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SECD2523-03 (DATABASE)

Section - 03

GROUP CAPYBARA

PROJECT PHASE 2

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1.0 Introduction

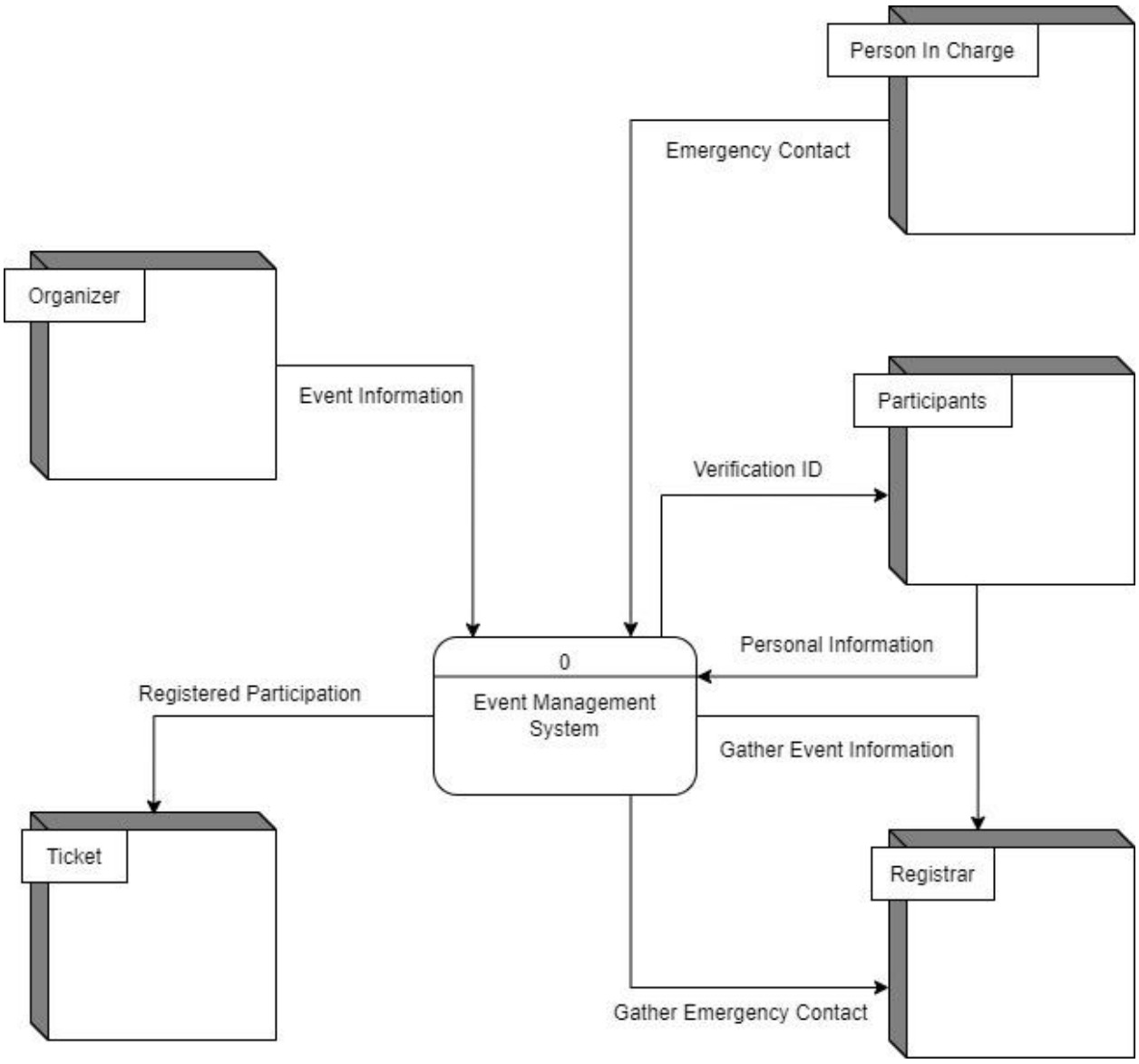
Nexscholar is a basic social platform that facilitates connections among students and clients. Some may say that Nexscholar is similar to social media giants like Facebook, Twitter, and Instagram due to its similar features. The current social media landscape faces criticism for its misuse among university students and spreading hate and anger. Nexscholar aims to harness the positive aspects of social media while incorporating an interactive learning approach. Becoming a social media platform is one of Nexscholar's primary objectives.

Besides that, the website features are divided into several categories, including post-graduate, undergraduate, researcher, and job search, each tailored to the specific needs of its users. Certain features may be unique to one another as all of them have different requirements from users.

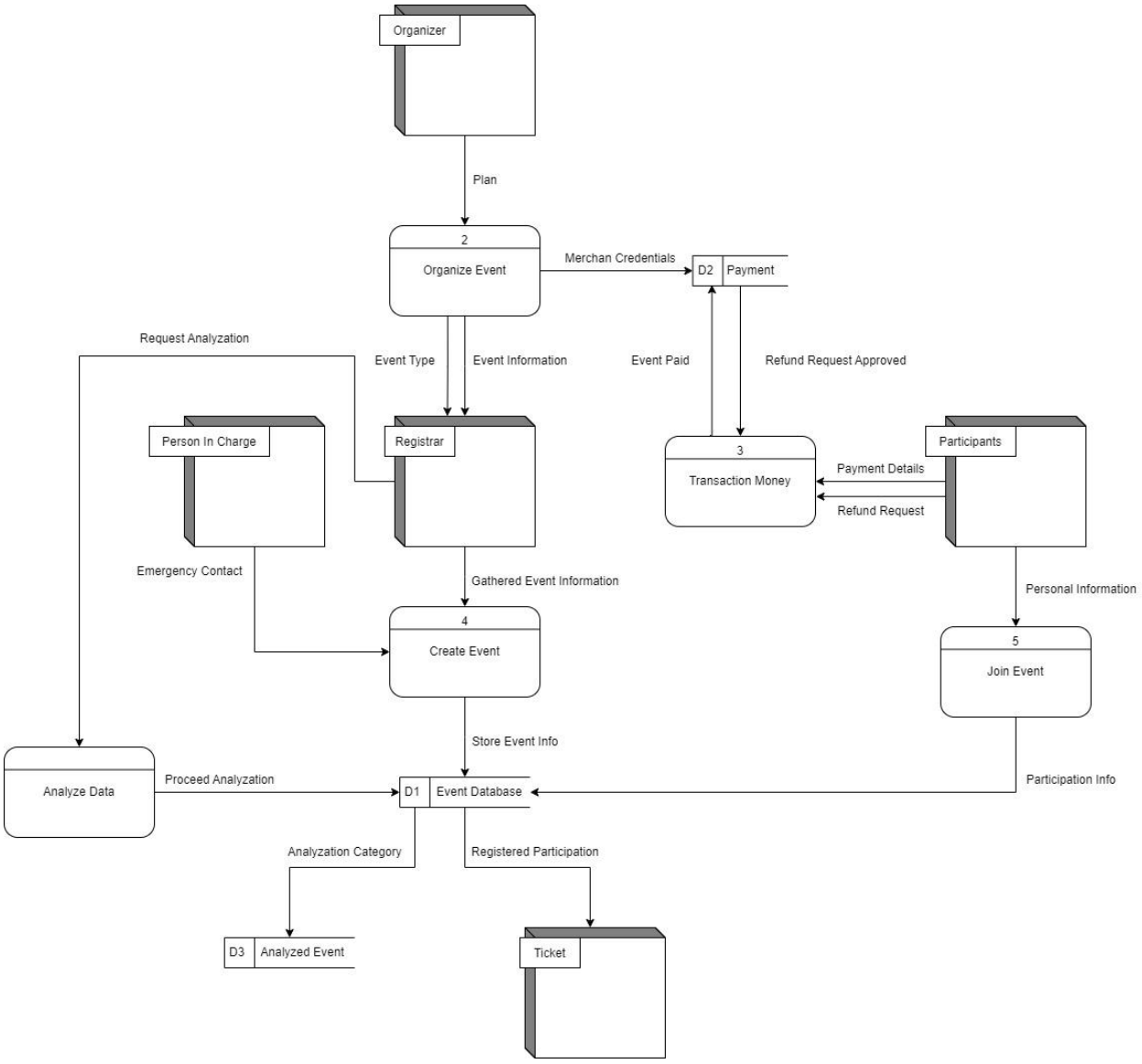
Nexscholar aspires to be an all-in-one hub for students and lecturers to connect, share ideas, and engage in learning activities. The platform seeks to reduce the barriers between students and lecturers, cultivating inspiring and engaging interaction.

Despite its noble goals, Nexscholar faces challenges and is far from being a perfect website. As mentioned, it is a newborn website focusing on fundamental functionality without offering many advanced features. This report aims to address the issues Nexscholar is facing, particularly in event management, and propose efficient solutions to help it contrive into a better future.

2.0 DFD (to-be) Zero



2.1 DFD (to-be) & Context



3.1 Proposed Business Rule

1. The system is working almost 23 hours nonstop
2. Maintenance can be done every 3 am until 4 am
3. Organizers need to contact the Registrar to publish an event
4. The registrar must receive complete event information, including Person In Charge (PIC)
5. Paid event will be included with merchant details that is encrypted
6. Participants will need to register themselves on the website before participating in any event
7. Participants' payment towards the organizer merchant will be recorded
8. Every registered participant will be included with a verification ID
9. Each participant will have a calendar interface that shows the upcoming events that they joined

10. All events can be analyzed

3.2 Proposed data & transactional

Proposed data:

Registrar:
The Registrar Class is equipped with key attributes, notably the RegistrarID, which functions as a unique Primary Key identifier for registrars within the system. Additionally, the class includes Full Name, representing the complete name of the registrar, Telephone Number, and Email Address for contact purposes, and IC-Number, denoting the identification number of the registrar. RegistrarID acts as a key, ensuring the distinct identification of each registrar within the system. For example, a registrar with a specific RegistrarID will have corresponding information such as Full Name, Telephone Number, Email Address, and IC-Number stored in the system.

Event:
The Event Class incorporates crucial attributes, including Event ID, serving as a Primary Key identifier for each event, ensuring each event is distinctly identified within the system, Name representing the title of the event, Location indicating the venue where the event takes place, Capacity denoting the maximum number of attendees allowed, Time specifying the date and time of the event, Organization revealing the hosting entity of the event, Event Type categorizing the nature of the event, and Person In Charge (PIC) identifying the designated individual responsible for overseeing the event.

Merchant (Encrypted):
The Merchant Class introduces key attributes crucial for secure and confidential management, such as the Merchant ID, acting as a Primary Key and Foreign Key references to Event(Event ID) identifier for each merchant participating in different events, guaranteeing each merchant's distinct identification within the system. The class also incorporates a vital feature, Encrypted Banking Information, ensuring a high level of security for storing sensitive financial data related to various events.

Calendar:
The Calendar Class encompasses essential attributes, with the CalendarID serving as a Primary Key and Foreign Key references to the Event(Event ID) identifier for each user within the calendar system, and the class features an Event ID, acting as a unique identifier that links the calendar entry to a specific event. One notable functionality is the Event ReminderFeedback, which reminds and informs the user about the date and countdown of the associated event.

Analyzation:
This class is equipped with AnalyzeID as the Primary Key. Apart from that, there is also an attribute known as AnalyzeType, which shows the type of analysis being done on an event.

Organizer:

Organizer Class has OrganizerID as the Primary Key that serves as a unique identifier, and it comes with OrgName, which is used to identify the organization name. Apart from that, two multi-valued attributes are known as OrgEmailAdress and OrgTelPhone. Each of these multi-valued attributes can be inserted up to 3 values. OrgEmailAdress is used to get the organization's email, while phone numbers are used to get the organization's phone number.

Participants:
In the "Participants" class, each participant is uniquely identified by a ParticipantsID as the Primary Key. The class includes attributes such as ParFullName for the full name, ParEmailAddress for the email address, ParTelPhone for the telephone number, and ParIC for the identification number. This class structure is designed to store and manage information about individuals participating in a given context or program.

Payment:

In the "Payment" class, each payment transaction is distinguished by a PaymentID as the Primary Key. The class encompasses the BankDetails attribute, which includes information related to the payment's banking details. This class is designed to manage and store data relevant to financial transactions and their associated banking information.

Transaction:

Data Entry:

- Automatically generate new registrar details, including Full Name, Email Address, Telephone Number, and IC-Number.
- Automatically generate the RegistrarID and Email Address for unique identification.
- Automatically generate details for a new event, including Event ID, Name, Location, Capacity, Time, Organization, Event Type, and Person In Charge (PIC).
- Ensure EventID is automatically generated for unique identification.
- Automatically generate new merchant details, including Merchant ID and Encrypted Banking Information.
- Ensure Merchant ID is automatically generated for unique identification.
- Automatically generate calendar entries with CalendarID, and EventID.
- Automatically generate Analyze ID if there is analyzation made on any event
- Specify the analyze type that has been made.
- Automatically generate ParticipantsID and VerificationID when participants participate on an event.
- Insert the value of ParFullName, ParEmailAddress, ParTelPhone, ParIC with the value of user entries.
- Automatically generate OrganizerID
- Insert the value of OrgFullName, OrgEmailAddress, and ParTelPhone.
- Automatically generate the PaymentID
- Insert the value of the BankDetails

Data Update/Delete:

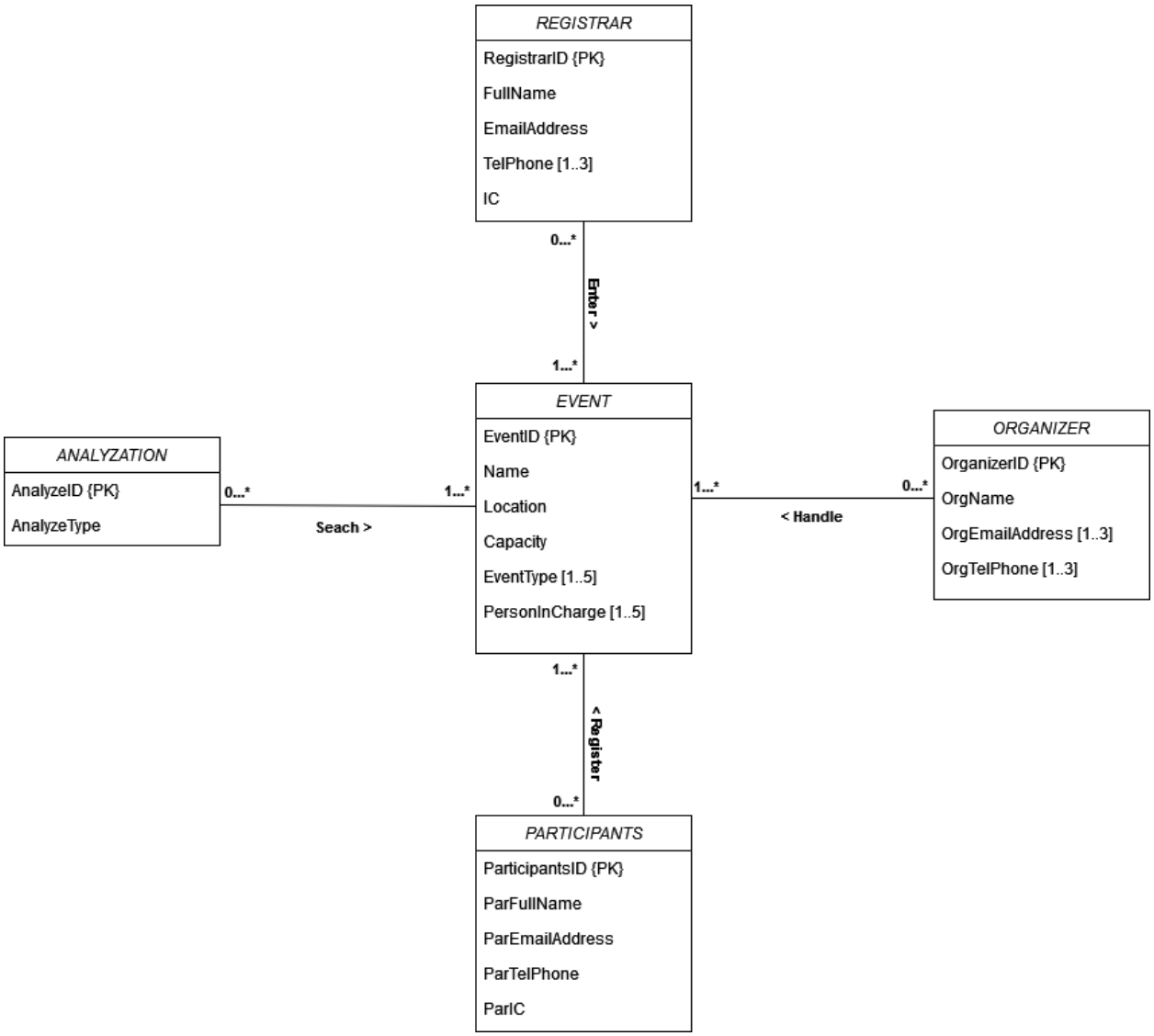
- Update registrar information, including Full Name, Email Address, Telephone Number, and IC-Number.
- Delete a registrar based on RegistrarID or Email Address.
- Update event information, including Name, Location, Capacity, Time, Organization, Event Type, and PIC.
- Delete an event based on Event ID.
- Update merchant information, including Encrypted Banking Information.
- Delete a merchant based on Merchant ID.
- Update/delete calendar entries based on CalendarID and Event ID.
- Update/delete any entries related to analyzation, thus removing both AnalyzeID and AnalyzeType
- Update/delete ParticipantsID, VerificationID, ParFullName, ParEmailAddress, ParTelPhone, ParIC if any changes are made.
- Update/delete OrganizerID, OrgName, OrgEmailAddress, OrgTelPhone if there is changes applied on them.
- Update/delete PaymentID and BankDetails

Data Queries:

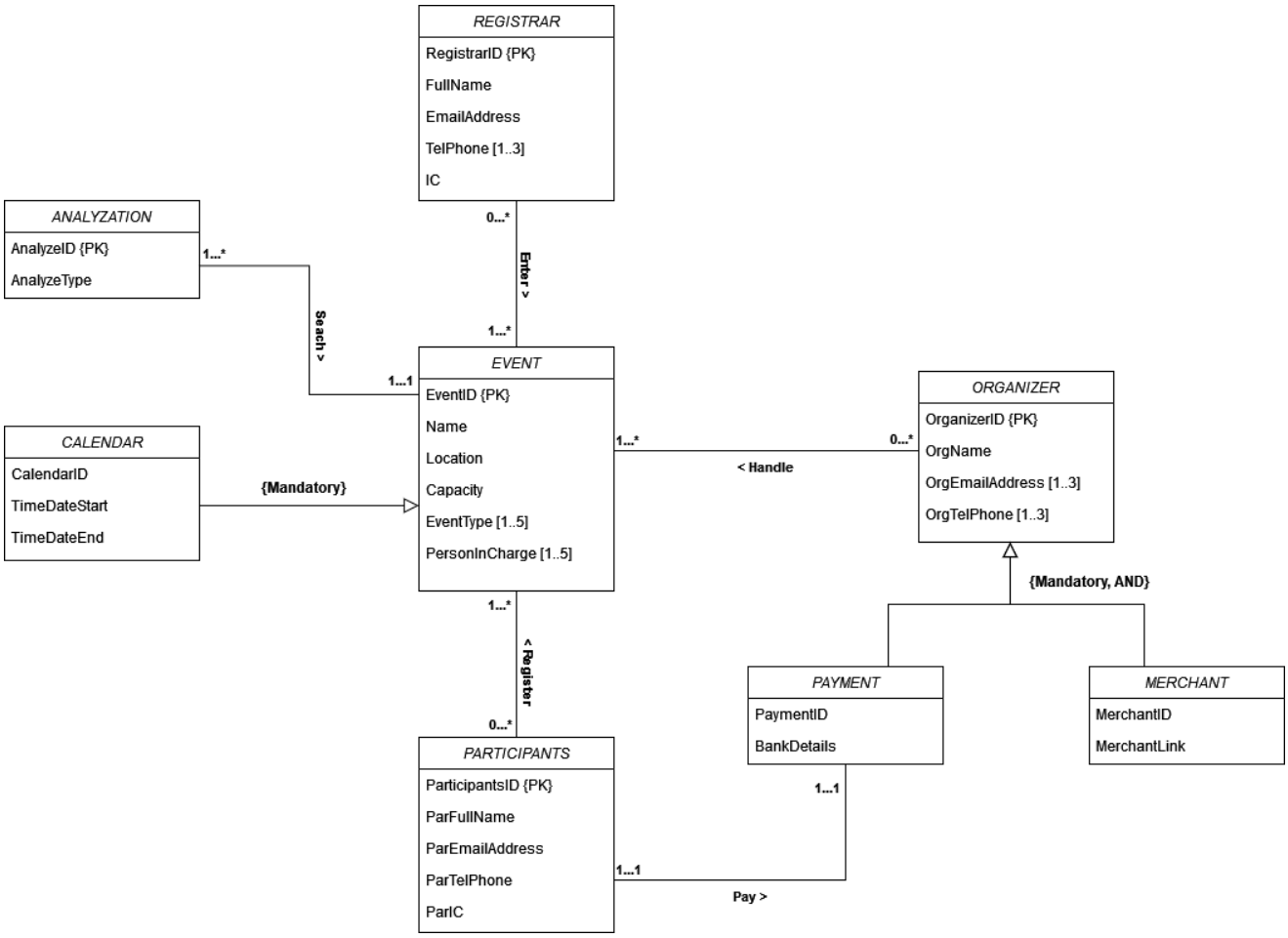
- List all registrars in the system with their details.
- Identify a registrar's information using RegistrarID or Email Address.
- List all events with their details.
- Identify an event's information using Event ID.
- List events hosted by a specific organization.
- List all merchants in the system with their details.
- Identify a merchant's information using Merchant ID.
- List all calendar entries with associated events.
- Identify calendar entries for a specific user using User ID.
- Count the numbers of EventType that is getting the hype using AnalyzeID as the unique identifier.
- Get the value of ParFullName, and VerificationID to be displayed on the website and send it to their email.
- Display the OrgName, on the website once an event is published.

4.0 Database conceptual design

4.1 Conceptual ERD



4.2 Enhanced ERD (EERD)



5.0 Data Dictionary

Entity Name	Attributes	Data Type & Length	Nulls	Multi Valued
Registrar	RegistrarID FullName EmailAddress TelPhone [1..3] IC	NUMBER(3) VARCHAR(30) VARCHAR(30) VARCHAR(12) VARCHAR(12)	No No No No No	No No No Yes No
Event	EventID Name Location Capacity EventType [1..5] PersonInCharge [1..5]	NUMBER(3) VARCHAR(30) VARCHAR(30) NUMBER(4) VARCHAR(30) VARCHAR(30)	No No No No No No	No No No No Yes Yes
Merchant	MerchantID MerchantLink	NUMBER(3) VARCHAR(30)	No No	No No
Calendar	CalendarID TimeDateStart TimeDateEnd	NUMBER(3) DATE DATE	No No No	No No No
Analyzation	AnalyzeID AnalyzeType	NUMBER(3) VARCHAR(30)	No No	No No
Participants	ParticipantsID ParFullName ParEmailAddress ParTelPhone ParIC VerificationID	NUMBER(3) VARCHAR(30) VARCHAR(30) VARCHAR(12) VARCHAR(12) VARCHAR(30)	No No No No No No	No No No No No No
Organizer	OrganizerID OrgName OrgEmailAddress [1..3] OrgTelPhone [1..3]	NUMBER(3) VARCHAR(30) VARCHAR(30) VARCHAR(12)	No No No No	No No Yes Yes
Payment	PaymentID BankDetails	NUMBER(3) VARCHAR(30)	No No	No No

6.0 Summary

Here, we conclude that the enhancement of the current Event Management System provided by Nexscholar is possible only if the step-by-step procedure of information gathering is being followed thoroughly. We did not only focus on our own proposed solutions, but we were also all ears with the stakeholders' approach to ensure that we could improve the website together. A brief data dictionary of the enhanced system (TO-BE) is an essential strategy before coming up with numerous solutions and improvements. By doing this analysis, we cannot deny that it can help us understand how the website works in the first place. After that, we will continue the project with the conceptual and Enhanced Entity Relationship Diagram (EERD)process.