



## Data Storage System Arrival and Departure Airnav Halim Perdana Kusuma Airport

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### ARTICLE INFO

### ABSTRACT

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The Arrival and Departure sheet data storage system is a familiar thing in the LPPNI Public Corporation Halim Perdana Kusuma branch. But the problem of irregular storage and making reports that are not fast and accurate often become obstacles that must be experienced. Data storage Arrival and Departure sheet using a manual system results in frequent errors. In the development of the company to input and make reports Arrival and Departure sheet data still uses a manual system that requires accuracy and a very long process. Therefore the Arrival and Departure sheet data storage system will be able to solve the problem of inputting data and provide data reports quickly and accurately. The system development method in this study uses prototypes or prototypes which include planning, design, implementation and testing. The results of this research are to obtain application and testing on the system that will be developed with the results of black box testing.

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## 1. Introduction

The Indonesian Aviation Navigation Service Agency (AirNav Indonesia) as an agency in the world of aviation that specializes in aviation navigation, has an important task in maintaining and serving aviation traffic to all aircraft both civilian and military, so that the number of aircraft served and written and log flight activity. At first, every aircraft data in its flight activities will be stored in a conventional manner, namely in Microsoft Excel. The conventional way is the manual way or the usual way of storing the data. Thanks to advances in information technology it is possible to store this information data in various ways. One of them is through vb.net. The use of vb.net is very beneficial if it is applied to the Indonesian Aviation Navigation Service Provider Agency (AirNav Indonesia) especially at Halim Perdana Kusuma Airport because it is considered to provide quite practical solutions to problems that often occur.

Initially, the Arrival and Departure Sheet data storage at Halim Perdana Kusuma Airport only used Microsoft Excel, the tables were created manually by Air Traffic Controller officers so that it was disorganized and confusing. With the development of these technological advances and to make it easier for AirNav at Halim Perdana Kusuma Airport to store the Arrival and Departure Sheet data, this research creates an Arrival and Departure Sheet Data Storage System at AirNav Halim Perdana Kusuma Airport, because AirNav Halim Perdana Kusuma does not yet have a vb.net based Arrival and Departure Sheet data storage system. This study aims to design and build a data storage system for AIRNAV arrivals and departures.

## 2. Research Methods

This study uses a prototype / prototype method in the development of AIRNAV Arrival and Departure Data Storage Systems. The prototype method used consists of planning, designing, implementing and testing.



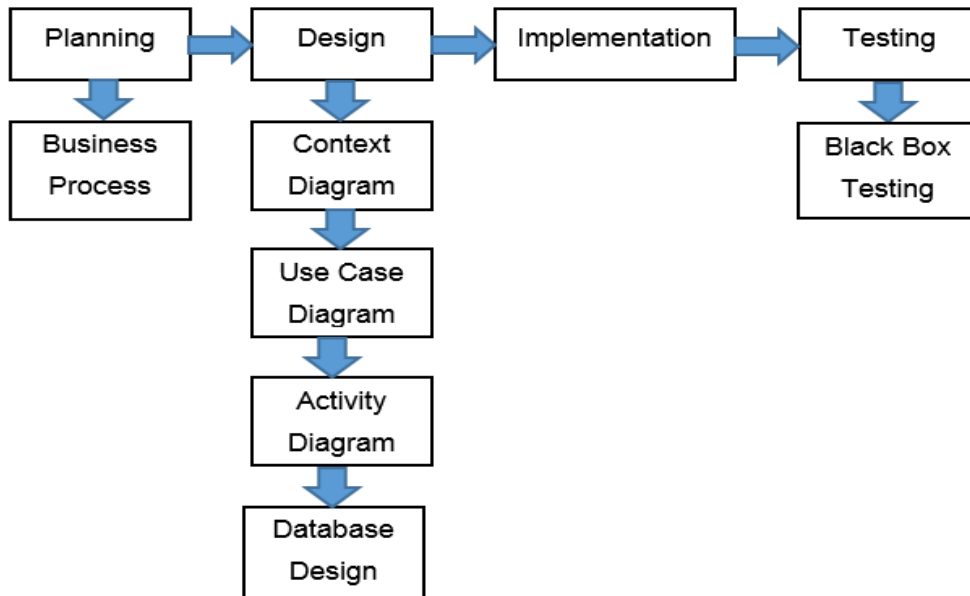


Fig 1. Research Methodology

**2.1 Planning**

This stage discusses planning in designing and building an overall AIRNAV arrival and departure data storage system.

**2.2 Design**

This stage discusses a design in making an AIRNAV arrival and departure data storage system consisting of context diagrams, usecase diagrams, activity diagrams and database design.

**2.3 Implementation**

This stage explains the development of software based on designs that have been created using object-based design (UML).

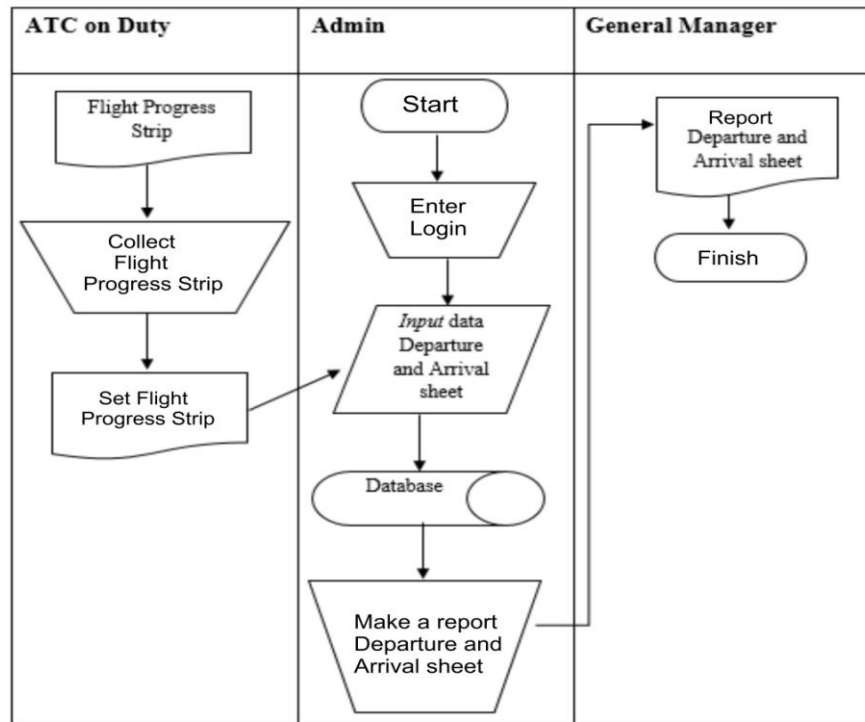
**2.4 Testing**

This stage explains the testing on the system that has been made, this testing method uses Black Box

**3. Result**

**3.1 Planning**

AIRNAV Arrival and Departure Data Storage System. this is done so that the administration system can be stored properly and reduce data redundancy. The data used consists of departure data and arrival data [1-2]. Business processes on the AIRNAV Arrival and Departure Data Storage System are shown in Fig 2.

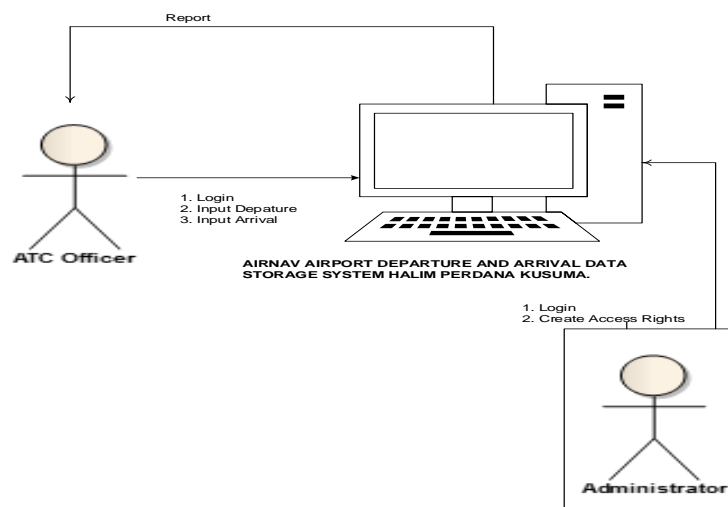


**Fig 2.** Business processes

**3.2 Design**

**a. Context Diagram**

Context diagrams are used to identify business people and identify use cases in creating AIRNAV arrival and departure data storage systems.



**Fig 3.** Context Diagram

**b. Use Case Diagram**

Use case diagram is a technique used in system development and describes a series of activities and user interactions to achieve goals. The use case diagram of the system to be developed will be shown in Fig 4.

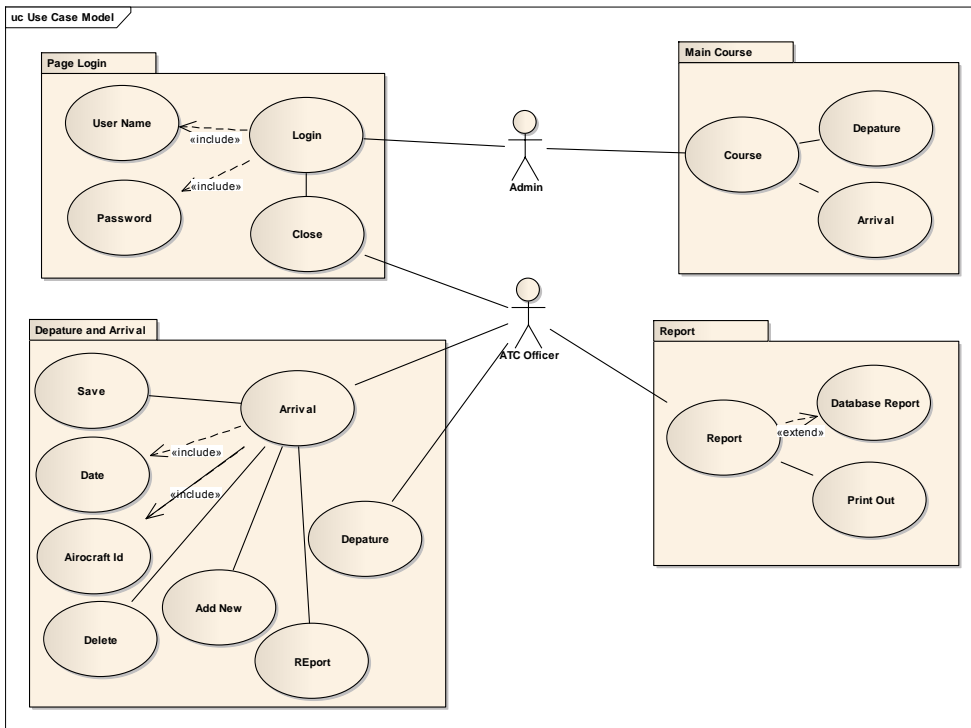


Fig 4. Use Case Diagram

c. Activity Diagram

Activity diagram illustrates the processes and activity pathways of the system being developed [6-8]. The activity diagram of the system to be developed will be shown in Fig 5

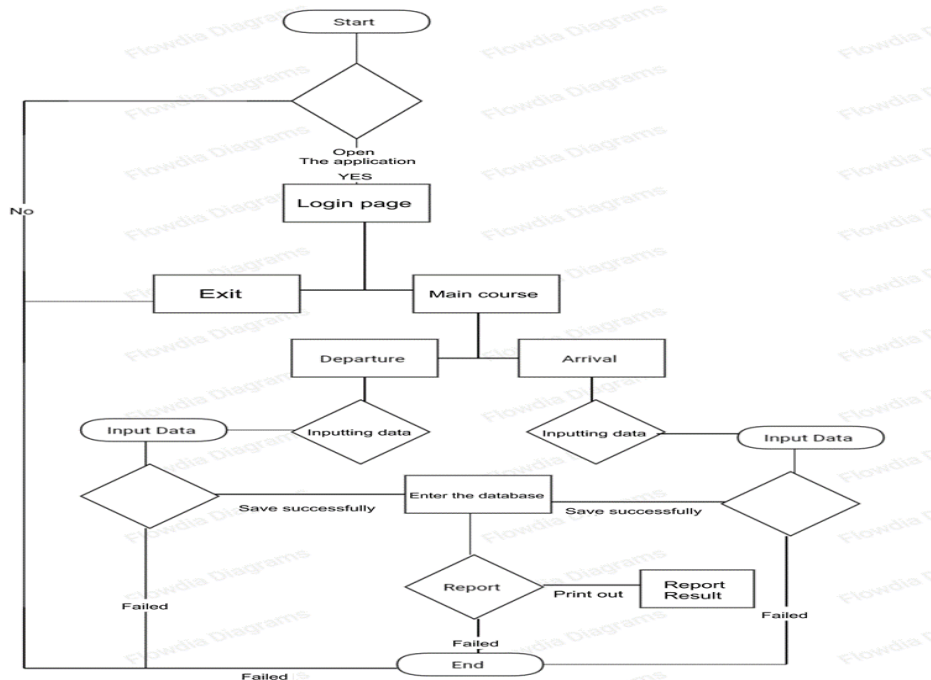


Fig 5. Activity Diagram

## d. Database Design

Database or commonly known as database is a collection of data relating to an object, topic, or specific special purpose [11-12]. The database on this system consists of two tables as shown in table 1 and table 2.

**Table 1.**

Departure

No	Field	Type	Information
1	Date	Date/Time	
2	Call Sign	Text	PrimaryKey
3	Destination	Text	
4	Registration	Text	
5	Type Aircraft	Text	
6	Runway	Text	
7	Parking Stand	Text	
8	PushBack Time	Text	
9	Taxi Time	Text	
10	ETD	Number	
11	ATD	Number	
12	Delay Time	Number	
13	Route	Text	
14	Status_Flight	Text	
15	Status_Schedule	Text	

**Table 2.**

Arrival

No	Field	Type	Information
1	Date	Date/Time	
2	Call Sign	Text	PrimaryKey
3	From	Text	
4	Registration	Text	
5	Type Aircraft	Text	
6	Runway	Text	
7	Parking Stand	Text	
8	First Contact Time	Text	
10	ETA	Number	
11	ATA	Number	
12	Delay Time	Number	
13	Route	Text	
14	Status_Flight	Text	
15	Status_Schedule	Text	

**3.3 Implementation**

This stage shows the results as well as testing of the interface design that has been implemented into the program designed. The programming languages used are Visual Studio and DBMS.

**3.4 Testing**

## a. Testing the Login Page

The Login page is a login form where the ATC officer logs in with the specified username and password before entering the main menu. Testing the login page is used with valid and invalid user accounts. This test can be shown in table 3.

**Tabel 3.**

Testing The Login Page

Input Data	Output expectations.	Observation	Conclusion
Username : RTZ Pass : RTZ	The system can do the data validation process. If the username and pass are incorrect then the system will issue an error notification and if the user name and pass are correct then the system will display to the main menu page.	Notification of an error or failure to enter the user name and password can be seen in Fig 6.	OK
User Name :Gerry Pass : xxxxx	The system can display the main menu page	The Main Menu page can be seen in Fig 7	OK

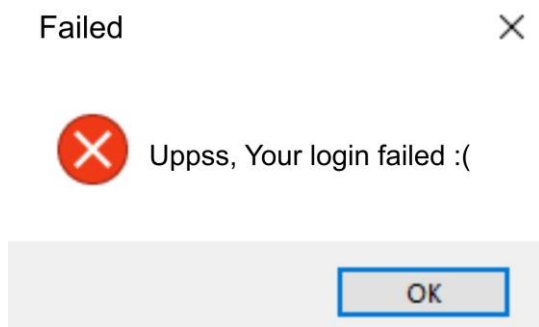


Fig 6. Notification



Fig 7. Main Menu Display

b. Testing Depature Pages

On this page there are several columns that have been provided to fill the Departure sheet database in the form of textboxes, combo boxes, and radio buttons. On this page there are also 5 buttons including buttons leading to the report page, as shown in Fig 8.

**Tabel 4.**  
Data Depature

Input Data	Output expectations.	Observation	Conclusion
Enter Depature data in the form of textboxes, combo boxes, and radio buttons (Fig 8)	The system can record depature data.	Data Recorded and entered into the database. (Fig 8)	OK



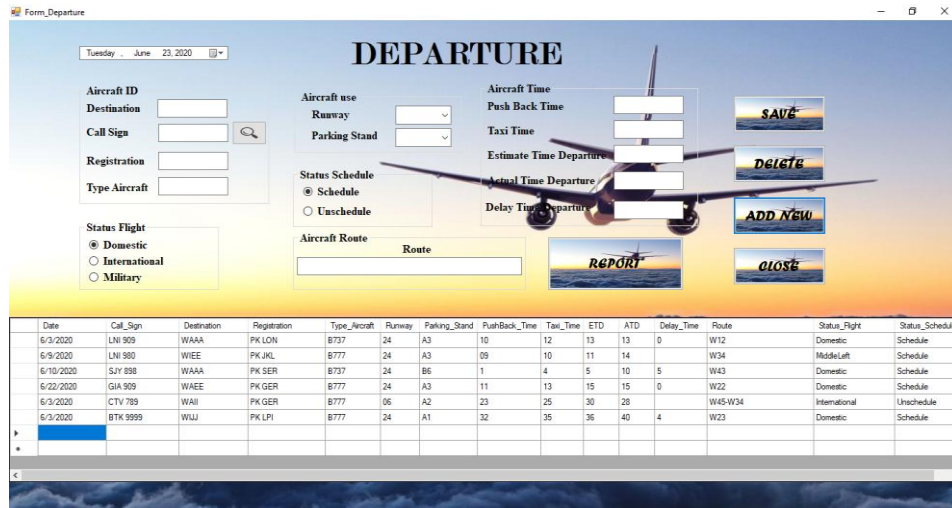


Fig 8. Departure Page

c. Arrival Test Page.

On this page there are several columns that have been provided to fill the Arrival sheet database in the form of textboxes, combo boxes, and radio buttons. On this page there are also 5 buttons including buttons leading to the report page, as shown in Fig 9.

Table 5.  
Data Arrival

Input Data	Output expectations.	Observation	Conclusion
Enter Arrival data in the form of textboxes, combo boxes, and radio buttons (Fig 9)	The system can record arrival data.	Data Recorded and entered into the database. (Fig 9)	OK

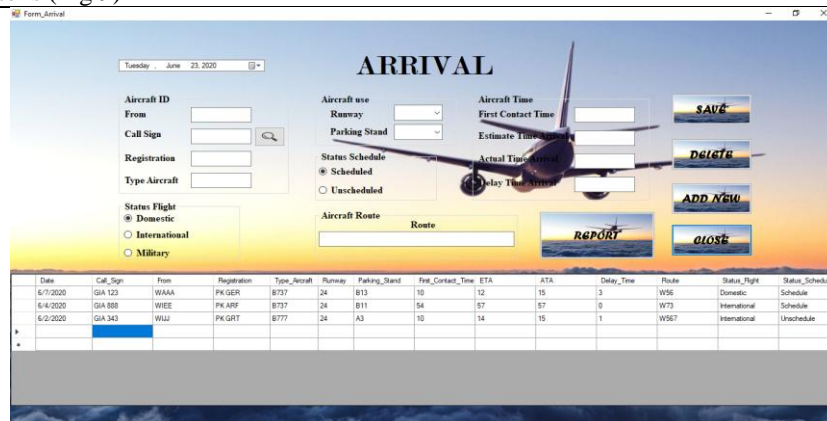


Fig 9. Data Arrival

4. Conclusion

conclusion regarding the influence of leadership style on work motivation at PT Anugrah Argon Medica. It can be concluded that the leadership style on the work motivation of PT. Anugrah Argon Medica employees has a positive and significant effect, which means that Ho is rejected and Ha is accepted. This is shown by t count greater than t table at a significant level of 5%, namely t count > t table. 2.181 > 2.055 then Ho is rejected and Ha is accepted, that is, there is an influence of leadership style on employee work motivation.

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