cross browser test	
Test details:	Try to access the system with different browser	
Expected output:	Test result:	Pass / Fail logs:
System should be views and used from each of them	Pass	System worked perfectly in both browser

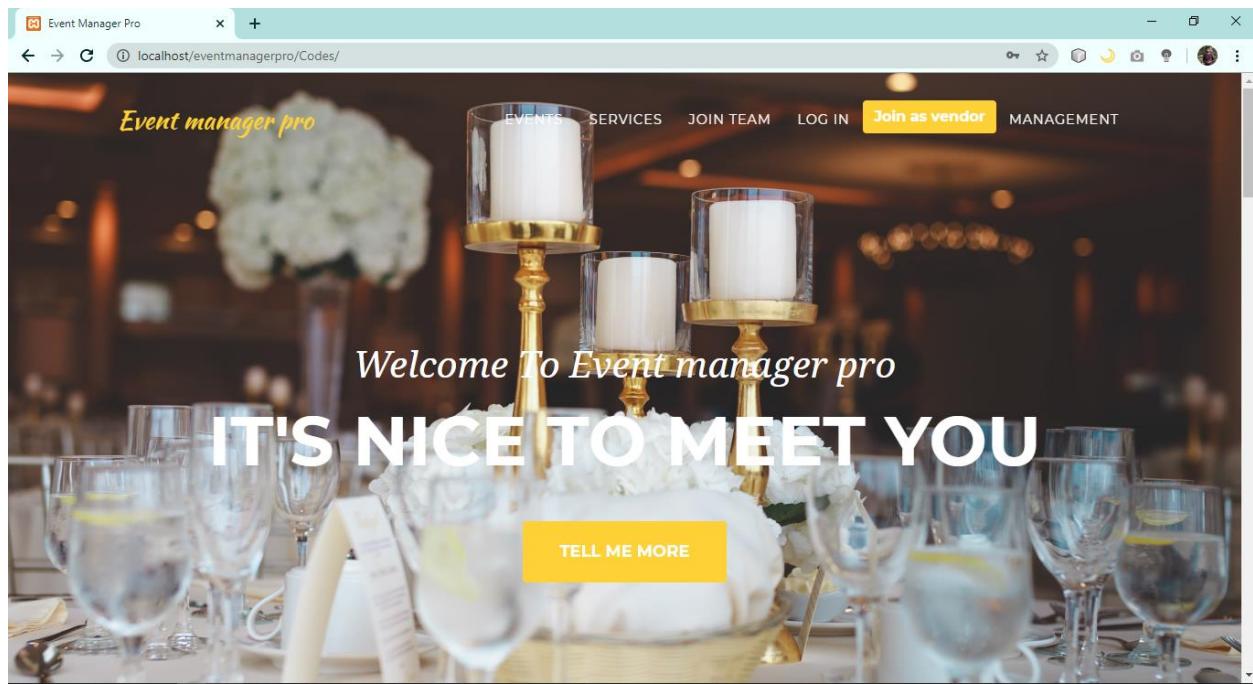


Figure 71 : compatibility test chrome

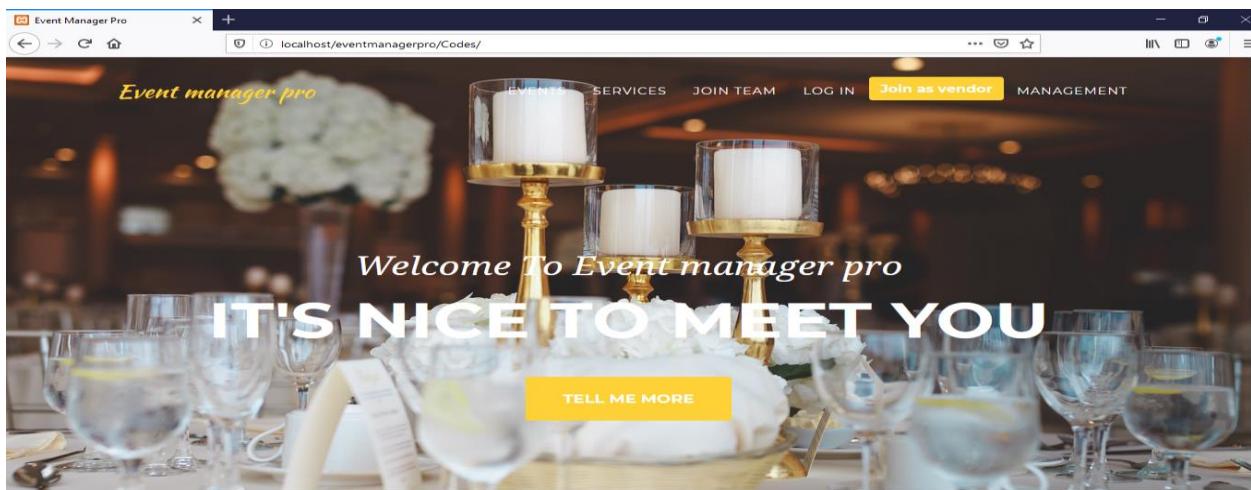


Figure 72: Compatibility test firefox

Validation test

Test case Id:	Tc4	Checked time (s):	3
Test type:	Validation test		
Test details:	Try entering invalid data to the system		
Expected output:	Test result:	Pass / Fail logs:	
System should show error message	Pass	-	

[Log in](#)

[New user? Register](#)



First Name *

Ershadul

Last Name *

Bari

Mobile No. *

01681999999

Full Address *

47 Panthapath, Dhaka

Email Address *

1000

Invalid email

We'll never share your email with anyone else.

Password *

Confirm password *

I agree that I have read and accepted the
[Terms & Conditions](#)

You must accept terms and condition



Figure 73: registration validation test

Your Name *
Full name required

Your experience*
Staff type required

Your Email *
invalid email

Your expected wages (per shift / BDT)
invalid expected salary

Your Phone *
Phone number length invalid

Browse... No file selected.
File not uploaded

Male

Please Write about yourself
Please Write Something about yourself!

Your Location*
Location required

REGISTER

Figure 74: Staff registration validation

Create your Special Event

Event Name * My engagement get-together

Event budget * 400000

Event Category * Select category here.. Event type * Engagement Event location * Mohammadpur

Event Category required

Event city * Dhaka Event date * mm / dd / yyyy

Event Date invalid

I agree that I have read and accepted the Terms of use
You must accept terms and condition

Create Event

Figure 75: Event create validation

Responsiveness test

Test case Id:	Tc5	Checked time (s):	3
Test type:	Responsive test		

Test details:	Try to access system using mobile and tablet	
Expected output:	Test result:	Pass / Fail logs:
System should appear appropriately	Pass	-

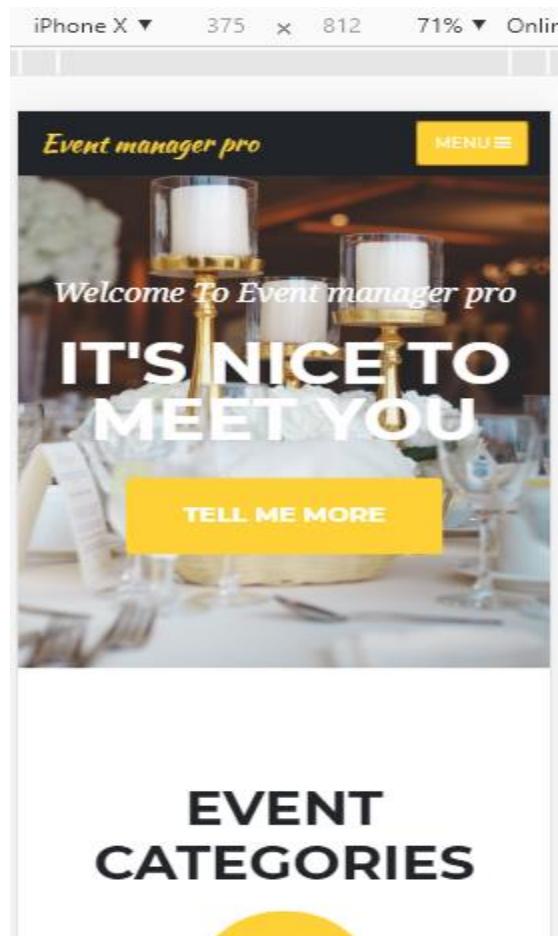


Figure 76: Mobile responsive test

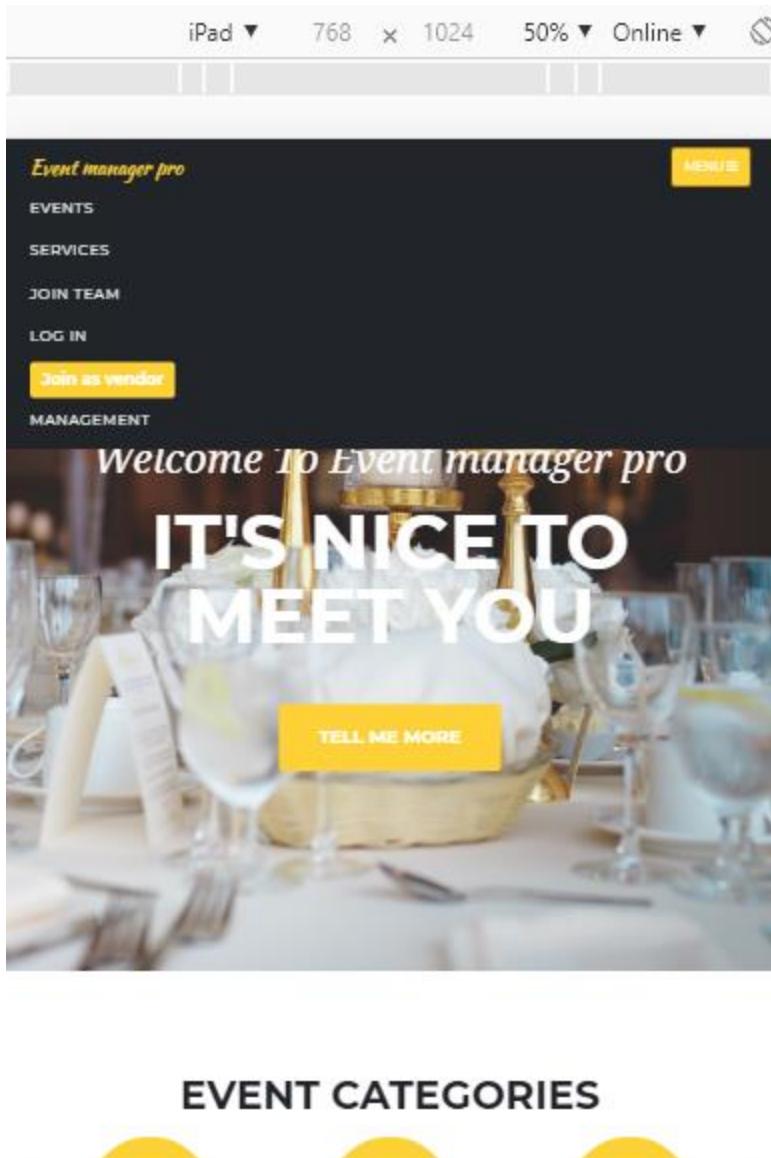


Figure 77: tablet responsive test

Functional test

Test case Id:	Tc6	Checked time (s):	3
Test type:	Functional test		

Test details:	Enter proper credentials and hit to log in button	
Expected output:	Test result:	Pass / Fail logs:
System should allow user to log in	Pass	-

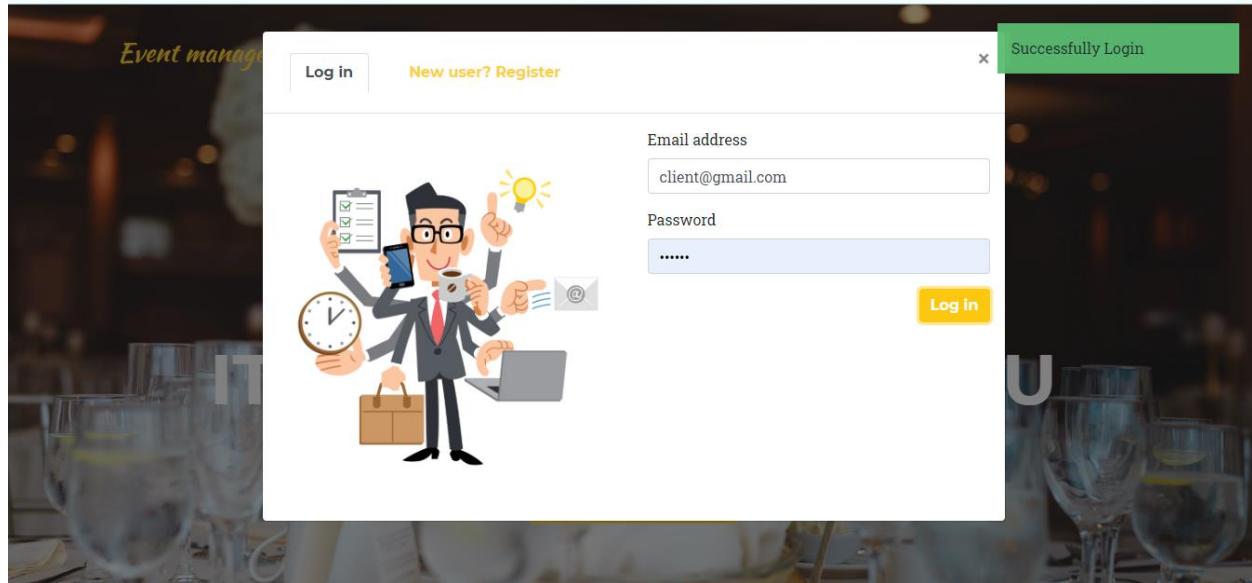


Figure 78: functional log in testing

Test case Id:	Tc7	Checked time (s):	3
Test type:	Functional test		
Test details:	Login as admin and go to dashboard		
Expected output:	Test result:	Pass / Fail logs:	

System will show a graphical report	Pass	-
-------------------------------------	------	---

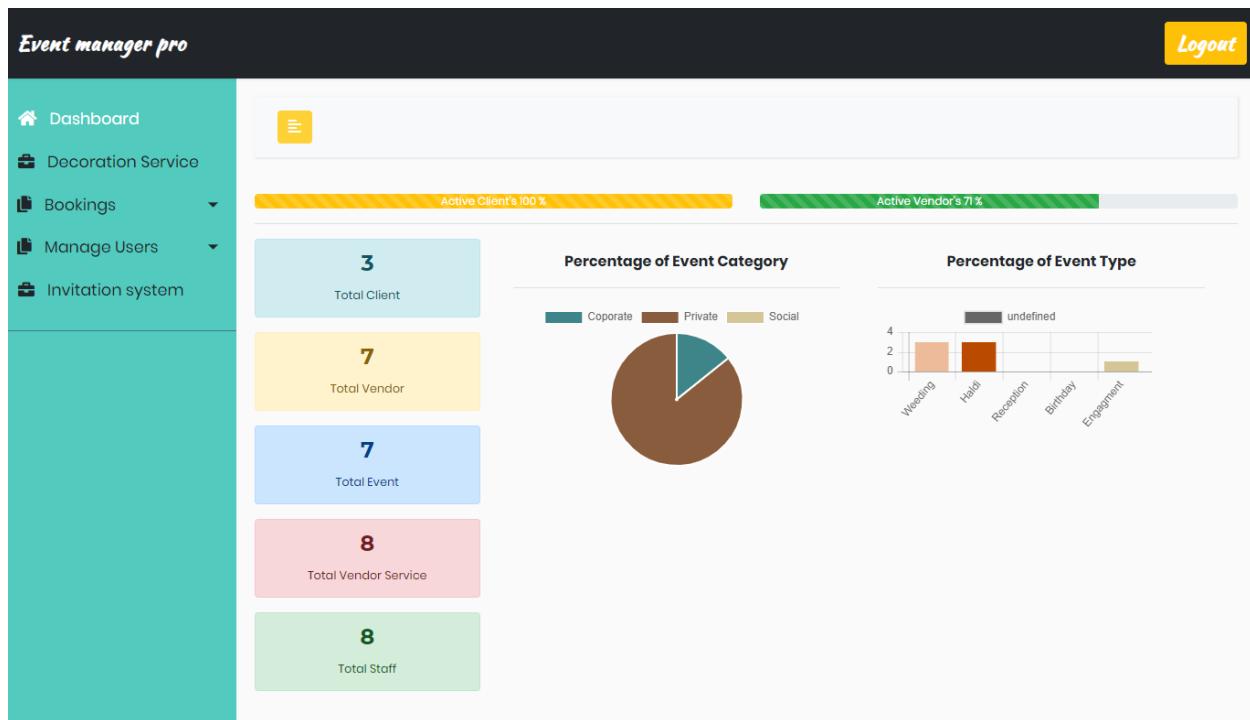


Figure 79: Admin panel functional

Test case Id:	Tc7	Checked time (s):	3
Test type:	Functional test		
Test details:	Upload CSV file and check guestlist		
Expected output:	Test result:	Pass / Fail logs:	
System will show a success message and then show guest list	Pass	-	

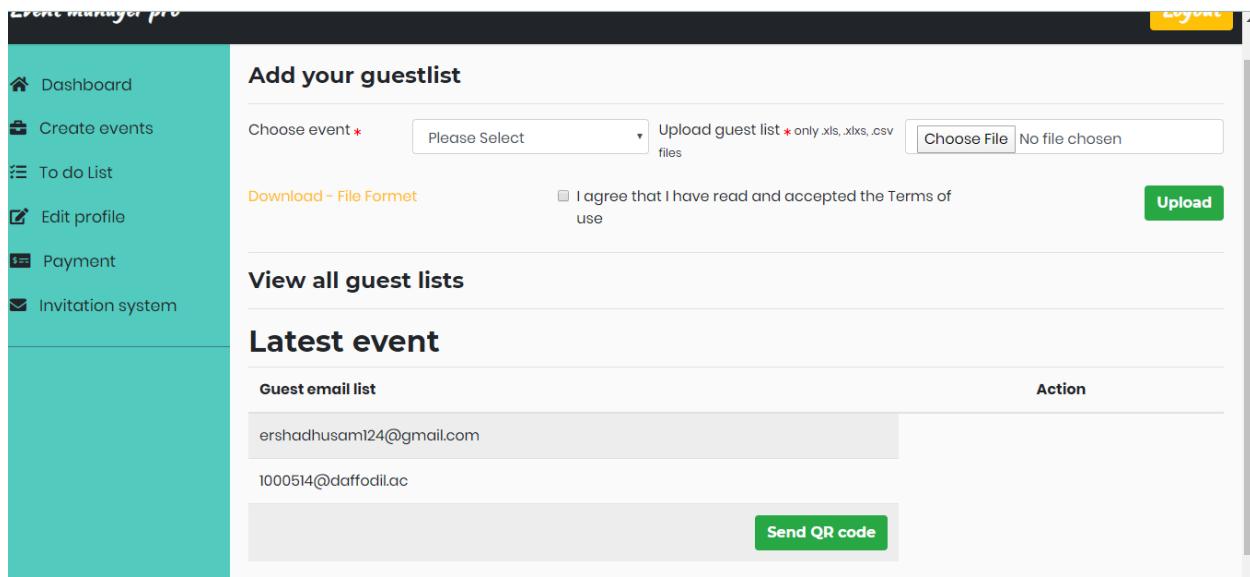


Figure 80: CSV functional test

Test case Id:	Tc7	Checked time (s):	3
Test type:	Functional test		
Test details:	Click on send QR code		
Expected output:	Test result:	Pass / Fail logs:	
System will show a success message and then show guest list	Pass	-	



Event manager 16 <techtalents.contact@gmail.com>

to me ▾

Invitation Body 16



◀ Reply

▶ Forward

Figure 81: Functionality Mail send

Chapter 12

Deployment

Chapter contents

- ✓ **Successful deployment criteria**
- ✓ **Successful deployment steps**
- ✓ **Deployment strategy**
- ✓ **Training**
- ✓ **Data migration**

Software deployment is an important phase of the implementation of the software. It involves all the activities that make the software usable in a real environment. This is the immediate next step of testing. Once the software is fully tested and bug-free then it is ready to be deployed. There are three major types of deployment parallel, phase / incremental, and big-bang. One of these will be chosen for this project in a later section. Now I will discuss how this project can be deployed and a suitable process and techniques for deployment below.

Successful deployment criteria

Successful deployment is important for any project to place the system in a live environment. Without the successful deployment, software performance and quality can get affected. There are certain measurements or criteria to assess the success rate of software deployment. I am providing those criteria below.

- **Availability** – The software availability should be maintained while the software is deployed. Availability refers to getting access to the software from the possible locations and devices that can be used by a user. During the deployment, this factor should be considered strongly. Even after the deployment, the availability should be tested.
- **Performance** – This is another important criterion that should be taken care of. After the deployment, the software should be tested whether its performance is balanced or not.
- **Data security** – While the data migration is being done it should be a matter of concern that no data should be lost or modified during the transfer. Otherwise, it will be a reason of loss for the organization. Successful deployment doesn't support any loss in data security.
- **Time & budget** – This another reason to be concerned of. The deployment cost mustn't exceed the budget. As well as the time should not also cross its limit. Otherwise, it won't be count as a successful deployment.
- **Stakeholder acceptance** – one of the major criteria of a successful deployment is, it should be done as the stakeholders want. If the deployment doesn't have the stakeholders' acceptance then it can't be considered as a successful deployment.

Successful deployment steps

Some significant steps need to be followed to achieve the above-mentioned success criteria of system deployment. Some best practices are done to deploy software professionally. That decreases the risk of failure. I am providing those steps below.

- **Planning** – Proper planning should be made about how the deployment will be done. In this phase, developers decide about what measurement and precautions will be taken during the deployment works along with the stakeholders.
- **Using deployment checklist** – Software deployment is a complicated task. A certain checklist can be maintained that will support to manage the tasks or needs for the deployment. Maintaining a checklist will help to remember the precautions, decisions, and managing the task.
- **Choosing the right deployment strategy** – Choosing the right deployment method is very important. Deployment success mostly depends on choosing the right deployment method. The deployment method should be chosen considering many important facts. Those are, organizational structure, old system scope, and impact, business size, budget, etc.
- **Adopt continuous integration & delivery** – This refers to pulling the source code to the server from the developer end and testing the code. This helps the team to avoid “Integration hell”. This term defines the situation when the code works on the local machine but doesn’t work equally in the live server. Besides continuous integration, continuous delivery is also important. It refers to packaging and preparing the code for deployment. The best practice is conducting these two tasks parallelly
- **Automated deployment** – Deployment is a complex process and doing it manually increases the chances of errors. Automated deployment reduces the chances of failure, makes the process faster and easy. So, deployment should be done in automated process building scripts.
- **Rollback** – There are always chances of happening any unwanted failure. Rollback is the process that can give confidence to the developer. In case of something wrong, this rollback tool can be useful as a savior.

(Ben Putano, 2018)

Deployment strategy

As it has been said already that there are major three types of deployment strategies available. But not every strategy is best for all type of projects. The parallel deployment refers to each old and new system running parallelly. This method is used while the organization is large and processes huge number of transactions. The pilot/phase method is about deploying small changes over a long period of time. This process takes huge time to complete. Another deployment technique is big bang. It refers to moving from the old system directly to the new one.

This method is very risky for large organizations. Small organizations can adopt this system easily. This is also less costly approach.

For this project, I will suggest the big bang approach. I am providing the justification for this below.

Despite of having many risks, this approach will be better for this project to apply. This project is made for event planning organizations. The structure of an event management organization is never too big as the bank, hospital, or govt. organizations. The scope and transaction of their business is limited. Mostly an event organization are small-medium sized organization with 50-250 employees at maximum. Moreover, a smaller number of event management company will be found who were using any automated system like this from before. They usually use the manual approach mostly. This information is not assumed but these were collected while I was doing the research about with event organizations. The details observation report will be found in **appendix C**.

The big bang approach is a quick process of deployment. There are many benefits of using this approach. Though it is considered as a risky approach but this only applies when the organizational structure is big. There are some benefits of this method like,

- Less costly
- Less time consuming
- Possible to move quickly to the new system
- No need to worry about using two system like parallel or pilot approach.

So, these are the reason why I chosen this approach for the deployment. (Thatiparthi, 2018)

Training

Employee training is needed to make the new system usable to them. I am providing a summary below what it will take to make the employees get ready to use the system.

SI no.	Training subject	Details	Duration (hours)
1	System access	This is about the process of log in into the system.	1
2	Graphical report understanding	This is about checking the graphical reports like pie charts, bar chart,	1

		colorful card which represent a certain meaning	
3	Manage users	This is about managing the clients and vendors. Approving when they login and blocking them when needed.	2
4	Check bookings	This is about checking the bookings	1
5	Staff details managing & searching	This is about checking register staff data and searching from them.	1
6	QR code invitation system	This is about generating QR code and sending mail.	3
Total =			9 hours

Data migration

Data migration is the process of moving data from old system to the new one. The organizations usually have lots of important data in their manual or automated system. The automated system stored the data in database but in manual approach organizations store their data in notes, excel files, or access database some times. By implement the new system they can't afford to forget about their previous data. They have to work with those as well. Because data is important for every organization. So here, data migration is the solution which helps to storing the data into the new system. Manual process of data migration is inserting the data manually. But if the old system has a database from before, then there are many tools that can be used for data migration. Some popular tools for data migrations are, AWS Data migration (Amazon), Azure Document DB (Microsoft), Informix (IBM), etc. There are many more options but these are the leading software in the market currently. The organization should pick one that is more convenient for them. (Talend, 2019)

Chapter 13

Product Evaluation

Chapter contents

- ✓ **Introduction**
- ✓ **Usability**
- ✓ **Sustainability & maintainability**
- ✓ **Conclusion**

In this chapter, I will evaluate the project using some criteria to explain how well is this project maintained. I am providing my brief discussion below.

Usability

Usability is the term that refers to how much a software is usable for the user. In this project, Throughout the development usability characteristics were tried to maintained. Usability means maintaining the visibility, consistency, Error prevention, User control and freedom etc. There are 10 usability heuristics defined by Jakob Nielson and these are some of them. I am showing few example below how I maintained the usability factors in this system.

Visibility

Visibility refers to knowing the current status of the user by themselves. Providing an example below from this system.

This is header before log in. user will be easily able to understand they are not logged in but they have to.

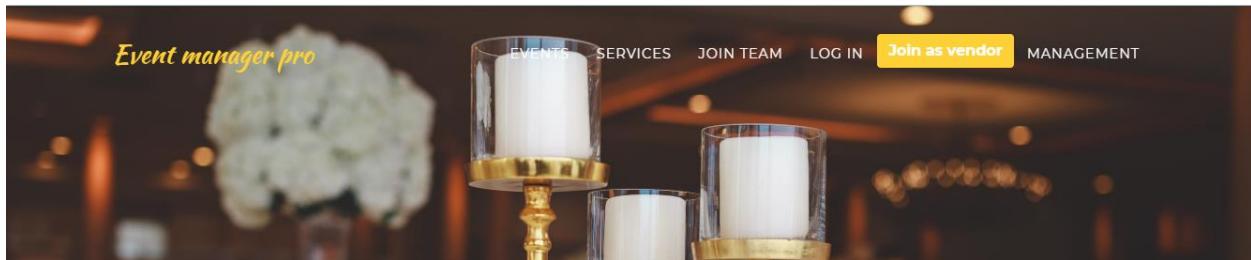


Figure 82: Visibility 1



Figure 83: visibility 2

Header buttons and design is changed to give the feel that the user is already logged in.

Error prevention

Error prevention refers to prevent the user from making errors. It is a good sign of usability. Providing an example below from “Event manager pro” system.

Email Address *

10000

We'll never share your email with anyone else.

Figure 84: Error prevention

This screen is captured from registration page of this system. Here once a user clicks on this input field the email address field provides red borders until any valid email is entered. Most of the system provides error message after any mistake is done but this is always warning the user that you are doing mistake. This increases the usability of the system.

Portability

Portability refers to the system should be usable from any device perfectly. As a web application this project also have this ability. In this era of technology everyone has access to the internet easily. So as the number of users increases the variety of devices is also increasing day by day. Nowadays, number of smartphone user is remarkable. So, this project build considering all these facts that this should be usable by any type of smart phone, tablet, or web browser. I am providing the screenshot below to support my statement.

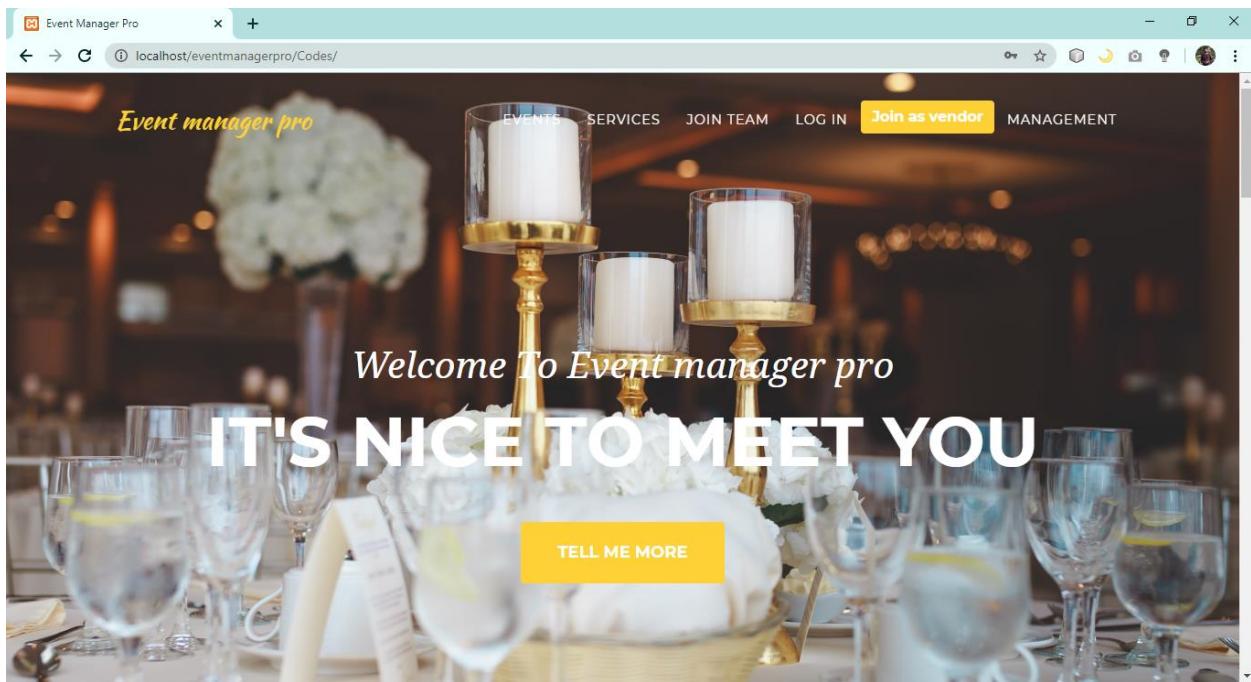


Figure 85: Google chrome

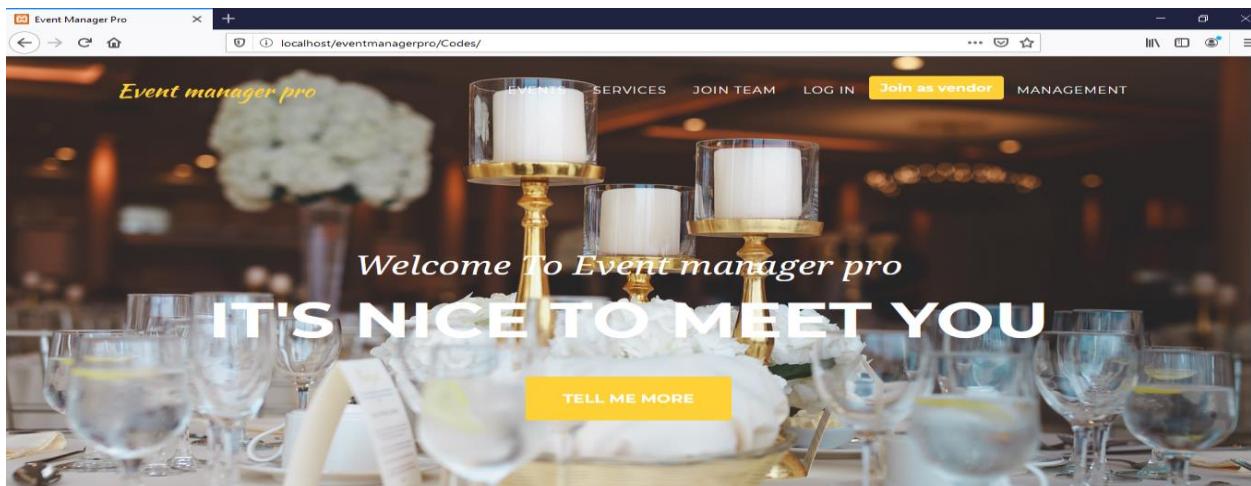


Figure 86: Mozilla firefox

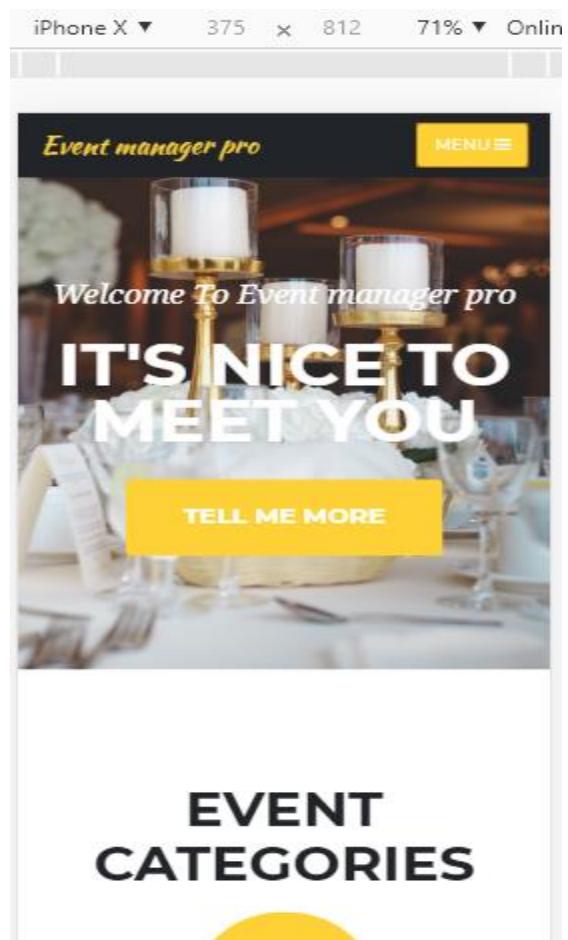


Figure 87: Smartphone

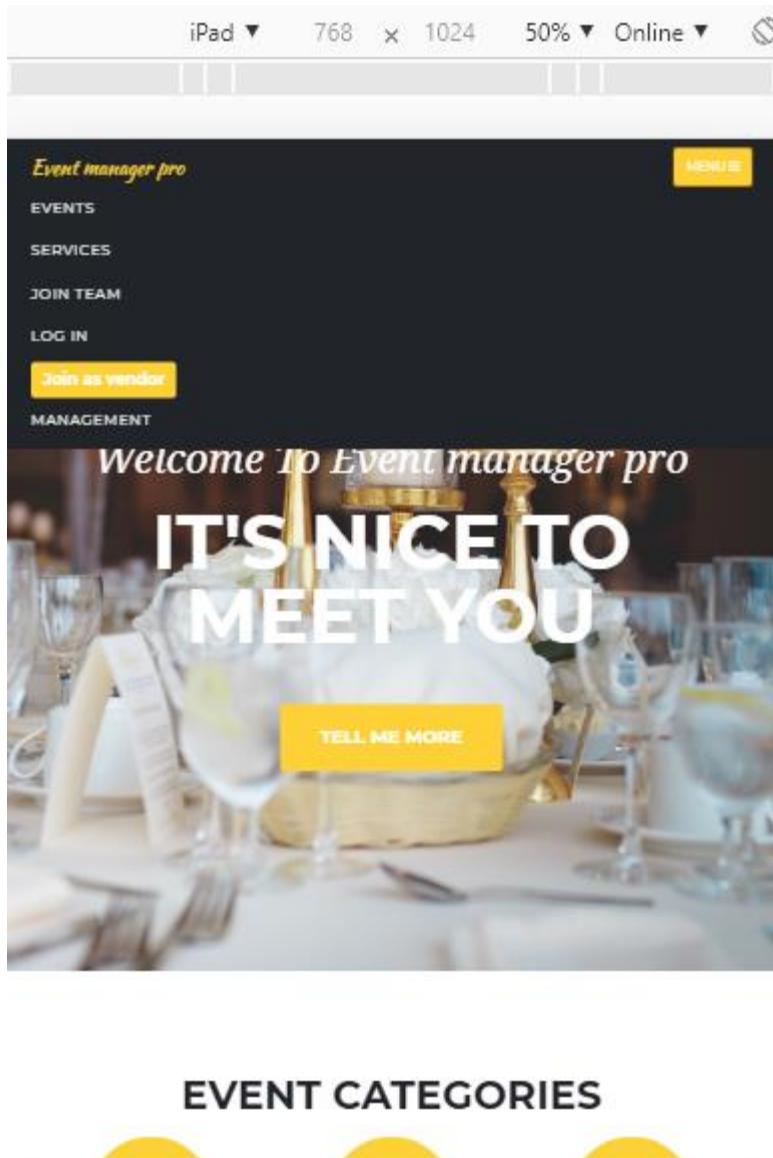


Figure 88 : Tablet (ipad)

Security

Security is an important factor to be considered to produce a successful product. Strong log in system is an example for a strong secured system. I am providing the screenshot below to show the security of this system.

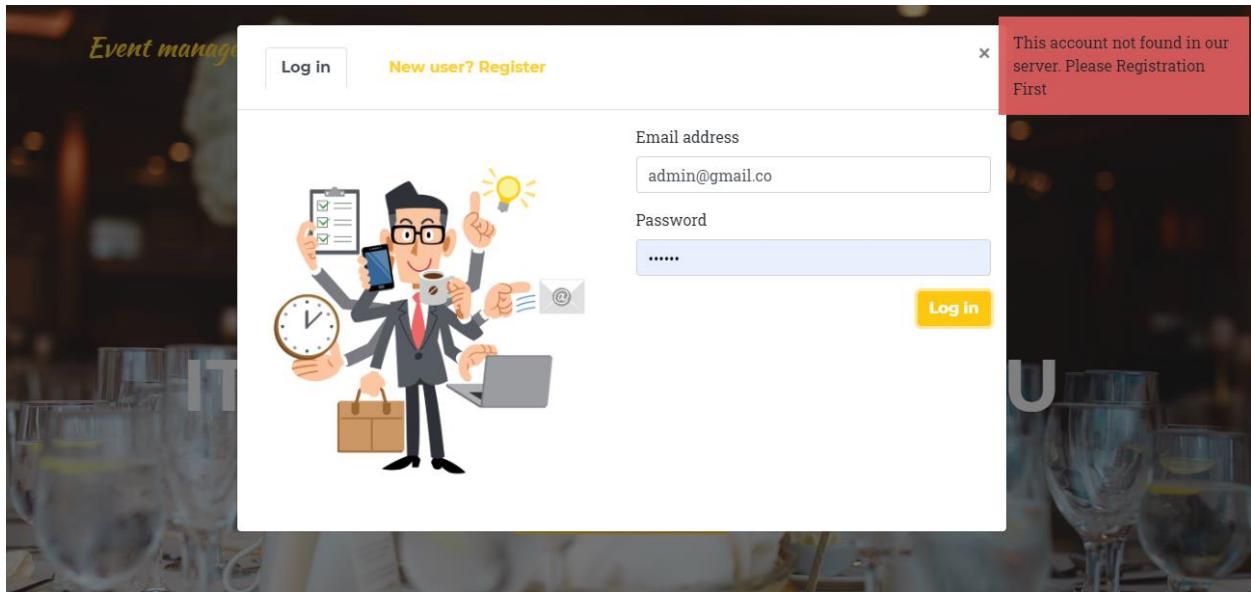


Figure 89: Security 1

This is the result when entered any user id which is not registered.

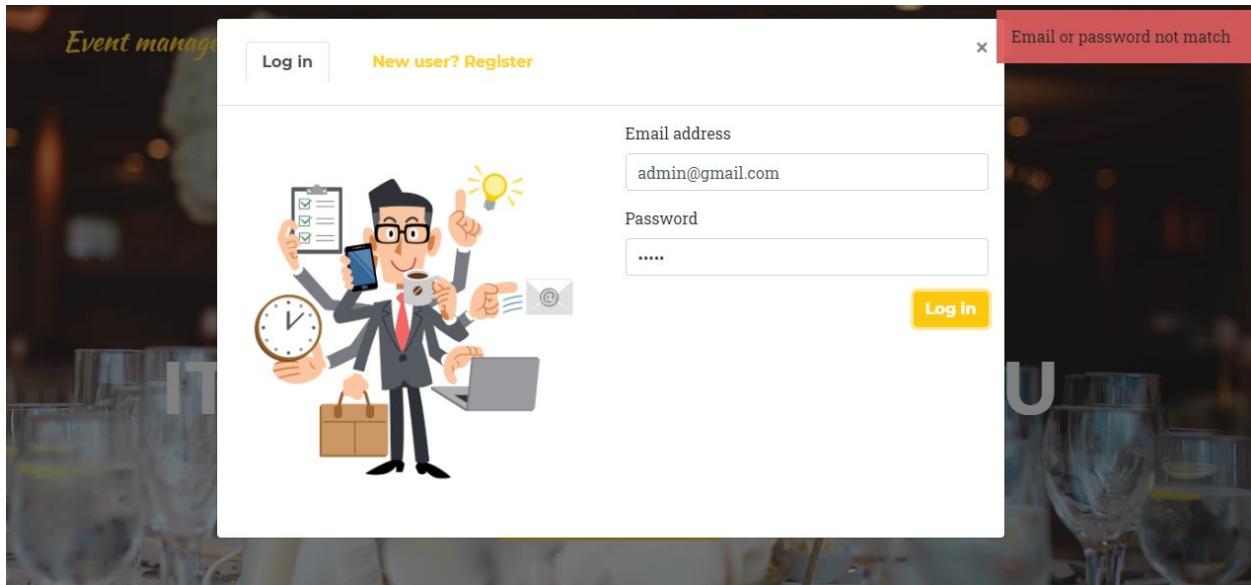


Figure 90: security 2

This is the result when entered any wrong user id.

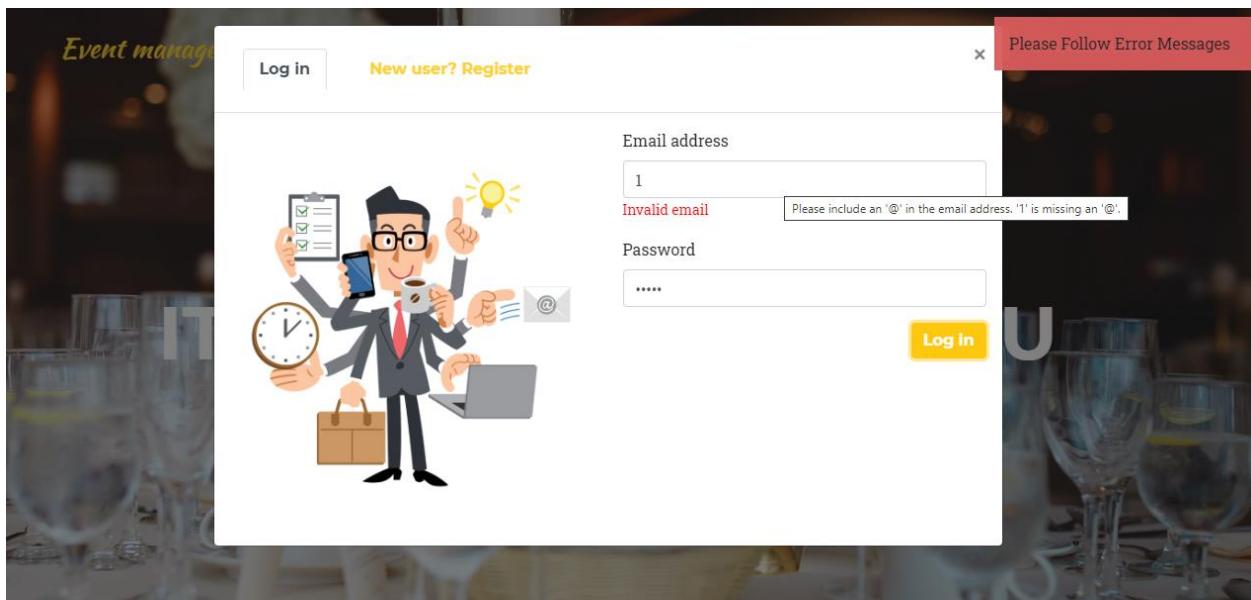


Figure 91: security

This is the result when entered any invalid email.

So here was the evaluation for this project. These characteristics were important to show the efficiency of the system.

Chapter 14

Critical appraisal

Chapter contents

- ✓ **Objectives met**
- ✓ **Objectives that partially met**
- ✓ **Objectives not totally met**
- ✓ **Strengths**
- ✓ **Weakness**
- ✓ **Future development**

In this chapter I will do the critical appraisal of this system. What I could do in this project and what I couldn't. I will also discuss the strengths and weaknesses of this system. Here I am providing the objectives below and measuring those bases on my implementations.

Objectives met

In this part, I am mentioning the objectives those were achieved by me throughout this project.

Academic

- **Methodology**

One of the core academic objective of this project was implementing a methodology in the development of project. In this project I was using the scrum methodology. Learning and having the knowledge of implementing a software development methodology is a professional need for any software developer. The objective was to learn each and every aspects of Scrum. How it can be used in a project. And realizing its benefits and drawbacks. In this project I have tried my best to following the scrum best practices in every possible area. I am describing the success and problem faced during this phase.

Success – In this project, I have experienced many benefits of using scrum. In many parts, I have implemented the scrum in a professional manner. For example, the requirement gathering and planning phase was according to the scrum structure. Regular scrum meetings have been conducted. The timeboxing technique was properly used following the scrum structure. Moreover, due to fixed time boundary some requirements have been sacrificed and moved to the further development phase. The development pattern was iterative. After completing a sprint test was conducted to ensure the deliverables are working.

Problems – Due to being an academic single project, in some places Scrum didn't fit properly. I couldn't conduct any scrum retrospective meetings properly. Because there is no team of developers. So, I couldn't get the benefit of that meeting like improving the development strategy, discussing about any barrier with the team.

In spite of having many problems I can say that this experience of using scrum was wonderful for me. I have definitely learnt some extra ordinary things about scrum. I know how it can be implemented properly which will be useful for me in future.

- **Analytic document**

Analytic documents refer to using different kind of analytical diagrams which are used for analysis phase of software development. The objective for this project was to understanding

and earning the capability of using these tools in a professional manner. Which will be helpful for me in future as a software developer. Some of the popular analytical tools are UML use case, UML class diagram, UML sequence diagram, Component diagram, ERD, Deployment diagram etc. In this project, I have implemented all of these documents in a sequential manner. Describing the experience of using this below.

Success – In this project, I have implemented almost all the diagrams successfully. Many of them were new for me. But I learned and tried to implement those for this project. This helped me to know about diagrams. How to use those and what are their benefits. I have drawn some of these diagrams before starting the code. Which has improved my analytical skills of software engineering. At last it can be said that this was a successful approach in this project.

Problem – I have also faced some problem to meet this objective. As some of the diagram were new to me so it was hard for me to learn and then implement them in a fixed time boundary. Moreover, as this is an academic project so I had to use free online tools for diagramming which was quite painful and in some cases I lost my completed diagrams due to this.

Though I face some problem but the skill I learned will be surely helpful for me in my career.

- **Web application**

Building a web application in a single project is quite a big achievement for me. The objective here was learning the techniques and best practice of building a web application. In this project, I build a website which will solve many problems regarding event management industry both for the clients and event vendors. I had to implement a web application that will support some beneficial features for both the users. The choice of web application was made because of its availability and accessibility. I am providing a brief discussion how much this objective was met.

Success – To describe the success of this objective I would like to say that I have implemented the whole web application using a php based framework CodeIgniter 3. Which follows the MVC pattern. MVC pattern is the most popular and widely used software programming design pattern. Moreover, I have used a latest approach of software development which is using Ajax. Ajax is an approach which improves the website usability and makes it more efficient to the user. So, I can say that this was a successful approach in this project and no other major difficulty were faced.

Business

- **Service booking system**

One of the major features of this system was to make the service booking system easier, faster, and within budget. This feature has been implemented in the system as it was expected to be. This will help to add some genuine business value to this project. The users will be attracted to this service offered by this system. It will help them to explore many options to find any service they want. They will easily search and filter services from the search page. They will be able to send the booking request and confirm the booking within just a few clicks.

Success – As it was planned since the beginning to implement some core functionality in this feature. Those are the client will be able to buy services against their specific event and they do not need to give the event details again and again which will improve their user experience. Another functionality is they will be able to search their required service by using keyword, type of event and budget. Moreover, there is also a function that will check the user budget before buying the service. All these major functionalities have been implemented in this core feature. So, it can be counted as a successful implementation of this feature.

- **Managing events & tasks**

Another major business feature was the client will be able to manage their events and all event related tasks through this system. They will be able to create event, view their upcoming events, edit them, delete them, make them pending and running. Moreover, they will also be able to add task lists against every event. They will be able to manage their lots of event related tasks in this section in a simple way. They will be able to add upcoming task for an event, mark them done and undone and also delete them. I am providing the success criteria of this feature below

Success – This feature was developed successfully in this project. Each of the requirements for this feature was touched properly to make this successful and tested. There was nothing left to implement.

Objectives met partially

Some objectives in this project were partially met. I am describing those below.

Business

- **Staff hiring process**

Staff hiring system was one module of this system to solve the existing problems of hiring staff in event industry. There should be a process where the staffs from various location will be able to join the team of the event management company. In this process the staff will be able to register to the system. They will be able to get email notifications when they will be called for an event contractual works. On the other side the admin will be able to search the staff from the various locations and contact them or hire them through their email address whenever needed.

Success – This feature was partially successful. The user will be able to register as a staff in the system and send their information. The admin will be able to find the staff using location easily. They will also be able to check the details of the staff. It will help them to find staff easily

Problem – Because of time constraint there is no full hiring process or sending email function can be implemented in the system.

Though it is a partially completed feature but it will still give some benefit to the company as they will be able to find staff at suitable location. But they have to contact them manually not through the system.

- **QR code invitation system**

Another major functionality of this project was to send invitation for an event to the guest. This automation system will solve many problems of the user or people who are hosting an event. One of the core objectives of this project was to solve the problem of frustration due to sending manual invitation one by one. Another main objective was to identify the guests with a unique identity so that they can prevent having unwanted guests in the event. I am providing the success factor of this feature below.

Success – This feature was fully implemented just as it was planned at the beginning of the project. The system allows the client to upload guest list through a CSV file not by manual entry. It also allows the user to generate the QR code and send that uniquely to each guest.

Problem – Though it is a working feature but the plan was to make admin send the mail generated unique QR to the guests. Right now, the system is allowing the client to send the QR code using the email. This problem was occurred because of last moment accidental loss of some codes and time constraint.

Objectives not met

Some objectives in this project was not met at all. I am describing those below.

Business

- **Integrating payment method**

Integrating a secure payment method increases the software value at its peak. But as a it was a single academic project, there wasn't available time and open resource to ensure the secured payment method. But it can be developed in future.

Strengths and weakness

Strengths

- The system has proper service booking system
- The system allows secure login and registration system
- It allows both user to manage their profile information
- The system allow client to manage their events properly
- It allows the clients to handle all their task a managerial way
- It allows the client to search for services using various parameter
- It allows the user to create the guest list uploading a CSV file easily
- It allows the clients to send auto-generated QR code invitation to their guest
- It allows the admin to manage users
- It allows the admin to view and search staffs
- System is well design and easy to use

Weakness

- The system doesn't provide any payment method
- The system doesn't allow admin to do the task of QR code invitation system
- The system doesn't require admin permission to process booking
- The system doesn't allow admin to change their credentials from system
- The system doesn't have proper hiring process

Further development

- Integrating payment method
- Implementing proper hiring process of staff
- Adding more security measures

- Creating admin role based access system

Chapter 15

Conclusion

Through this project I have earned a massive learning about software development. These learnings were about different latest tools and techniques of software development. I have upgraded my problem-solving skill. I have earned the ability of critical thinking. Throughout the documentation I have learned the professional way of documenting a software after building. I have done a proper analysis before starting the development which helped me to upgrade my diagramming skills. Because of playing multiple roles for this project as a developer, tester, analyst and project manager by myself, now I understand the software development lifecycle better. I also have advanced the researching skills while preparing the literature review part. Moreover, I have earned a sufficient understanding of making development plan. Overall it was a great experience working on this project, these skills will definitely help me in my professional career ahead.

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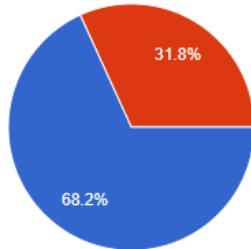
Appendix C

Survey

QUESTION OF SURVEY

Did you ever hire an Event Planner ?

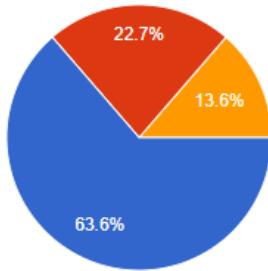
22 responses



- Yes
- No

1. Facing a dilemma while thinking about hiring the best EVENT PLANNER who will match with your Budget and plan your event as you always wanted.

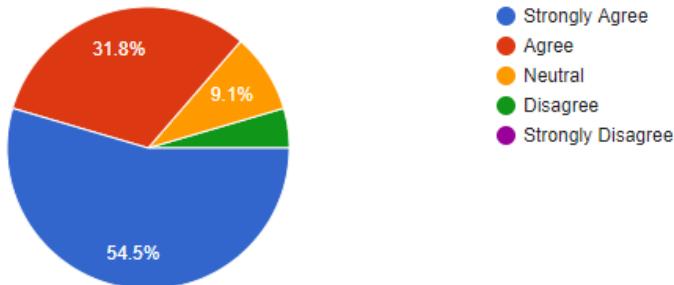
22 responses



- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

2. Any website / online platform, which will provide you many options for event services and from where you can choose very easily according to your choice. this will be helpful.

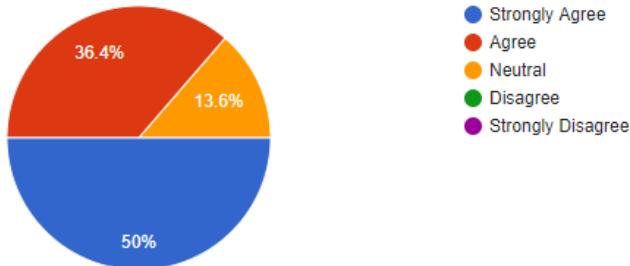
22 responses



- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

3. You face trouble remembering too many things regarding your upcoming event. This will be helpful if you can check all the processes & bookings in your laptop or mobile screen at one glance through a dashboard

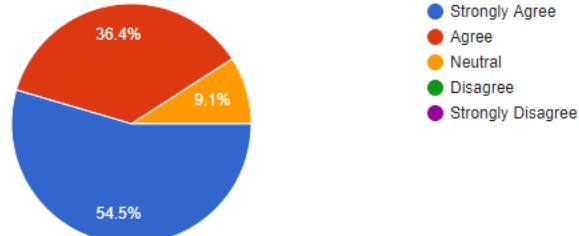
22 responses



- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

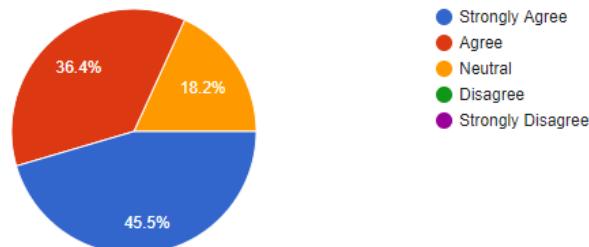
4. Are you looking for a website / online platform, where you can find not only the desired Event planner but also the other services (Sound, Photographer, Lighting Catering, etc.) for your event?

22 responses



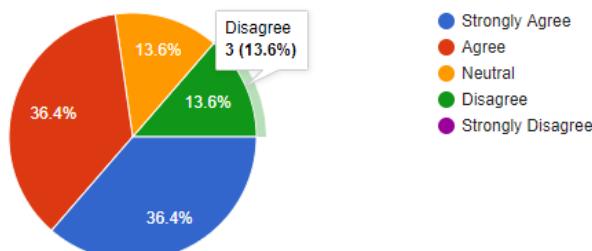
5. A website can be helpful to find a place location wise easily to organize any event.

22 responses



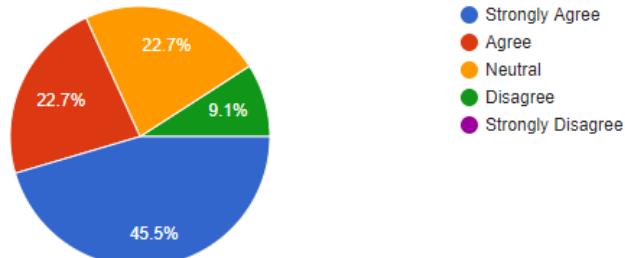
6. Sometimes it becomes painful to give the invitation by going physically. Or using email is also seems so tiring. In that case, if there would be a software from which you will be able to send an invitation through email with a QR code in just a few clicks. This will be helpful.

22 responses



7. Sometimes you receive the number of guests more than expected so that you have to face much trouble like shortage of food, space, and the situation goes unmanageable. Would you like to avoid this situation by controlling the number of unwanted guests? □

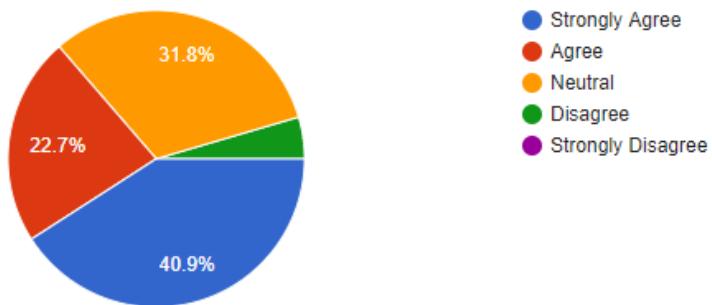
22 responses



8. While hosting an event would you like to maintain an easy to-do list where you can manage

9. You found your desired event services perfectly using search engines or social media. Do you think those results you see was because of paid advertisements?

22 responses



10. It always happens that you have made a budget for your event but unintentionally you cross that.

22 responses



Observation question

An interview is taking place at the moment with an Event management owner who's name is Shanto. We had some words with him and asked some questions regarding his business. Those questions and his answers are given below:

i) What is the structure of your business organization?

Shanto: Firstly I would like to tell you that I love to help people and therefore I have chosen this field. As we know Event management is a business which serves customers with due requirements. Now regarding to your question I would like to state that, It is quite difficult to build an organization for event management in this competitive era. I have employed a total of 9 workers for specific sectors. Sectors have been divided to work for specific purposes. The motto of all our sectors has always been to fulfill the priorities or demands of customers into much extent. We have been organizing our events under three basic roots, That is Planning, Designing and Management. I have been working on the planning sector since the beginning, then my manager merges with 3 of our designers to explain our requirements so that they can execute the plan as per required budgets. Then 5 of our workers put off their efforts to complete the task after my approval. Yes of course I be there to invigilate the sight and be spontaneous to handle all the obstacles as much possible but otherwise my manager supervise the sight until the work has been executed.

ii) How do you manage your managerial works?

Shanto: This is one of most difficult things to do in this organization because getting your works done by the employees is hard nut to crack. When you do things by your own you know what and how to do it but when you have to make your work done by employees things get complicated. I face many troubles when I try to make them understand the works they have to do. Sometimes they fails to visualize what I wanted them to do and ends up with lot of troubles. Thus I provide them plan charts for necessary works such as product bills, many slips, many invitation cards to access the place where they have to organize, etc. And unfortunately they lose those important documents sometimes and as a result, I have to face a lot of problems. In this organization one of the main thing is to keep things confidential. Sometimes

confidently of my organization is lost through my employees. My employees leaks some specific information of my organization which makes things troublesome.

iii) What is approximately earnings every year?

Shanto: Every organization works for their benefits. They always try to improve their revenue. But to be frank our revenue is not quite stable because this is a seasonal business. As we know seasonal businesses doesn't make profit all over the year, my organization is also the same. But as known seasonal businesses make huge amount of profits in short amount of months. My earning every year is 8,00,000 bdt - 12,00,000 bdt approximately.

iv) How do you hire your staffs?

Shanto: Hiring right staffs is one of the main important work in this organization. If good staffs aren't hired, the works wont cherish. There are some permanent staffs and some temporary staffs. Permanent staffs works for the organization all over the year and temporary staffs works for some specific event to organize. But there is one thing common between permanent and temporary staffs, they charge a lot. Moreover staffs cant be found on correct time when you need them. They make delays, excuses and a lot of thing which hampers my work. Sometimes when I give them location of a place where they need to organize, they can't find the location correctly. As a result, they face a lot of problem and gives me as well.

v) How do you handle your clients manually?

Shanto: This organization's earnings come from clients. So undoubtedly dealing with clients is crucial. I personally deal with all the clients and try to understand the demands of my clients. I try to give them the best I can according to their budget. While organizing event for the clients I need some necessary informations from them regarding the event but unfortunately always it's not easy to reach them. My phone bill runs high every month because I have to make a lot

phone calls to the clients and many other persons. So as you can see earning through this field is not a piece of cake and a very costly process indeed.

I hope you found the appropriate answers of your questions and you have a good knowledge about this organization by this conversation.

Appendix B

New system cost for the 2nd year

Component name	Quantity	Unit price	Total price (BDT)
Desktop computer (core i 3 processor)	-	-	-
Operating system (windows 10)	-	-	-
Domain	1 year	1,000	1,000
Web hosting (Windows enterprise plan, 25gb disk space, Unlimited email & MySQL database)	1 year	850 per months	10,200
Email marketing plan	3 months	3,500	10,500
Maintenance	1 year	10,000	10,000
Staff salary	1 person	8,000	96,000
Staff training	-	-	-
Total cost for 2nd year =			<u>1,27,700</u>

New system cost for the 3rd year

Component name	Quantity	Unit price	Total price (BDT)
Desktop computer (core i 3 processor)	-	-	-
Operating system (windows 10)	-	-	-
Domain	1 year	1,000	1,000
Web hosting (Windows enterprise plan, 30gb disk space, Unlimited email & MySQL database)	1 year	950 per months	11,400
Email marketing plan	3 months	3,500	10,500

Maintenance	1 year	10,000	10,000
Staff salary	1 person	8,000	96,000
Staff training	-	-	-
Total cost for 3rd year =			<u>1,28,900</u>

Calculate possible earns

The possible earning were shown mostly based on the interview I have taken from an event planner to make an idea about their sales and profits. According to that business owner, a medium size of event company makes around 10,00,000 profit each year. So I have assumed that the system will increase the sale 5% the first year, 7% in second and 10% in the third year. To calculate the savings benefit I have deducted the cost of the new system from the total cost of the old system. Providing the calculation below.

$$3,85,000 - 3,26,200 = 58800 ,$$

$$3,85,000 - 1,27,700 = 257300,$$

$$3,85,000 - 1,28,900 = 256100$$

To calculate the QR code feature, advertising, and vendor commission benefit, the business owner guided me to assume the probable amount of profit for three years.

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