DATABASE DEVELOPMENT OF HOLIDAY PLANE (HOPE)

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Abstract

A database is an organized collection of data that can be accessed, managed and modified quickly and efficiently, making it an important resource for examining, communicating and making decisions regarding data.The purpose of creating the Holiday Plane (HOPE) database is to describe the process and implementation of the learning theory that has been done before. The methodology we use is the Scrum methodology because this methodology is oriented towards a gradual process to achieve the final result. Based on the results and discussion during the HOPE database creation process, we created a database that is usually used in online flight ticket booking software. Users who play a role in the database process are customers and admins who have their respective duties. Some of the entities needed in creating a database are customer, bandara, tipe_pesawat, maskapai, hargatiket, wisata, kuliner, pemesananpergi, pemesananpulang, pembayaran, reschedule, and pembatalan. From the process that has been carried out, the HOPE database creation activity can be a means of implementing several database creation theories.

Keywords - holiday plane, HOPE, database, flight, ticket booking.

I. INTRODUCTION

A database is a collection of data that is organized and stored in a way that allows for easy access, management, and updates. The power of a database lies in its ability to retrieve and manipulate data quickly and efficiently, which makes it an important tool for data analysis, reporting and decision-making. The data in a database is stored in tables or objects, each of which has specific columns or properties. The data in the tables or objects are related to each other through relationships or connections.

Databases can be widely used and applied in the field of technology. The most commonly known usage of databases is in web and mobile applications for storing information about users, content, and preferences. Another usage can be seen in Enterprise Resource Planning (ERP) systems, where databases play a crucial role in storing information about customers, suppliers, products, and financial transactions [1]. Furthermore, databases can also be used for analyzing and processing data, by storing data collected from various sources and used for statistical analysis and decision-making. Databases also provide efficient data management by offering features such as backup, data recovery, and encryption.

There are several types of databases including Relational databases, that store data in tables related to one another through primary and foreign keys. NoSQL databases, these databases store data in non-relational formats, such as document, key-value, graph, and column-based [2]. They are more flexible than relational databases and are often used for large-scale and fast-access applications. Examples of NoSQL databases include MongoDB, Cassandra, and Redis. Relational databases, these databases store data in tables that are related to one another through primary and foreign keys [3]. Examples of relational databases include MySQL, Oracle, and Microsoft SQL Server. Object-oriented databases, these databases store data in the form of objects and classes, rather than tables and rows [4]. They are used to store complex data structures and are often used in object-oriented programming languages. Examples of Object-oriented databases are MongoDB, OrientDB, and Apache Cassandra.

II. LITERATURE REVIEW

A. XAMPP

XAMPP is a free, open-source, cross-platform web server package developed by Apache Friends that includes the Apache HTTP Server, MariaDB database, and interpreters for scripts written in the PHP and Perl programming languages [5]. It is commonly used for web development and local testing of web applications. It is available for Windows, macOS, and Linux. It is easy to install and use, making it a popular choice for developers and web administrators.

One of the key features of XAMPP is its ease of use. The package is designed to be very simple to install and set up, and it comes with a control panel that makes it easy to start and stop the various components. This makes it an ideal choice for beginners and developers who need a quick and easy way to set up a local web server. Additionally, XAMPP allows you to install multiple versions of PHP, making it easy to test your code against different versions of PHP, and also it

allows you to install Apache add-ons like Tomcat and Perl.

B. MYSQL

MySQL is a widely used, open-source relational database management system (RDBMS). It is based on the Structured Query Language (SQL), which is used for managing and manipulating the data stored in the database [6]. MySQL is a popular choice for web-based applications and is often used in combination with PHP, a server-side scripting language, to create dynamic, data-driven websites. MySQL stores data in tables, which are similar to spreadsheets. Each table has a specific set of columns (fields) and rows (records). Each column has a particular data type, such as integer, text, or date, which determines the kind of data that can be stored in that column.

MySQL also supports various advanced features, such as indexes, which improve the speed of data retrieval, and constraints, which ensure the integrity of the data. It also supports multiple storage engines, which allows you to choose the best storage engine for your particular use case.MySQL is also known for its reliability, stability and performance, and it's widely used by many popular websites and applications, such as Facebook, Twitter, YouTube, and many more.

C. PHPMYADMIN

PhpMyAdmin is a free and open-source web-based tool written in PHP that is used to manage and administer MySQL databases [7]. It provides a graphical user interface (GUI) for interacting with MySQL databases, making it easy to perform tasks such as creating, modifying, and deleting tables, managing users, and running SQL queries.

PhpMyAdmin is a popular tool among web developers and administrators because it allows them to easily manage and maintain their databases without having to use the command-line interface. It is often used in conjunction with a web server, such as Apache or Nginx, and a scripting language, such as PHP, to create dynamic, data-driven websites. Some of the features of phpMyAdmin include a user-friendly interface for managing and manipulating databases, support for multiple languages, a SQL editor for running SQL queries, tools for managing users and permissions, import and export capabilities for data backup and transfer, support for creating and modifying tables, fields, indexes, and relations, and a visual representation of the database schema

D. SQL LANGUAGE

SQL (Structured Query Language) is a programming language used to manage and manipulate data in relational databases [8]. It is used to insert, update, retrieve, and delete data in a database. SQL is a standard language for interacting with relational databases and is supported by many popular database management systems, such as MySQL, Oracle, SQL Server, and PostgreSQL.

SQL is a declarative language, which means that you tell it what you want it to do and it figures out how to do it. SQL statements are used to perform various tasks on a database, such as:

1. SELECT: used to retrieve data from one or more tables in the database.
2. INSERT: used to add new rows of data to a table.
3. UPDATE: used to modify existing data in a table.
4. DELETE: used to delete data from a table.
5. CREATE: used to create a new table, view, or another database object.
6. ALTER: used to modify the structure of an existing table or another database object.
7. DROP: used to delete a table, view, or another database object.

III. System Planning/Database Methodology

During the process of creating the HOPE database, the methodological technique we used was the scrum technique. Scrum is a framework for managing and completing complex projects. It is commonly used in software development but can be applied to any field. The scrum framework is based on the principles of transparency, inspection, and adaptation [9]. It consists of several roles and events that work together to help teams deliver products incrementally and iteratively.

1. Initiation

In the Scrum methodology, the initiation phase is the first step in starting a new project or product development. During this phase, the project stakeholders and the development team work together to define the overall goals and objectives for the project, as well as the high-level requirements and constraints. The initiation phase is also when the development team begins to identify the key risks and challenges that may impact the project and to plan how to mitigate or manage them. The outcome of the initiation phase is the development of a shared understanding of the project's objectives and a preliminary plan for how to achieve them.

Here are some of the tasks we have done at this stage:

a. Form a team of 3 members. The team we have formed consists of Aurelius, Kezia, and Stita.
b. Determine the vision to be achieved at the end of the project. The vision that we have set is to create a database regarding online flight ticket purchasing platforms. This database will be named HOPE (Holiday Plane). Making this database is expected to be a learning medium in understanding the process of making databases, especially in the tourism sector.
c. Prioritize goals and process timelines. Our priority is to determine the flow description

when a user buys a plane ticket online. Then we determine what entities and attributes are needed in the ticket booking database. We also need to define the relationship between one entity and other entities in the database. Then, we input dummy data. And lastly, we tried to make some views, procedures and functions needed in a database.

d. Estimated release date. Each stage in the creation of the HOPE database will be released every two weeks, during the BB20 Database Technology LAB class. The entire HOPE database is estimated to be completed in the 2nd week of January 2023

2. Plan and Estimate

In the Scrum methodology, the plan and estimate process refers to the activities that the development team undertakes to create a detailed plan for the upcoming sprint and to estimate the amount of work that will be required to complete the tasks in that sprint.

At the Plan and Estimate stage, our team determines the database design and project time estimates for each process required. Below are some of the tasks we have completed at this stage.

a. A list of all the tasks that need to be completed, including requests and recommendations from users.
b. An estimate of the effort required to complete the tasks. In general, users will tell them what they want and need from the online flight ticket booking platform, starting from the ordering process, choosing schedules and places and the planes to be used, to the payment process. Of all the wishes and recommendations of the user, the team will perfect the ability to make it happen and develop the time needed to make it.

3. Implementation

In the Scrum methodology, the implementation process refers to the work that the development team carries out to complete the tasks. During the implementation phase, the team focuses on completing the tasks they have committed to in the Planning meeting and delivering a potentially releasable increment of the product at the end.

Below are some of the points we have worked out at this stage.

a. Make progress reports every two weeks.
b. Fixed a database shortage in the previous week's run
c. Maintaining the progress of creating existing databases
d. Maintain consistency in following the target schedule that has been made.

4. Review and Retrospect

In the Scrum methodology, the "review and retrospect" process refers to the events that take place at the end of a sprint to evaluate the team's performance, assess the quality of the product increment, and identify opportunities for improvement. The outcome of the review and retrospect process is a clear understanding of the product increment's status and feedback, an action plan to improve the development process and a plan for the next sprint.

Here are some of the things we did during this process.

a. Conduct meetings with users
b. Provide an explanation of the new process that has been generated
c. Discuss and receive feedback from users

At this stage, our team provides assistance to the user (lecturer). We explain what has been developed with the aim that users can find out the progress of the project and provide feedback on the development of the HOPE database.

5. Release

The release process begins with the development team completing tasks, testing database upgrades, and ensuring that the database meets agreed-upon requirements and is of high quality. Once the development team and product owner are satisfied with the HOPE database upgrade, it is packaged and ready for release.

IV. RESULT AND DISCUSSION

TABLE I. PROBLEM IDENTIFICATION

Problems	Main problem: 1. Technical problem 2. Departure schedule unavailability 3. Can only depart and arrive in Indonesia only
Solutions	1. provide recommendations for culinary and tourist spots at the destination 2. Learn more about databases 3. providing interlude flight schedules that are not much different

TABLE II. SUMMARY OF TASK AND AGENT MODEL

No	Task	Agent	Knowledge Asset
1	Order flight tickets to go,	Customer	Basic knowledge of using the

	return, pay, reschedule, and cancel tickets.		website
2	Handling the order of tickets to go and return by the customer as well as the payment process	System	Understand the airline ticket booking scheme and understand the payment process that needs to be made by the customer
3	Handle reschedule requests and cancellation of ticket orders	System	Understand the requirements for rescheduling and cancelling and understanding database management for rescheduling and cancelling
4	Ensuring the HOPE database is working properly and data is backed up as often as possible	System	Understand MYSQL, PhpMyAdmin, XAMPP, and another necessary database management software

TABLE III. DATABASE ENTITY

No	Entity	Information
1	Customer	Contains information about customer data which includes CustomerId, NIK, NamaCustomer, Gender_Customer, Tanggal_Lahir_Customer, Nomor_Telepon_Customer, Email_Customer, Pass_Customer dan Alamat_Customer
2	Bandara	Contains information about data on airports in Indonesia which include BandaraId, Nama_Bandara, dan Kota_Bandara
3	Tipe_pesawat	Contains information regarding data on the types of aircraft that are currently operating and can be used for trips that include PesawatId dan Tipe_Pesawat
4	Maskapai	Contains information about the data of airlines that provide flight services which include MaskapaiId, Nama_Maskapai, Email_Maskapai, Kelas_Penerbangan, dan Pesawat_ID
5	Hargatiket	Contains information regarding available ticket price data which includes Idharga, MaskapaiId, KotaAsal, KotaTujuan, dan HargaTiket
6	Wisata	Contains information about travel recommendation data in a city which includes WisataId, Nama_Tempat_Wisata, Alamat_Tempat_Wisata, Nomor_Telepon, Foto_Lokasi, dan Nomor_Pergi
7	Kuliner	Contains information about culinary recommendation data in one of us which includes KulinerId, Nama_Tempat_Kuliner, Alamat_Tempat_Kuliner, Nomor_Telepon_Kuliner, Foto_Lokasi_kuliner, dan Nomor_Pergi_Kuliner
8	Pemesananpergi	Contains information regarding departure ticket booking data by the customer which includes Nomor_Transaksi_Pergi, Kota_Asal, Kota_Tujuan, Tanggal_Keberangkatan, Nomor_Kursi, Customer_ID, Bandara_ID, Maskapai_ID, Wisata_ID, dan Kuliner_ID,
9	Pemesananpulang	Contains information regarding data on returning ticket orders by customers which include Nomor_Transaksi_Pulang, Tanggal_Pulang, Nomor_Kursi_Pulang,

		Nomor_Pergi, Bandara_ID, dan Maskapai_ID.
10	Pembayaran	Contains information about customer ticket order payment data which includes Nomor_Pembayaran, Metode_Pembayaran, Customer_ID, Nomor_Pergi, Nomor_Pulang, dan hargaId
11	Reschedule	Contains information regarding customer rescheduling data which includes RescheduleID, Status_Reschedule, Tanggal_Baru, Customer_ID, Nomor_Pulang, Nomor_Pergi, dan Nomor_Bayar
12	Pembatalan	Contains information regarding customer ticket order cancellation data which includes PembatalanID, Status_Pembatalan, Status_Refund, Customer_ID, Nomor_Pulang, Nomor_Pergi, dan Nomor_Bayar

Use Case of HOPE Database

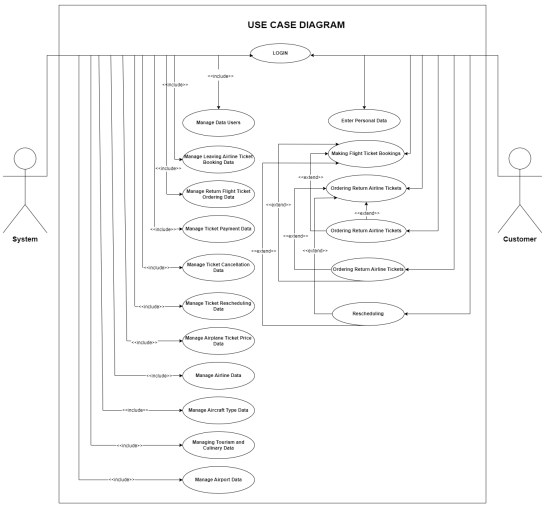


Fig 4.1. Use case diagram of HOPE database

For more detail :

https://drive.google.com/file/d/1y_tZIe0dT0hPuNKnxBGhZdRlCKZ9MmOR/view?usp=share_link

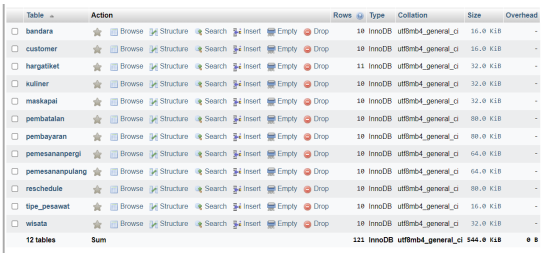
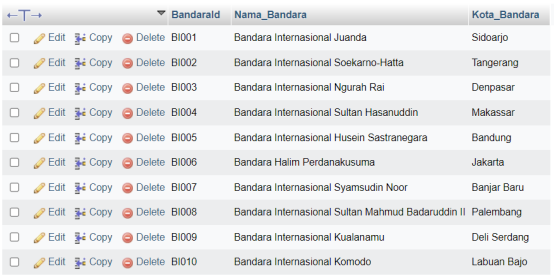


Table	Action	Rows	Type	Collation	Size	Overhead
bandara	Browse Structure Search Insert Empty Drop	10	InnoDB	utf8mb4_general_ci	16.0 KiB	-
customer	Browse Structure Search Insert Empty Drop	10	InnoDB	utf8mb4_general_ci	16.0 KiB	-
hargatiket	Browse Structure Search Insert Empty Drop	11	InnoDB	utf8mb4_general_ci	32.0 KiB	-
kuliner	Browse Structure Search Insert Empty Drop	10	InnoDB	utf8mb4_general_ci	32.0 KiB	-
maskapai	Browse Structure Search Insert Empty Drop	10	InnoDB	utf8mb4_general_ci	32.0 KiB	-
pembatalan	Browse Structure Search Insert Empty Drop	10	InnoDB	utf8mb4_general_ci	80.0 KiB	-
pembayaran	Browse Structure Search Insert Empty Drop	10	InnoDB	utf8mb4_general_ci	80.0 KiB	-
pemesananpergi	Browse Structure Search Insert Empty Drop	10	InnoDB	utf8mb4_general_ci	64.0 KiB	-
pemesananpulang	Browse Structure Search Insert Empty Drop	10	InnoDB	utf8mb4_general_ci	64.0 KiB	-
reschedule	Browse Structure Search Insert Empty Drop	10	InnoDB	utf8mb4_general_ci	80.0 KiB	-
tipe_pesawat	Browse Structure Search Insert Empty Drop	10	InnoDB	utf8mb4_general_ci	16.0 KiB	-
wisata	Browse Structure Search Insert Empty Drop	10	InnoDB	utf8mb4_general_ci	32.0 KiB	-
12 tables	Sum	121	InnoDB	utf8mb4_general_ci	544.0 KiB	0 B

Fig 4.2. Result of all table in HOPE database



	BandaraId	Nama_Bandara	Kota_Bandara
Edit Copy Delete	BI001	Bandara Internasional Juanda	Sidoarjo
Edit Copy Delete	BI002	Bandara Internasional Soekarno-Hatta	Tangerang
Edit Copy Delete	BI003	Bandara Internasional Ngurah Rai	Denpasar
Edit Copy Delete	BI004	Bandara Internasional Sultan Hasanuddin	Makassar
Edit Copy Delete	BI005	Bandara Internasional Husein Sastranegara	Bandung
Edit Copy Delete	BI006	Bandara Halim Perdanakusuma	Jakarta
Edit Copy Delete	BI007	Bandara Internasional Syamsudin Noor	Banjar Baru
Edit Copy Delete	BI008	Bandara Internasional Sultan Mahmud Badaruddin II	Palembang
Edit Copy Delete	BI009	Bandara Internasional Kualanamu	Deli Serdang
Edit Copy Delete	BI010	Bandara Internasional Komodo	Labuan Bajo

Fig 4.3. Result of bandara table in HOPE database

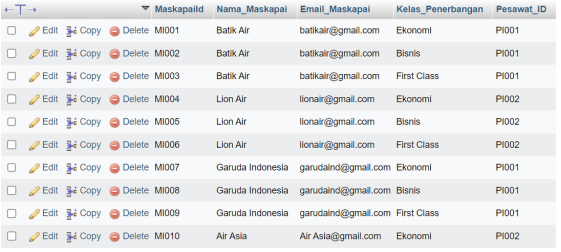
Fig 4.4. Result of customer table in HOPE database

	Idharga	Maskapaiid	KotaAsal	KotaTujuan	HargaTiket
Edit Copy Delete	HI001	MI001	Denpasar	Surabaya	700000
Edit Copy Delete	HI002	MI001	Denpasar	Surabaya	700000
Edit Copy Delete	HI003	MI001	Sidoarjo	Tangerang	650000
Edit Copy Delete	HI004	MI001	Tangerang	Palembang	800000
Edit Copy Delete	HI005	MI001	Palembang	Tangerang	800000
Edit Copy Delete	HI006	MI001	Denpasar	Tangerang	900000
Edit Copy Delete	HI007	MI001	Labuan Bajo	Banjar Baru	750000
Edit Copy Delete	HI008	MI001	Tangerang	Palembang	750000
Edit Copy Delete	HI009	MI001	Bandung	Jakarta	500000
Edit Copy Delete	HI010	MI001	Makassar	Palembang	750000
Edit Copy Delete	HI011	MI001	Palembang	Laboan Bajo	900000

Fig 4.5. Result of hargatiket table in HOPE database

	Kulinerid	Nama_Tempat_Kuliner	Alamat_Tempat_Kuliner	Nomor_Telepon_Kuliner	Foto_Lokasi_kuliner	Nomor_Pergi_Kuliner
Edit Copy Delete	KI00000001	Rawon Gajah Mada	Jl. Gajah Mada	085455221545	foto1	NP00000001
Edit Copy Delete	KI00000002	Baso Aci Akang	Jl. Kisamaun	082947510760	foto2	NP00000002
Edit Copy Delete	KI00000003	Martabak Har	Jl. Bumi Srwijaya	081074020150	foto3	NP00000003
Edit Copy Delete	KI00000004	Roti Nogat	Ruko Pasar Modern BSD	08866128180	foto4	NP00000004
Edit Copy Delete	KI00000005	Nasi Cumi Hitam Pak Kris	Ruko Paramount	085455221545	foto5	NP00000005
Edit Copy Delete	KI00000006	RM Swarga	Jl. A Yani Km 34	08557871838	foto6	NP00000006
Edit Copy Delete	KI00000007	Pempek Saga	Jl. Merdeka	08212987176	foto7	NP00000007
Edit Copy Delete	KI00000008	Mie Ayam Gondangdia	Jl. Cikini IV	0868869783363	foto8	NP00000008
Edit Copy Delete	KI00000009	Mie celor 26	Jl. Ilir	0893422256234	foto9	NP00000009
Edit Copy Delete	KI00000010	Ikan Kuah Asam Philemon	Kampung Ujung	088137006929	foto10	NP00000010

Fig 4.6. Result of kuliner table in HOPE database



	Maskapaiid	Nama_Maskapai	Email_Maskapai	Kelas_Penerbangan	Pesawat_ID
Edit Copy Delete	MI001	Batik Air	batikair@gmail.com	Ekonomi	PI001
Edit Copy Delete	MI002	Batik Air	batikair@gmail.com	Bisnis	PI001
Edit Copy Delete	MI003	Batik Air	batikair@gmail.com	First Class	PI001
Edit Copy Delete	MI004	Lion Air	lionair@gmail.com	Ekonomi	PI002
Edit Copy Delete	MI005	Lion Air	lionair@gmail.com	Bisnis	PI002
Edit Copy Delete	MI006	Lion Air	lionair@gmail.com	First Class	PI002
Edit Copy Delete	MI007	Garuda Indonesia	garudaind@gmail.com	Ekonomi	PI001
Edit Copy Delete	MI008	Garuda Indonesia	garudaind@gmail.com	Bisnis	PI001
Edit Copy Delete	MI009	Garuda Indonesia	garudaind@gmail.com	First Class	PI001
Edit Copy Delete	MI010	Air Asia	Air Asia@gmail.com	Ekonomi	PI002

Fig 4.7. Result of maskapai table in HOPE database

PembatalanID	Status_Pembatalan	Status_Refund	Customer_ID	Nomor_Pulang	Nomor_Pergi	Nomor_Bayar
PI00000001	Berhasil Batal	Berhasil Refund	CI001	NL00000001	NP00000001	NB00000001
PI00000002	Tidak Berhasil Batal	Tidak Berhasil Refund	CI002	NL00000002	NP00000002	NB00000002
PI00000003	Berhasil Batal	Berhasil Refund	CI003	NL00000003	NP00000003	NB00000003
PI00000004	Tidak Berhasil Batal	Tidak Berhasil Refund	CI004	NL00000004	NP00000004	NB00000004
PI00000005	Tidak Berhasil Batal	Tidak Berhasil Refund	CI005	NL00000005	NP00000005	NB00000005
PI00000006	Berhasil Batal	Berhasil Refund	CI006	NL00000006	NP00000006	NB00000006
PI00000007	Berhasil Batal	Berhasil Refund	CI007	NL00000007	NP00000007	NB00000007
PI00000008	Berhasil Batal	Berhasil Refund	CI008	NL00000008	NP00000008	NB00000008
PI00000009	Berhasil Batal	Berhasil Refund	CI009	NL00000009	NP00000009	NB00000009
PI00000010	Tidak Berhasil Batal	Tidak Berhasil Refund	CI010	NL00000004	NP00000010	NB00000010

Fig 4.8. Result of pembatalan table in HOPE database

Nomor_Pembayaran	Metode_Pembayaran	Customer_ID	Nomor_Pergi	Nomor_Pulang	hargaId
NB00000001	OVO	CI001	NP00000001	NL00000001	HI001
NB00000002	GoPay	CI002	NP00000002	NL00000002	HI002
NB00000003	Debit Card	CI003	NP00000003	NL00000003	HI003
NB00000004	OVO	CI004	NP00000004	NL00000004	HI004
NB00000005	GoPay	CI005	NP00000005	NL00000005	HI005
NB00000006	Debit Card	CI006	NP00000006	NL00000006	HI006
NB00000007	Debit Card	CI007	NP00000007	NL00000007	HI007
NB00000008	GoPay	CI008	NP00000008	NL00000008	HI008
NB00000009	Credit Card	CI009	NP00000009	NL00000009	HI009
NB00000010	Debit Card	CI010	NP00000010	NL00000010	HI010

Fig 4.9. Result of pembayaran table in HOPE database

Nomor_Transaksi_Pergi	Kota_Asal	Kota_Tujuan	Tanggal_Keberangkatan	Nomor_Kursi	Customer_ID	Bandara_ID	Maskapai_ID
NP00000001	Denpasar	Surabaya	2022-10-27	1A	CI001	BI003	MI001
NP00000002	Sidoarjo	Tangerang	2022-11-10	10D	CI002	BI001	MI001
NP00000003	Tangerang	Palembang	2022-11-08	12A	CI003	BI002	MI001
NP00000004	Palembang	Tangerang	2022-12-09	14B	CI004	BI006	MI001
NP00000005	Denpasar	Tangerang	2022-11-10	12A	CI005	BI003	MI001
NP00000006	Labuan Bajo	Banjar Baru	2022-12-21	12D	CI006	BI010	MI001
NP00000007	Tangerang	Palembang	2022-12-18	10B	CI007	BI002	MI001
NP00000008	Bandung	Jakarta	2022-11-13	9B	CI008	BI005	MI001
NP00000009	Makassar	Palembang	2022-12-08	10B	CI009	BI004	MI001
NP00000010	Palembang	Labuan Bajo	2022-11-20	2A	CI010	BI008	MI001

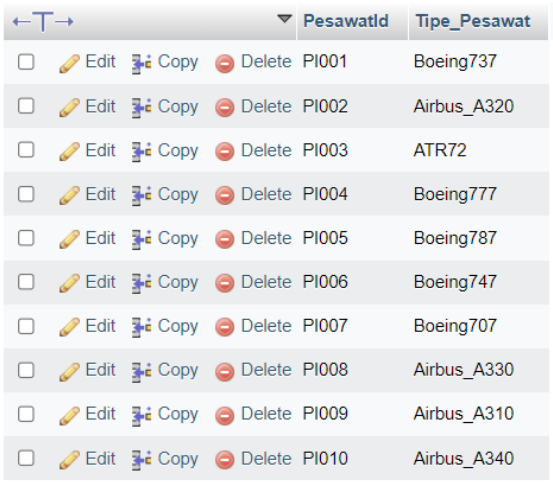
Fig 4.10. Result of pemesananpergi table in HOPE database

Nomor_Transaksi_Pulang	Tanggal_Pulang	Nomor_Kursi_Pulang	Nomor_Pergi	Bandara_ID	Maskapai_ID
NL00000001	2022-10-31	10D	NP00000001	BI010	MI001
NL00000002	2023-01-01	1A	NP00000002	BI002	MI001
NL00000003	2023-01-02	12B	NP00000003	BI008	MI001
NL00000004	2023-01-03	6C	NP00000004	BI002	MI001
NL00000005	2023-01-04	15B	NP00000005	BI002	MI001
NL00000006	2023-01-05	14B	NP00000006	BI007	MI001
NL00000007	2023-01-06	9A	NP00000007	BI008	MI001
NL00000008	2023-01-07	8E	NP00000008	BI006	MI001
NL00000009	2023-01-08	10D	NP00000009	BI008	MI001
NL00000010	2023-01-09	16D	NP00000010	BI010	MI001

Fig 4.11. Result of pemesananpulang table in HOPE database

RescheduleID	Status_Reschedule	Tanggal_Baru	Customer_ID	Nomor_Pulang	Nomor_Pergi	Nomor_Bayar
RC00000001	Tidak Berhasil Reschedule	2023-02-04	CI001	NL00000001	NP00000001	NB00000001
RC00000002	Tidak Berhasil Reschedule	2023-02-04	CI002	NL00000002	NP00000002	NB00000002
RC00000003	Tidak Berhasil Reschedule	2023-02-04	CI003	NL00000003	NP00000003	NB00000003
RC00000004	Tidak Berhasil Reschedule	2023-02-04	CI004	NL00000004	NP00000004	NB00000004
RC00000005	Berhasil Reschedule	2023-02-04	CI005	NL00000005	NP00000005	NB00000005
RC00000006	Berhasil Reschedule	2022-11-25	CI006	NL00000006	NP00000006	NB00000006
RC00000007	Berhasil Reschedule	2023-03-04	CI007	NL00000007	NP00000007	NB00000007
RC00000008	Tidak Berhasil Reschedule	2022-11-29	CI008	NL00000008	NP00000008	NB00000008
RC00000009	Berhasil Reschedule	2023-08-04	CI009	NL00000009	NP00000009	NB00000009
RC00000010	Berhasil Reschedule	2022-12-28	CI010	NL00000010	NP00000010	NB00000010

Fig 4.12. Result of reschedule table in HOPE database



PesawatId	Tipe_Pesawat
PI001	Boeing737
PI002	Airbus_A320
PI003	ATR72
PI004	Boeing777
PI005	Boeing787
PI006	Boeing747
PI007	Boeing707
PI008	Airbus_A330
PI009	Airbus_A310
PI010	Airbus_A340

Fig 4.13. Result of tipe_pesawat table in HOPE database

WisataId	Nama_Tempat_Wisata	Alamat_Tempat_Wisata	Nomor_Telepon	Foto_Lokasi	Nomor_Pergi
WI00000001	Bahari Tlocor	Jl. Desa Tlocor	081245362212	img1	NP00000001
WI00000002	Benteng Heritage	Jalan Cilame	081290902212	img2	NP00000002
WI00000003	Pulo Kerto	Kecamatan Gandus	087878101599	img3	NP00000003
WI00000004	Scientia Square Park	Jl. Gading Serpong	081699111256	img4	NP00000004
WI00000005	Ocean Water Park	Jl. Pahlawan Seribu	082245392978	img5	NP00000005
WI00000006	Danau Seran	Kecamatan Landasan Ulin	081875762288	img6	NP00000006
WI00000007	Kambang Iwak	Jl. Tasik	082335365543	img7	NP00000007
WI00000008	Wisata Kota Tua	Kota Tua Jakarta	081786265353	img8	NP00000008
WI00000009	Jembatan Ampera	Jl. Lintas Sumatera	081515881010	img9	NP00000009
WI00000010	Taman Nasional Komodo	Pulau Komodo	082525881616	img10	NP00000010

Fig 4.14. Result of wisata table in HOPE database

Class Diagram of HOPE Database

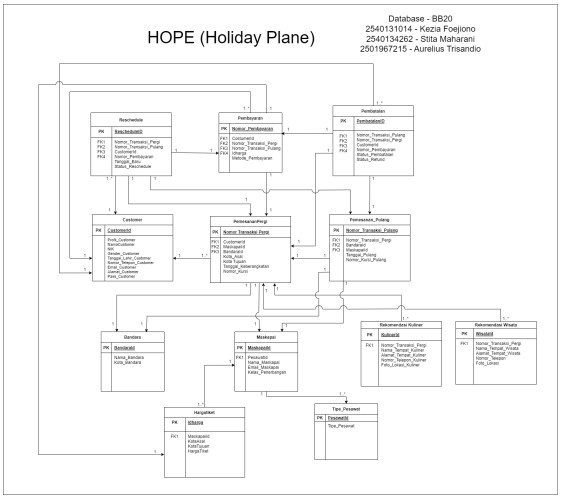


Fig 4.15. Class Diagram of HOPE database

For more detail :

https://drive.google.com/file/d/1zygibtaakhprYtoH0_rgHaKm39BzEvpL/view?usp=share_link

TABLE IV. RELATIONSHIP TYPES (CLASS DIAGRAM TABLE)

Entity Name	Multiplicity	Relation ship	Multiplicity	Entity Name
Reschedule	1	Take Data From	1	Pembayaran
Reschedule	*	Requested	1	Customer
Reschedule	1	Take Data From	1	Pemesananpergi
Reschedule	1	Take Data From	1	Pemesananpulang

Pembayaran	*	Posses	1	Customer
Pembayaran	1	Take Data From	1	Harga Tiket
Pembayaran	1	Posses	1	Pemesanan Pergi
Pembatalan	*	Requested	1	Customer
Pembatalan	1	Take Data From	1	Pembayaran
Pembatalan	1	Take Data From	1	Pemesanpergi
Pembatalan	1	Take Data From	1	Pemesan anpulang
Pemesan anpergi	*	Ordered	1	Customer
Pemesan anpergi	1	Posses	1	Bandara
Pemesan anpergi	1	Posses	1	Maskapai
Pemesan anpulang	1	Sometimes Posses	1	Pemesan anpergi
Pemesan anpulang	1	Posses	1	Bandara
Pemesan anpulang	1	Posses	1	Maskapai
Maskapai	1	Posses	*	Tipe_Pesawat
Hargatiket	*	Posses	1	Maskapai

Entity Relationship Diagram (ERD) of HOPE database

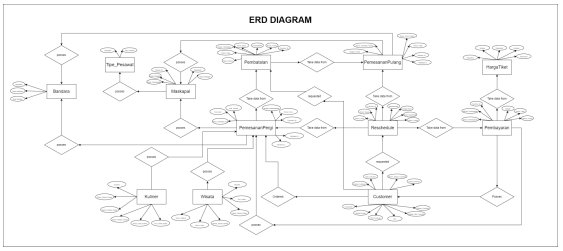


Fig 4.16 ERD of HOPE Database

For more detail :

https://drive.google.com/file/d/1Y7vbmbypUzrKgfo4fbzFK0t2jO6DhTvu/view?usp=share_link

V. CONCLUSION

In this era of very rapid technological developments like today, data is something that is very valuable. Therefore, data must be managed in a good database. We have tried to implement the theory about databases and their creation into this HOPE database project. The HOPE database contains data that is usually used in an application/website for online flight ticket booking. The HOPE database contains some information in the form of customer data, airports, airlines, ticket prices, travel recommendations, and culinary recommendations. In addition, the HOPE database also contains information regarding outgoing ticket orders, return tickets, payments, rescheduling, and cancellation of ticket orders. With the creation of this HOPE database, it is hoped that it can assist in further learning and understanding of the database creation process.

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Attachment I

Jobdesk for Each Member

No.	Student ID	Member's Name	Jobdesk
1.	2540131014	Kezia Foejiono	Create a HOPE Database, Create the paper
2.	2501967215	Aurelius Trisandio	Create a HOPE Database, Create the paper
3.	2540134262	I G.A.N Stita Maharani	Create a HOPE Database, Create the paper