ORGANIZING EVENT UBIQUITOUS WITH A PROPOSED EVENT MOBILE APPLICATION IN BAHRA\n
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ABSTRACT
This part is a summary of the whole project, containing all the parts included in the report and how they were done, to aim of the abstract is to give the reader a short brief of the entire project. The paper is about a mobile application called Connect.BH the application report contains all the details about it. The objective of the app is to connect people together a make it easier for them to view all the events in Bahrain. The theoretical background was taken from different articles that share the same topics, the analysis of the current system and limitation was done by observing the current system. After observing the current system, we added new features to this application that are not available in the current applications. In this paper you will see details of the project how it was planned containing the feasibility study, (technical, operational, legal, economic). Agile methodology was used to implement this application. All the functional and non-functional requirements are shown in the report as well as the system requirements. In the report there is a figure of the use case diagram, both the admin and users use case diagram. The use case diagrams were created using Clearly, in the implementation part there are figures of the pages of the application. In the last part you will see the conclusion and recommendations and the future works of the application.

Key words: Mobile Application, Event, Bahrain, M-Event
1. INTRODUCTION

Mobile marketing is a digital marketing strategy used to reach users on their smart phones it is the trend of marketing these days, nowadays most of the people have smartphones and use it most of the time smartphones are very advanced now everything can be done on a phone such as checking emails, visiting websites, using mobile apps, social media, using google maps for directions and much more (Salameh & Hassan, 2015). Mobile marketing can be done through reaching your audience by emails, websites ads, mobile applications and social media. More than 80% the internet users are through mobile phones, based on google the people using their search engines are mostly mobile users. Organizations that are not building their mobile marketing skills and focusing on it are already falling behind (Marrs, 2019).

Smartphones has a huge impact on the society today, based on a recent survey the number of smartphones users are increasing in a very high pace (Abu-AlSondos & Salameh, 2020). Internet users rarely uses they’re laptops and desktops anymore, people use their mobile phones to do most of their jobs from reading the news, articles, books, track their health goals, reminders, write notes etc. it can all be done using a smartphone and there a lot applications that support the user needs. this devices have a huge impact on society because it made it easier for users to communicate with each other, users have various options in learning, it updates users to the latest things in the market, easy ways to use applications, more business ideas and opportunities, smartphones have a large health, social, education and business impact on the society (www.keyideasinfotech.com).

Mobile computing connects smartphone users to the internet to get data and information anytime and anywhere, users can send and receive data, videos, messages, photos and voice notes through a network using a smartphone. Mobile computing gives users better connection to internet at all times and anyplace, it helps users engage with other users on the internet, increases productivity and saves time. (Bucki, 2019)

Mobile application is also known as APP, it is a software application that works on a smartphone. Mobile apps are designed to give users services that were available on PC’s and even more. APP are small software’s with limited functions, it got famous by Apple company through their APP store. Today there are millions of different applications and they are the new trend which took over websites, users can choose the APP they need and install them on their smartphones. Some mobile applications have a huge impact on the society such as Instagram, snapchat, twitter, google maps and whatsapp. Successful mobile app companies have made billions of dollars through these applications, anyone with a great idea can create an app and make a huge profit out of it (www.techopedia.com).

Networking is the transfer of ideas and information between people who share the same interests it is used by people to grow their circle, increase their knowledge in their fields, be up to date about the latest trends and news of their interests. Networking connects like-minded people together through conferences, events, chats and exhibitions. It demonstrates, based on a large number of studies, that networking gives more business opportunities, increases innovation, recognizes people with similar interests and shares knowledge more (Kagan, 2019 :Ali, Omar, & Bakar, 2016).

Events are an occasion that takes place to gather people of same interest together, it might be a social or public event. There are different types of events business, sports, hobbies,
cultural, learning and many more events. Events are the new trend now many organizations do event marketing to advertise their product and services, it has a lot of benefits, increases number of sales, more people will be aware of their product and services and creates better relationship’s. (McCabe, 2018)

Hobby is an activity that a person loves doing for fun or pleasure, people usually do this type of activities in their free time or extra time to increase their performance in their hobbies, enjoy their time and lower stress. They are many types of hobbies and they can be outdoor and indoor. Hobbies have good benefits and large impact on the quality of life. Hobbies increase work performance, people who have hobbies and pursue them have a better job opportunity over those who don’t have hobbies. People can change their hobbies into a business that generates profit while enjoying their work.

1.1. Research Problem
In the Kingdom of Bahrain there are many locals and foreigners that have hobbies and interests, but do not know where to meet people who share the same hobbies or they don’t know if there is any events or festivals that are related to their interests. There are many events that take place here in Bahrain that people don’t know about or they might know too late after the event has finished. they might also have some questions but don’t know people of the same interests so they can ask and share these questions and ideas. There is a lack of communication between like-minded people. There are people in Bahrain that would love to try new hobbies but don’t know how to start or where to start.

Many people these days don’t have activities to do or they have hobbies, their only fun activity is watching TV or browsing through social media. One of the reasons causing this is that they cannot find like-minded people to interact with them (academia, 2020, April 14).

There are websites in the kingdom of Bahrain that share some details about upcoming events and festivals but not all types of events, each web sites focuses on different type of events and festivals. There is no website or mobile application that focuses on all types of events that take place in Bahrain, or have chat form for people to communicate. When tourists visit Bahrain, they don’t know about all the events in Bahrain and their locations.

1.2. Research Objective
- To develop a mobile application that posts about all types of events in Bahrain.
- To connect people of same interests together and update them about upcoming events.
- To update tourists about the events and festivals in Bahrain.

1.3. Research Scope
A mobile application in the Kingdom of Bahrain to support all types of events.

1.4. Research Significance
It is important to have a Mobile application that share post and details about all upcoming events, websites are getting old in today’s environments mobile applications are the new trend and it is easier to use and keep people updated about new events. By sharing about upcoming events, it will satisfy both sides the company in charge of the event and the visitors, the company in charge will be satisfied by more customer and the customer will enjoy their time.

Spending time with other like-minded people increases personal motivation, better self-esteem, lowers stress, better valued self. People that connect with others that are like-minded feel mentally and emotionally better, they will live a healthier life. (bennett, 2018)
Gathering people of the same interest’s is important whether it is by events or gatherings, it will increase their knowledge in their interests by sharing information with others (Abu-AlSondos, Pangil, & Othman, 2015; Salameh & Zamil, 2020), people will have better network relations by connecting with other people, they will also be able to ask any questions that they might be concerned about.

Tourist that visit Bahrain don’t always know about the events and festivals in Bahrain, they usually visit shopping malls, restaurants or coffee shops but in this case they might not enjoy their time but they not seeing anything new, by keeping them updated about events they will visit these events of their interest and enjoy their time and the most important thing is when the go back to their country they will tell their friends and families about how they enjoyed their time and they might like the idea and visit Bahrain. The more the number of tourists increase in Bahrain the economy gets better.

2. LITERATURE REVIEW
2.1. Theoretical Background
2.1.1. Networking
Networking refers to the transfer of ideas and information between groups of people who share similar interests. The internet of things was already defined as the interconnectedness of devices using smart sensors, which leads to the intricate creation of a networking system. According to a report from the IEEE Communications Magazine, the internet of things can lead to an increase in demand for networking since it entails data analytics and security. The authors of the report, found that the IOT cannot work without the network to support its primary functions. According to the same report, the Internet of Things entails data gathering, and heavy reliance on the networking industry to evaluate the implications (Kalkan and Zeadally 2017).

2.1.2. Events
Events are described as occasions which attract people of the same interests. An event can either be social or public, and attracts people from different walks of life. Events are important to many organizations since those in attendance can increase the sales of a particular product or service. According to a report by Suma et al. (2017), the internet of things has enormous impact on logistics and execution of events. According to the research, the IOT has a huge potential in shaping event planning and organization. The study suggests that in the modern world, the IoT has eliminated manual registration for events. Instead, everything has changed with the emergence of new technology from mobile events app to events software. The study further suggests that event planners have incorporated unique ways to engage with attendees of the events through the use of smooth and efficient ways. The authors suggest that the IOT has played a vital role in revolutionizing the industry where attendees use cashless payments and confirm their check-ins using their smart gadgets.

2.1.3. Hobbies
A simple definition of hobby from the oxford dictionary is that it is an activity that a person engages in for fun or pleasure. Hobbies are often done at free time hence tend to have a higher degree of fulfillment and satisfaction. Those who frequently engage in their hobbies frequently might end up sharpening their skills and reaping significant financial benefits. The internet of things tends to have a significant impact on hobbies. A study by Thierer and Castillo (2015) projected the growth and economic impact of the internet of things, finding out that there is a strong relationship between IOT and hobbies. Advances in technology have led to the invention of smart gadgets, software, and programs. The main issues at the forefront are the movement towards adaptive investment and the adoption of e-technologies in the
sector (Ali, Omar, & Bakar, 2016; Ali, Bakar, & Omar, 2016). These inventions cannot be considered accidental since it involved critical thinking of the inventors. It can be asserted that the inventors of these breakthrough technologies started the trend as their hobby, before they materialized and become significant innovations. The internet of things enhances hobbies since it makes people think critically to come up with the breakthrough inventions. The emergence of IP-enabled devices can be attributed to hobbies in individuals. From the study, all an individual is required to do is to possess some skills and mastery of the basics of computer networking.

2.1.4. Smartphones

Smartphones are one of the world's emerging technologies whose efficiency has been aided by the Internet of Things. Since the beginning of the new millennium, the world has experienced an increase in smartphone use. In today’s domestic setting, a smartphone is a basic electronic used for various reasons among them communicating and browsing once connected to the internet. These smartphones tend to have sensors that remotely transmit data to the complex system of network. In this regard, it can be asserted that the Internet of Things plays an important role in shaping smartphone technology. According to a study by Lane et al. (2015), smartphone gathers data about the user and interacts with other devices in the same network and can be used to give geolocation, health conditions, temperature condition, and much more. Smartphones have also led to the emergence of modern technologies such as Bluetooth, wireless networks, 3G, 4G, and 5G. Given these overwhelming benefits of smartphones, the authors consider them the ultimate drive for IOT.

2.1.5. Mobile Computing

Mobile computing is a prominent research area owing to its impact on the internet of things. According to Corcoran and Datta (2016) the internet of things has had a significant impact on mobile computing, giving rise to wireless communication systems that enable users to transmit data in local or vast areas. One finding from the study is that the internet of things has affected some elements of mobile computing, such as satellite communication systems, wireless local area networks, wireless bridges, and wireless cellular systems. It is the same concept of mobile computing that has led to the invention of wireless technologies that allow users to transmit data communication using internet terminals (Salameh, Ahmad, Zulhumadi, & Abubakar, 2018).

2.1.6. Mobile Marketing

A study examined the impact of the internet of things on mobile marketing. According to the study, the internet of things has disrupted the way people engage with brands (Alkafagi, Salameh, & Abu-AlSondos, 2019). This element has been shaped by the availability of mobile devices, which makes individuals access information easily through their small mobile screens. According to statistics from Google, 80% of internet users own a smartphone, which implies that mobile marketing has a great potential to improve the brand’s visibility to the audience. Since the world is currently in an era of cellular proliferation, marketers should capitalize on this concept and implement some of the best mobile marketing strategies (Riggins and Wamba, 2015).

2.1.7. Mobile Application

A study, found that mobile apps have a direct impact on the internet of things. The study defined a mobile app as a type of software designed to run on smart gadgets and serves the interest of users. According to the authors, mobile apps are using the internet of things since IOT collects information, receives information, and customizes the content to the target audience. Mobile applications have taken advantage of all these benefits of the Internet of Things. There is an increasing number of mobile phone users across the globe, which implies
an increase in interconnectivity. The interconnectivity has facilitated the growth in remote control of smart gadgets, which relies on the IOT framework (Riggins and Wamba, 2015).

2.2. Analysis and Limitations of Existing System

2.2.1. Dubai Calendar Application
Dubai calendar app is a mobile application created in December 2016 by the department of tourism and commerce marketing, approximately 280,000 have downloaded the application since it was created, the number of downloads is increasing steadily. Their analysis show that the majority of users are UAE residents, their marketing strategies are headed to people living in Dubai. There are nearly 150 events posted on the application, weekly 35 new events are added. The application is one of Dubai “smart city” plans. The application was developed in a way that can be easily used, the app was created based on customers demand, it gave users a great online experience. It is a one stop application users don’t have to go through couple of websites, they can see all the events in Dubai and book their tickets through the application. Users can share offers on tickets and details of events with their friends. The app was awarded as the best M-commerce service by the last Hamdan Bin Mohammed smart government awards. One of the success factors of the app is that people can buy tickets of exclusive events in Dubai through the app with special rates and discounted prices. Large concerts and events tickets were sold through the app such as Tomorrowland and Justin Bieber concert. They are looking forward to increase the innovation and give their users a better experience always (Debusmann, 2017: Ali, Omar, & Bakar, 2016).

Dubai calendar app is a great application that is successful and helped users get rid of browsing through different websites to know about events in Dubai, but there some limitations in the app such as they only focus on large and exclusive events that are organized by large organizations, the application doesn’t support events and gatherings for small group of people based on interests or hobbies. The application doesn’t have a live form or chat for users to chat or connect with people the share the same hobbies or like-minded people.

2.2.2. Bahrain Calendar Application
Bahrain calendar application is one of the best event marketing applications in Bahrain, but the application has many limitations, the app only focuses on events that are done by large organizations, they don’t focus on connecting small groups of people who are like-minded and share the same hobbies, users cannot add any suggestions or request through the application, they cannot ask questions, the app doesn’t have a feature to buy tickets online for the events.

2.3. Need for New System
The new application is a good idea because it will be a one stop application, it will connect people of same interests, it will keep them updated about all upcoming events. After analyzing and look deep into the limitations of the current applications available, the new application will have all the success factors of the current applications as well all the weakness and limitations will be fixed and new features will be added in the new application that were not available in the current applications.

The new application will have some unique features which are not available in other applications of its kind. It will not only support events that are organized by large organizations whereas it will also support small events or gatherings that are organized by small group of people who share the same interests or hobbies and are like-minded. The application will have a live chat form so that users can ask questions and the people of same interests and other users can answer these questions by sharing their experience and knowledge, through the live chat users can also plan, organize and create events or gatherings
with other users. The application will be like a community for users in which they will meet like-minded people online and face-to-face. When users plan, organize and create an event or gathering they can choose if they want it to be public for everyone or private only for the users they invite. Users can send private text messages to other users so they can communicate privately.

3. RESEARCH METHODOLOGY

3.1. Project Planning

Project planning is one of the most important stages in project management, the output you get from project planning is the project management plan. It is usually presented in a form of Gantt Chart to make it easier to understand. A project plan should not be complicated, it should be simple for the project team to understand by Brett Harned. “Every project tells a story about its goals, team, timing, and deliverable.”

3.1. Feasibility Study

Feasibility study is important for a project, it is the foundation of the project, if the feasibility study does not support the project, then you don’t have a project. Feasibility study is an assessment of the plan or method. The people, tools, time and resources needed to complete the project are all included in the feasibility study. It should be done during the project life cycle in the planning stage. It includes the factors that will help the project succeed. The study answers what, when and why the project is done (Bridges, 2019).

3.1.1. Technical Feasibility

For this project the technical requirements are smartphone or tablets as hardware, mobile application as a software and internet connection so that user can connect to the application through their smartphone or tablets.

Software

APPY PIE: to build this application Appy Pie mobile application builder will be used, it is a platform to build mobile apps that are cloud based, it is simple and doesn’t require technical experts. Mobile applications can be created without coding and programming skills. In our mobile computing course in ASU university we were taught how to use Appy Pie.

Mobile Operating System:

<table>
<thead>
<tr>
<th>MOBILE OPERATING SYSTEM</th>
<th>TECHNICAL REQUIREMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>IOS</td>
<td>IPhone 5s devices and later with iOS 11+</td>
</tr>
<tr>
<td>ANDROID</td>
<td>Android devices with Android 7+</td>
</tr>
</tbody>
</table>

Hardware

<table>
<thead>
<tr>
<th>HARDWARE REQUIREMENTS</th>
<th>SMARTPHONE OR TABLET</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROCESSOR</td>
<td>Minimum 1 GHz; Recommended 2GHz or more. a wireless adapter (Wi-Fi)</td>
</tr>
<tr>
<td>INTERNET CONNECTION</td>
<td>Minimum 32 GB; Recommended 64 GB or more.</td>
</tr>
<tr>
<td>HARD DRIVE</td>
<td>Minimum 1 GB; Recommended 4 GB or above.</td>
</tr>
<tr>
<td>MEMORY (RAM)</td>
<td>Speakers, require a camera and microphone</td>
</tr>
<tr>
<td>OTHER</td>
<td></td>
</tr>
</tbody>
</table>

Table 1 Mobile Operating System

Table 2 Hardware Requirements
3.1.2. Economic Feasibility
This particular project does not cost a lot because the mobile application will be developed using Appy Pie app builder which is very simple and does not require technical experts, but it has a lot of benefits it will support large, medium and small events, it will connect people that are like-minded and increase their creativity, it will allow user create their own gatherings and events by posting about them in the application. It will allow users to find and join new hobbies and much more.

3.1.3. Operational Feasibility
The application will be used by different users from different ages and cultures. The application will be accepted by the users since it will be very simple and easy to use because minimum number of clicks will be required, there will be different languages such as Arabic and English so that all users understand. The application will be implemented by using they system development life cycle phases. No training is required for users because it is very simple and straight forward. This mobile application will help users by connecting them with like-minded people and keep them updated about all the happenings in Bahrain.

3.1.4. Legal Feasibility
Analysis about rules and regulations related to the project. It helps to figure out if there are any legal requirements for the project such as data protection, social media laws, etc (Gupta, 2018)

3.1.5. Scheduling Feasibility
This step shows whether the project can be ready on time and if the time given is realistic or no. time is important for mobile application projects because if you are late there might be other people that might implement a similar application before you (Favell, 2016).

Scheduling feasibility is important for project success because project will fail if not completed on time, after this step the time duration to complete the project is decided (Gupta, 2018).

3.2. Software Development Methodology
To overcome the difficulties that might be faced during the process of implementing an information system, the project team should choose a specific methodological approach, system development methodology is steps that are used to form, plan and control the project (NGBAGARO, 2016).

Agile methodology is a flexible step by step software development methodology. Agile application development helps organize designing and planning method, development and testing methods during the development the software lifecycle (Marina Ch., 2017).

3.2.1. Phases of Software Development Methodology

Figure 1 SDLC Phases
3.3. Analysis of the New System

3.3.1. User Requirement (functional and Non-functional Requirements)

*Functional Requirements*

Functional requirements are something that is mandatory in the system, something the system should do. These requirements should be clear to the development team and stakeholders. It describes what the system does (Dave, 2019).

<table>
<thead>
<tr>
<th>Table 3 Functional Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>FUNCTIONAL REQUIREMENTS</strong></td>
</tr>
<tr>
<td>1. The user should be able to sign up and log in the application</td>
</tr>
<tr>
<td>2. All users should follow the application rules and policy</td>
</tr>
<tr>
<td>3. Users should be able to see all upcoming events</td>
</tr>
<tr>
<td>4. Users can create their own gathering or event</td>
</tr>
<tr>
<td>5. Users can choose if they want the gathering or event to be private</td>
</tr>
<tr>
<td>6. Users should be able to buy event tickets online</td>
</tr>
<tr>
<td>7. There should be a navigation table to navigate the user through the app</td>
</tr>
<tr>
<td>8. There should be a live chat for each hobby so that like-minded people communicate together</td>
</tr>
<tr>
<td>9. Users can share location of the events and gathering</td>
</tr>
<tr>
<td>10. Users can share their suggestions and request</td>
</tr>
<tr>
<td>11. Users can see their purchase history</td>
</tr>
<tr>
<td>12. The app will show users events based on their interest</td>
</tr>
<tr>
<td>13. There should be a search process to make it easier for users</td>
</tr>
<tr>
<td>14. The app should be streamlined so that users can see trending events</td>
</tr>
<tr>
<td>15. Users should be able to share events with other users</td>
</tr>
<tr>
<td>16. Users should be able to send other users private messages</td>
</tr>
<tr>
<td>17. Users can follow other users</td>
</tr>
<tr>
<td>18. Users can add events to their favorite list</td>
</tr>
<tr>
<td>19. Users are able to contact the app management team</td>
</tr>
<tr>
<td>20. Users can choose language either Arabic or English</td>
</tr>
<tr>
<td>21. Users can choose if they want the app to send them notifications</td>
</tr>
<tr>
<td>22. Users should be able to write any review about events</td>
</tr>
<tr>
<td>23. Users can rate the events and gatherings</td>
</tr>
<tr>
<td>24. User can install the app on android and iphone</td>
</tr>
<tr>
<td>25. Users can post picture and videos</td>
</tr>
<tr>
<td>26. Users can send voice notes in the live chats and private messages</td>
</tr>
</tbody>
</table>
Non-Functional Requirements

Non-functional requirements are those that are not mandatory, it is a quality attribute, helps you to verify the performance of the software. It is the way the software behaves, without the non-functional requirement the app will not be reliable and it will be in complete (Vishwas Ng, 2019).

<table>
<thead>
<tr>
<th>Table 4 Non-functional Requirements</th>
<th>NON-FUNCTIONAL REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Performance</td>
<td>Speed of the system to perform each task, determined by its responsive time.</td>
</tr>
<tr>
<td>2 Scalability</td>
<td>To handle more data with times progression and handle increased usage.</td>
</tr>
<tr>
<td>3 Responsiveness</td>
<td>Responsive to any input by user or an external interrupt and return back to the same state it was left as.</td>
</tr>
<tr>
<td>4 Use-ability</td>
<td>Easy use and user friendly without any given manuals.</td>
</tr>
<tr>
<td>5 Reliability</td>
<td>The app should be reliable.</td>
</tr>
<tr>
<td>6 Security</td>
<td>The apps data should be protected, secured, and encrypted with minimum needs from the internal and external attacks.</td>
</tr>
<tr>
<td>7 Availability</td>
<td>The app should be available on a common platform for users to install, find updates, and give feedback.</td>
</tr>
</tbody>
</table>

(Vishwas Ng, 2019)

3.3.2. System Requirements

System requirement is the specification of hardware and software to run the application smoothly, if these requirements are not available user will have installation and performance problem (www.techopedia.com).

<table>
<thead>
<tr>
<th>Table 5 System Requirement</th>
<th>SYSTEM REQUIREMENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEVICES OPERATING SYSTEM</td>
<td>Android devices with Android 7+ or IPhone 5s devices and later with iOS 11+</td>
</tr>
<tr>
<td>SIZE</td>
<td>iOS</td>
</tr>
<tr>
<td>INTERNET CONNECTION</td>
<td>Android</td>
</tr>
<tr>
<td></td>
<td>Minimum 32 GB; Recommended 64 GB or more.</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
</tr>
</tbody>
</table>

3.3.3. Domain Requirements

Domain requirements means the environment in which the application will operate. When developing an application, it is important to have clear domain requirements because they reflect the standard of the user. These requirements are the standards that the users are familiar with, if the domain requirements are not clear the application will not satisfy the users (Kundariya, 2019).

This application will be used by people who are willing to get socialized join events and join gatherings with like-minded people, people who are willing try new hobbies. The application users will be people from different categories, different ages, different cultures etc. the application will be used in the kingdom of Bahrain by locals and foreigners.

- Fast & reliable
- Available 24/7
- Easy access
- No bias
- English and Arabic language
- Easy to use
4. SOFTWARE DESIGN AND IMPLEMENTATION

4.1. Use Case Diagram

A use case diagram captures the functional aspects of a system. More specifically, it captures the business processes carried out in the system. As you discuss the functionality and processes of the system, you discover significant characteristics of the system that you model in the use case diagram. Due to the simplicity of use case diagrams, and more importantly, because they are shorn of all technical jargon, use case diagrams are a great storyboard tool for user meetings. Use case diagrams have another important use. Use case diagrams define the requirements of the system being modeled and hence are used to write test scripts for the modeled system (chitnis, 2020).

![Use Case Diagram](image)

**Figure 2** Use Case Diagram

4.1.1. User Use Case

<table>
<thead>
<tr>
<th>EVENT</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIGN-IN &amp; LOGIN</td>
<td>User can sign-In and login through the application</td>
</tr>
<tr>
<td>VIEW EVENTS</td>
<td>User can view all events available in the application</td>
</tr>
<tr>
<td>ADD EVENT</td>
<td>User can add and create their own event</td>
</tr>
<tr>
<td>JOIN LIVE CHAT</td>
<td>User can join live chat to communicate with like-minded people</td>
</tr>
<tr>
<td>ADD PICTURES &amp; VIDEOS</td>
<td>Pictures and videos can be added by users</td>
</tr>
<tr>
<td>SHARE EVENT LOCATION</td>
<td>User can share and open locations of the events</td>
</tr>
<tr>
<td>ADD SUGGESTIONS &amp; REQUESTS</td>
<td>User can send suggestions and requests to the app management team, so they can upgrade the features</td>
</tr>
</tbody>
</table>

**Table 6** User Event Description
ADD REVIEWS & RATINGS | Users can add reviews and ratings to all events, other users can see the ratings and reviews.
ADD FRIEND | Users can add their friends who are using the same app
SHARE EVENT | Users can share the event with their friends through direct messages
JOIN GROUPS | Users can join groups based on their interests to join like-minded people
BUY TICKETS | Users can buy event tickets online
VIEW PURCHASE HISTORY | After buying tickets online users can view their purchase history anytime

4.1.2 Admin Use Case

Table 7 Admin Event Description

<table>
<thead>
<tr>
<th>EVENT</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIGN-IN &amp; LOGIN</td>
<td>Admin should sign-in &amp; login.</td>
</tr>
<tr>
<td>VIEW EVENTS</td>
<td>Admin should be able to view all the events.</td>
</tr>
<tr>
<td>ADD EVENTS</td>
<td>Admin can also add an event.</td>
</tr>
<tr>
<td>JOIN LIVE CHAT</td>
<td>Admin can join the live to see if the chat is appropriate.</td>
</tr>
<tr>
<td>ADD PICTURE &amp; VIDEOS</td>
<td>Admin can add pictures &amp; videos.</td>
</tr>
<tr>
<td>SHARE EVENT LOCATION</td>
<td>Location of events can be shared by the app admin too.</td>
</tr>
<tr>
<td>VIEW SUGGESTIONS &amp; REQUESTS</td>
<td>Admin can view the suggestions and requests of the user to be able to response to them.</td>
</tr>
<tr>
<td>VIEW REVIEWS &amp; RATINGS</td>
<td>Admin can view reviews and ratings of the users and it could be used to show other users events that are trending.</td>
</tr>
<tr>
<td>VIEW PURCHASE HISTORY</td>
<td>Admin can view users purchase history to be able to advertise similar events to the same user.</td>
</tr>
<tr>
<td>BLOCK USER</td>
<td>Admin can block any user that is not obeying the rules.</td>
</tr>
<tr>
<td>DELETE CHAT</td>
<td>Admin can delete any inappropriate chat.</td>
</tr>
<tr>
<td>DELETE EVENT</td>
<td>Admin can delete any event if there is a reason.</td>
</tr>
</tbody>
</table>

4.2. Implementation

The purpose of the implementation process is to design and create (or fabricate) a system element conforming to that element’s design properties and/or requirements. The element is constructed employing appropriate technologies and industry practices. This process bridges the system definition processes and the integration process (Snoderly & Faisandier, 2019).

In this project the implementation phase shows the design of the mobile application and how will the user interface look like, the user interface of the mobile application is shown below in screenshot form, it is exactly how the mobile application will look like when installed on a mobile phone. The screenshots below where done using Photoshop, the design was created based on the user requirements to make sure that all the features are available and shown.

The screenshots below are:
- Login page
- home page
- categories page
4.2.1. Login Page
In the login page the user sign up to create an account for the this particular mobile application to be able to use the mobile application as a user, or the user can login with his Facebook account, the user can also login using his email address. When the user sings up he should agree on the application terms of services, privacy policy, guest refund policy and host guarantee terms.

![Login Page](connect.png)

Figure 3 Login Page

4.2.2. Home Page
This the home page of the mobile app it is the first page that will appear after the user logs in, in the home page the user can view all the events and the will all be streamlined. Through the home page the use can use the search button to insert the name and it will navigate him directly to the event he is wishing to view. The user can also choose to filter the sort of the events depending on his/her need for example new to old, trending or age group etc. the use user can also use the navigation bar show in the home page.

![Home Page](connect.png)

Figure 4 Home Page
4.2.3. Categories Page
The user can use the categories page to view the different types of categories available in the mobile application, the user can use the search button to lead him directly to the category he/she wants. The user can also use the filtering button to sort the form of categories for example alphabetical, recently viewed or most popular etc. Once the user clicks on a category the app will take him to a page that shows all the events and gatherings in the category, the user can also join live chats of each category after selecting the category. There is a button at the top left of the category page if the user clicks it it will take him back to the home page.

![Categories Page](image)

Figure 5 Categories Page

4.2.4. Event Description
The event description in the application is shown to the user after he/she clicks and chooses the event they are interested in, the event description page contains details about the event such as a short paragraph that contains details about the event, pictures and videos of the event, date and timings of the event or gathering, location of the event (event address), contact number of the event organizer and email address. The user can also join the event by clicking on the button at the bottom left of the page, the middle button at the bottom of the page shows the location of the event on Google Maps, the right button at the bottom of the page allows the users to join live chat to communicate with other users that have joined the event too.

![Event Description](image)

Figure 6 Event Description
4.2.5. Live Chat Page
In the live chat page the user can chat with other user that share the same interest, users can share photos and videos among eachother by clicking on the top left square button to share photos and videos from their gallery, the camera button at the top right of the page allows the user to acces his phone camera to take live photos and videos, users can choose if the want to chat publicly with everyone or privatley with some specific users, user can sed voice notes by clicking on the blue circle at the bottom, user can also share location in the live chat by clicking on the location symbol, emojis can be shared in the live chat to by clicking the emoji symbol. The circle a the bottom of the page with users photos shows the users that are active in the live chat (online).

Figure 7 Live Chat Page

4.2.6. Contact Us Page
The contact us page is use by users to contact the admin users of the mobile application. Users can share their feedbacks about the application, they can share their suggestions about the application, requests about the application can be shared through the contact us page by the users and they can ask questions about the app through this page.

Figure 8 Contact Us Page
After the users send their message the admin users will view the message and help them by updating the system, or helping them with their request, or answering their questions, or even taking their feedback into consideration. In order for the message to be sent by the user he/she should fill all the mandatory areas which are full name of the user, user email address, user phone number, subject of the message, and fill in the enquiry box with the message he/she wishes to send.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1. Conclusion

Since the kingdom of Bahrain is focusing on creating more events in the country to entertain the people living in Bahrain and attract tourists from outside the kingdom which will boost the country’s economy. This mobile application will help users see all the events taking place in Bahrain easily and not only that it will allow users to create their own events and gatherings.

Connect.BH application will allow users to join people that are like-minded and chat together and plan for events or gatherings, this will increase their creativity. Through the app users can join different hobbies, connect with new people and learn about new hobbies. The app is useful for those who have hobbies and it is also useful for those who like to do new things, learn about new hobbies and it might give them a chance to find their new hobbies.

5.2. Recommendations and Future Work

Connect.BH is recommended for all types of users from different age group since the application covers different type of events and gatherings. Organizations that create their own events are recommended to use the application since it will make it easier for them to advertise their events, or to know about the events and join them, they are also able to create their own events and post them in the application.

However, this application is recommended for those who have hobbies and would like to share them and introduce other people to join their hobbies or join people who share the same hobbies, this application will help them increase their creativity, knowledge and network. I would recommend foreigners that live in Bahrain that have hobbies but don’t know where to meet people who share the same hobbies to use this APP it will be very useful for them. This application would be useful for those who have free time but don’t have hobbies to spend this extra time by using the application they join different hobbies until they discover their interests.

Future work:

- Add restaurants to the application
- Support Bahrain tourism in different ways
- Create the same app for different countries in the GCC

REFERENCES


[27] https://www.bahrainthismonth.com/


