TECHNICAL UNIVERSITY OF MALAYSIA MALACCA

FACULTY OF INFORMATION COMMUNICATION AND TECHNOLOGY

W O R K S H O P 1

R E P O R T

Name	**:**	**Pang Jia Mei**
Matric Number	**:**	**B031910436**
Course	**:**	**BITS (S1G2)**
Project Title	**:**	**Goat Farm Management System**
Supervisor Name	**:**	**Ts. Dr. Raja Rina Bt. Raja Ikram**
Supervisor Signature	**:**	
Evaluator Name	**:**	**Dr. Nor Hafeizah Bt. Hassan**
Evaluator Signature	**:**	

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Chapter 1 - Introduction

1.1 Background

More and more farmers are willing to invest money for a simple herd control program that guarantee long term profitability in the future. They believe ineffective record keeping practice makes risk and loss management impossible. The demand for goat milk is on the rise, thus farmer should take the opportunity to increase the yield of dairy goat.

1.2 Problem Statement

- Farms having inconsistent milk yield due to unreliable feeding practice and health records.
- Farms having difficulty tracking milk production causing loss in profit.
- Difficulty in determining working personnel or machine error.

1.3 Objective

- To develop a system that will surely maintained goat milk production and good health.
- To analyze milk production performance of each goat herd to enable the goat farm owner secure the profits.
- To ensure the farm worker perform his duties on goat feeding and help identify the causes to affect the quality and milk yield of goat such as due to machine error.

1.4 Scope

(a) Module to be developed

Milk Production Management

To track the milk produced per goat per month or per annum and data collected can be generated into table analysis to give an overview of milk yield performance.

Staff Management

Track the person in charge of each task performed (feeding, milk collection et cetera) to identify personnel problem.

Feeding Management

Track the nutrition intake of each goat and identify problem such as deficiency to aid in feeding plan. Necessary feed intake in each growth stage (lactation, pregnancy) is important for the supply of high quality proteins in goat's milk.

(b) Target User

Administrator – Goat and farmer data management

Supervisor – View data report and feeding planning

Veterinarian – View goat's health status

Farmer – Goat's location, add feeding record, add milk collection record, and view recent feeding record

1.5 Project Significance

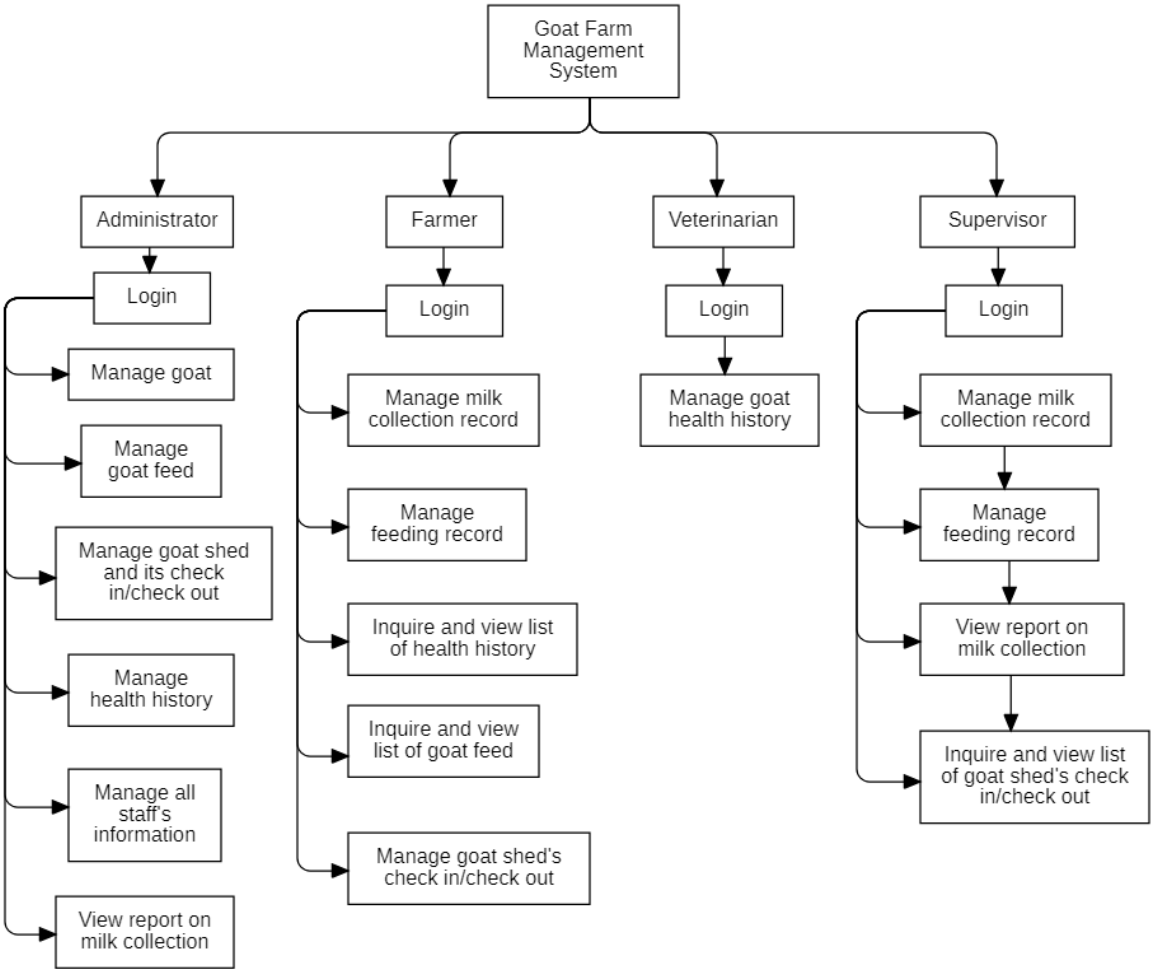
- The introduction of an all-in-one computerized system allows data analysis from a wider perspective with more data, which makes it easier to identify problems in production processes.
- Manual record keeping is often tedious work, hence the computerize system could saves time on record keeping and data analysis which will free up employee for other tasks and saves personnel cost.
- Through data analysis, we may have a predictive model, which allow preventive action especially during crisis.

Chapter 2 – Analysis of Problem

2.1 Problem Decomposition Description

- The exact milk production record may be unclear due to human mistake in manual keeping record or calculation error.
- Goat's feed intake may not according to their nutritional needs at each stage and susceptible to common diseases. The goat kids may also born underweight.
- Production error is difficult to be detected due to unreliable manual record and difficulty in data analyzation.

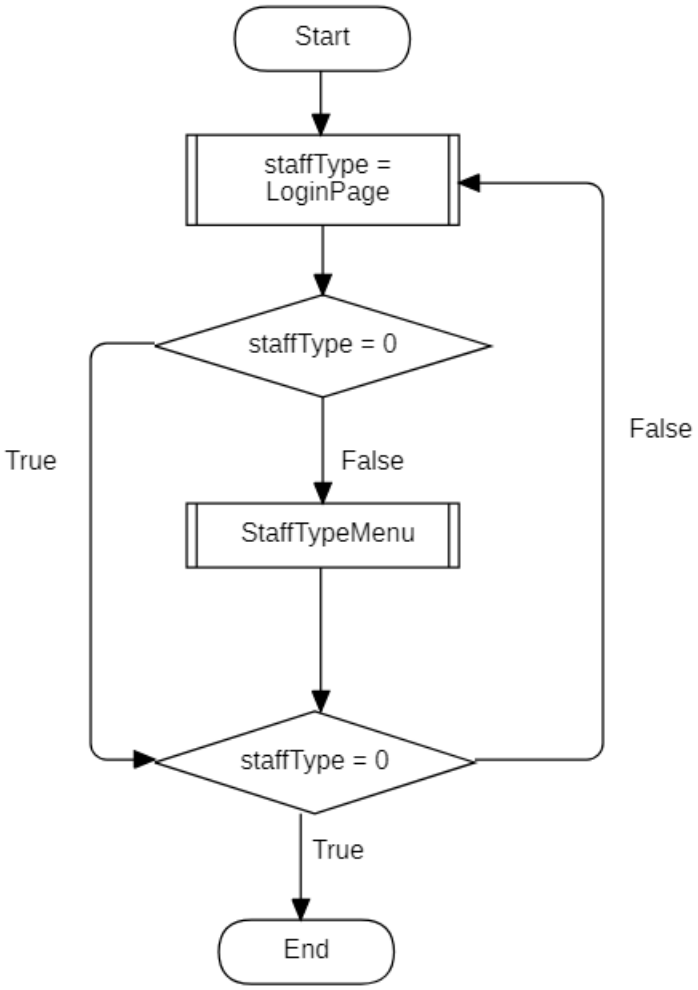
2.2 Structure Chart



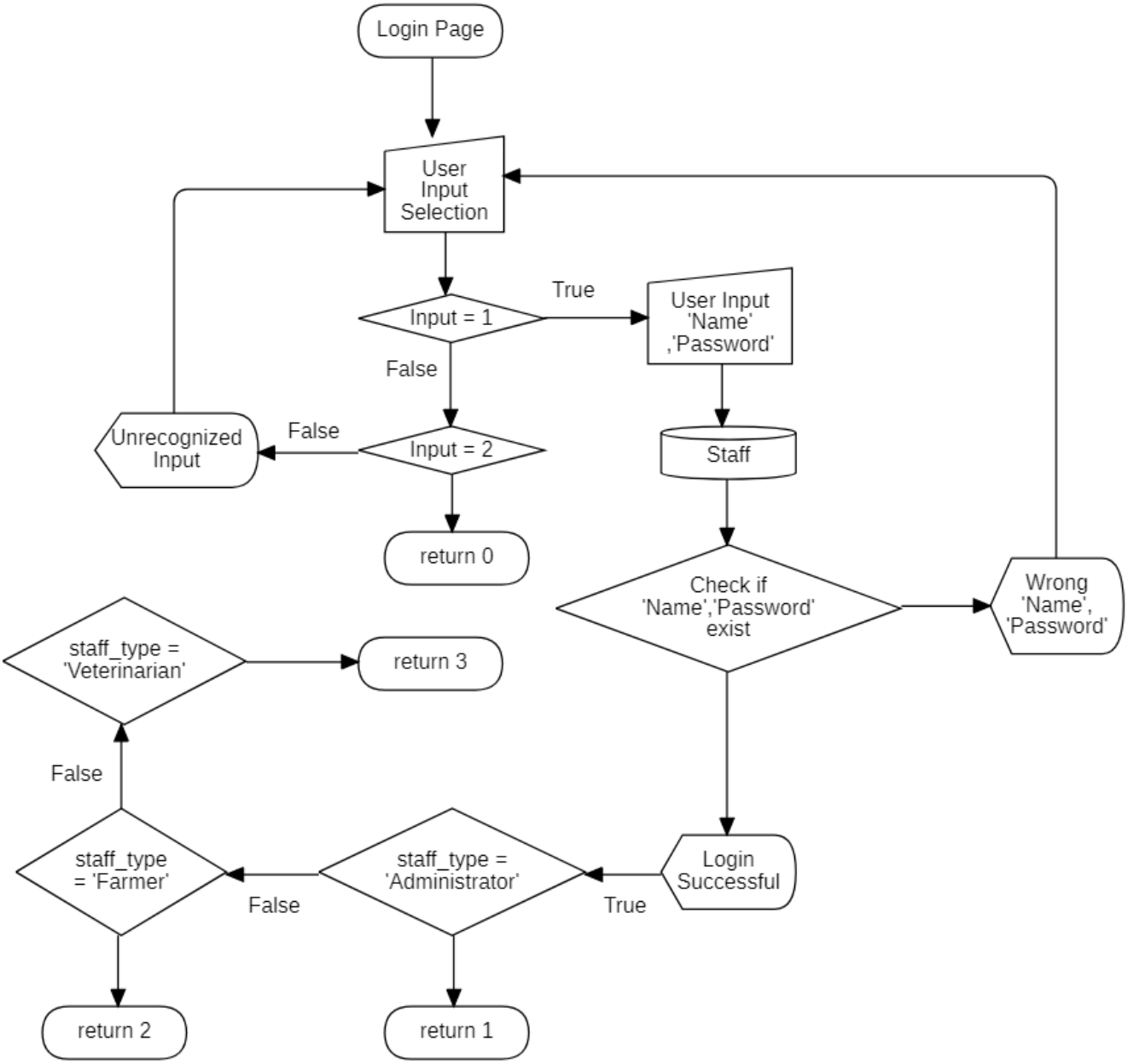
Chapter 3 – Design

3.1 Flowchart

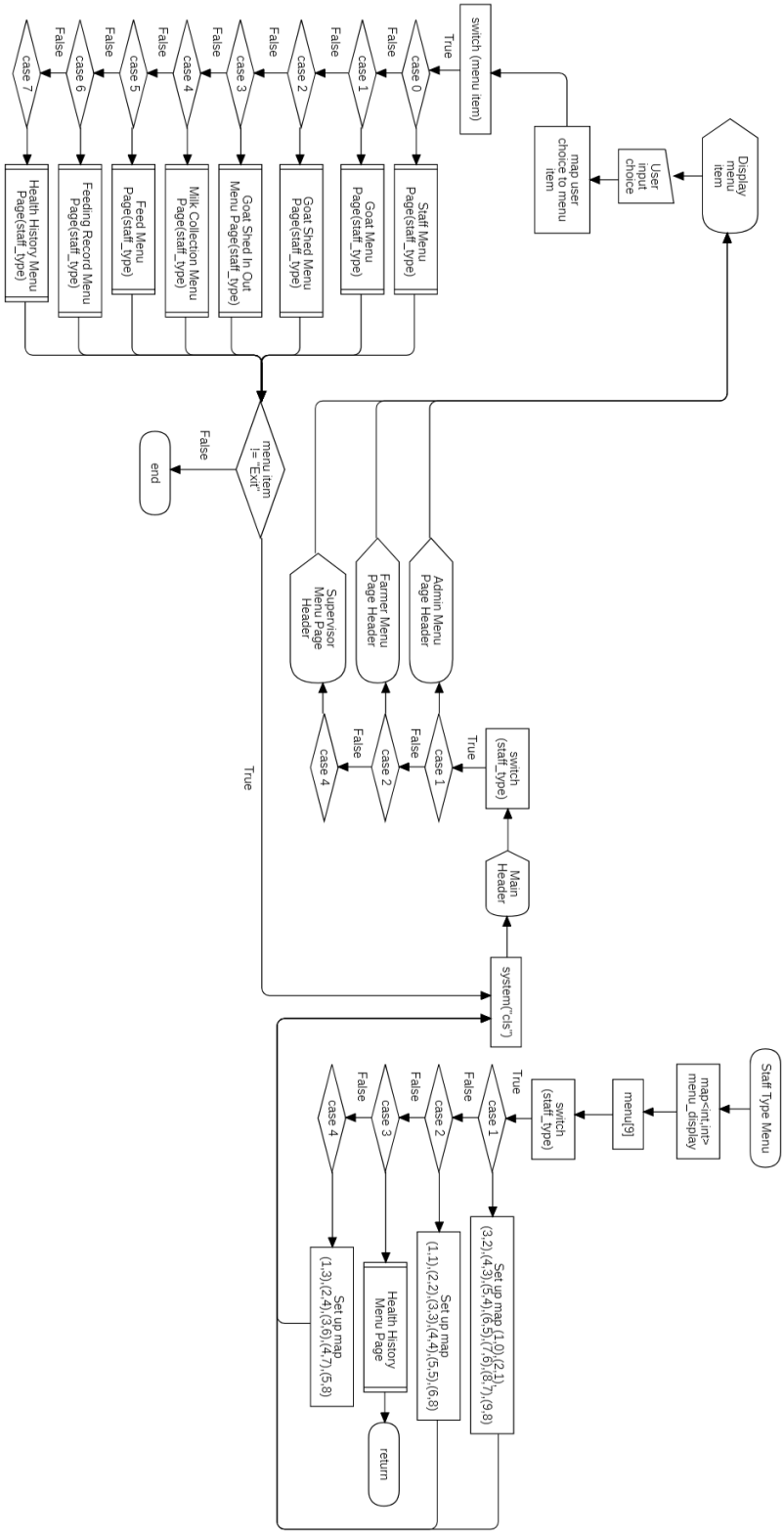
3.1.1 Main Program



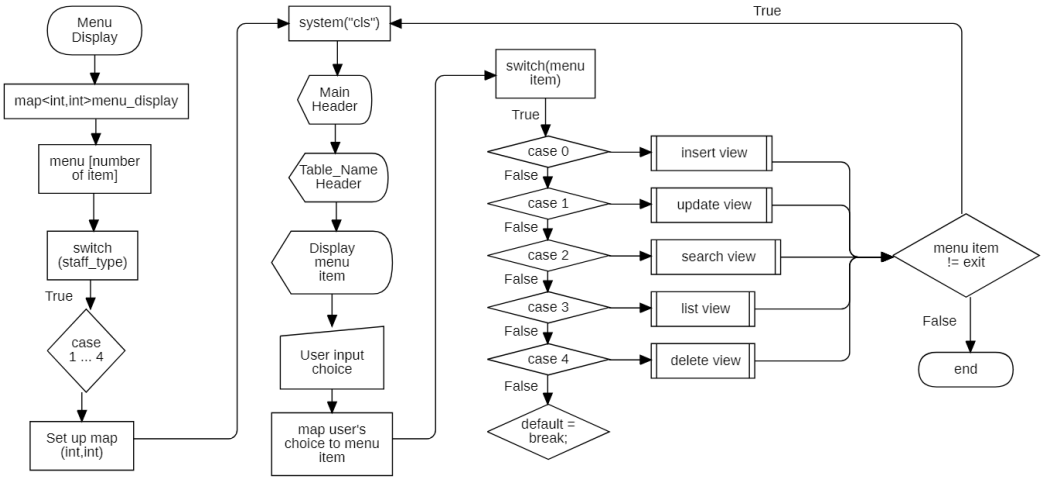
3.1.2 Login Page



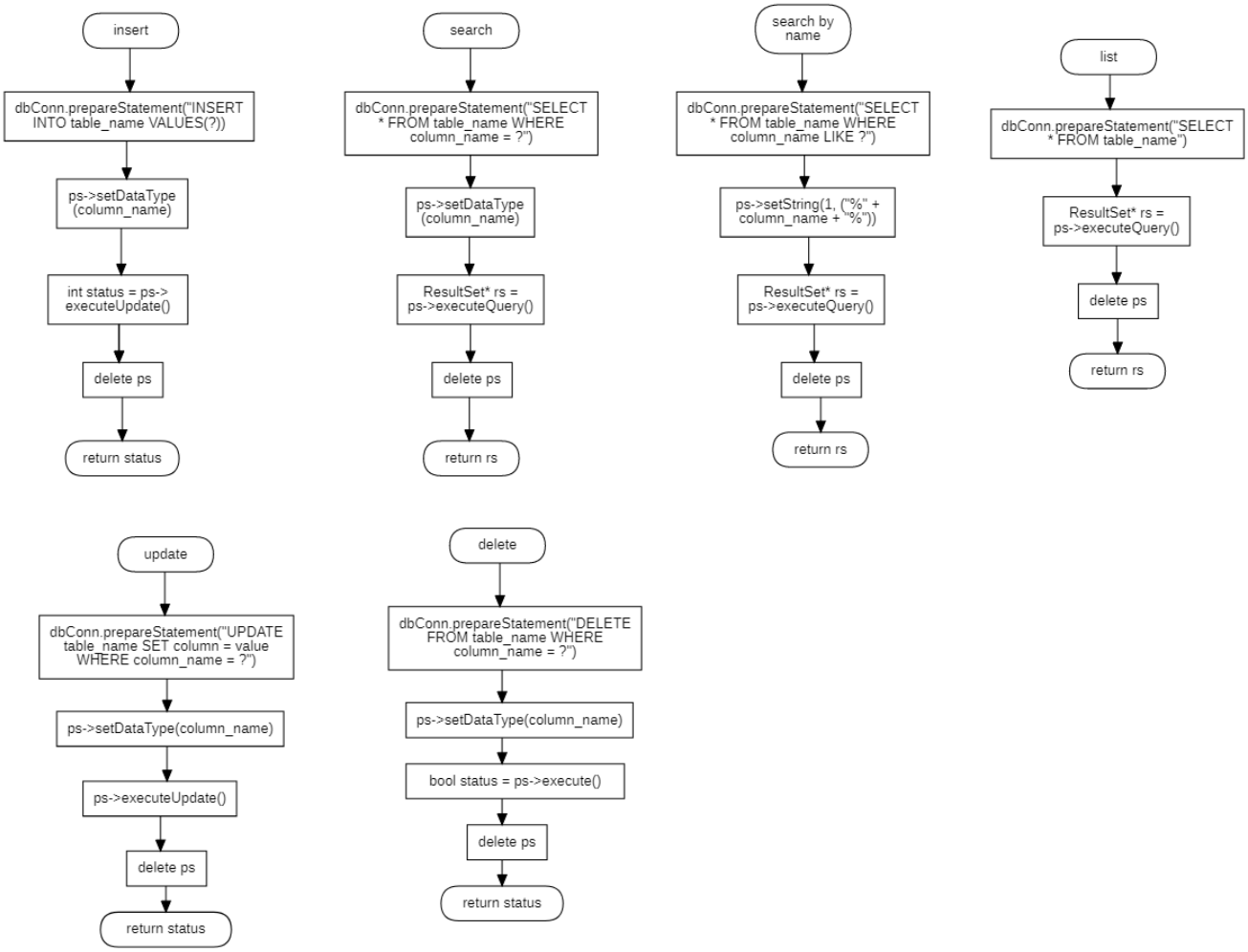
3.1.3 Staff Type Menu



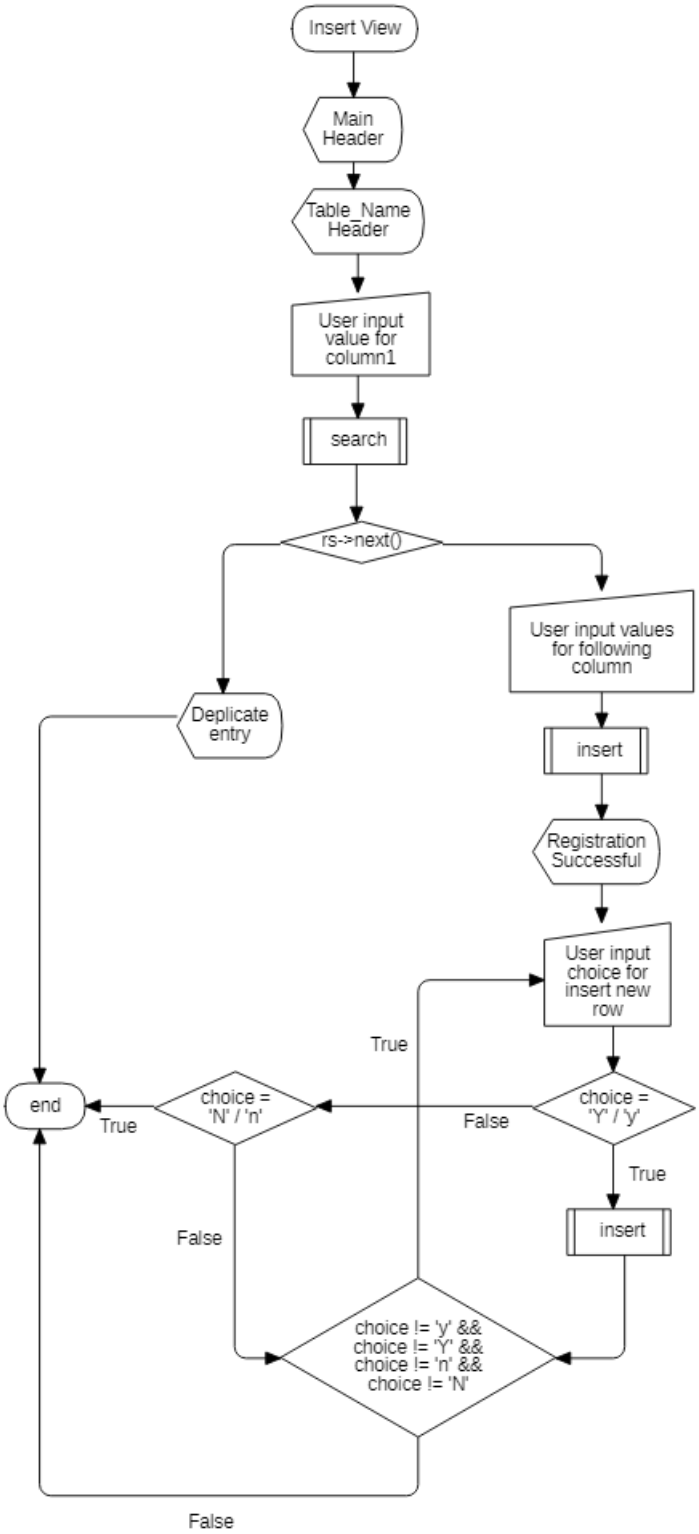
3.1.4 Menu Display



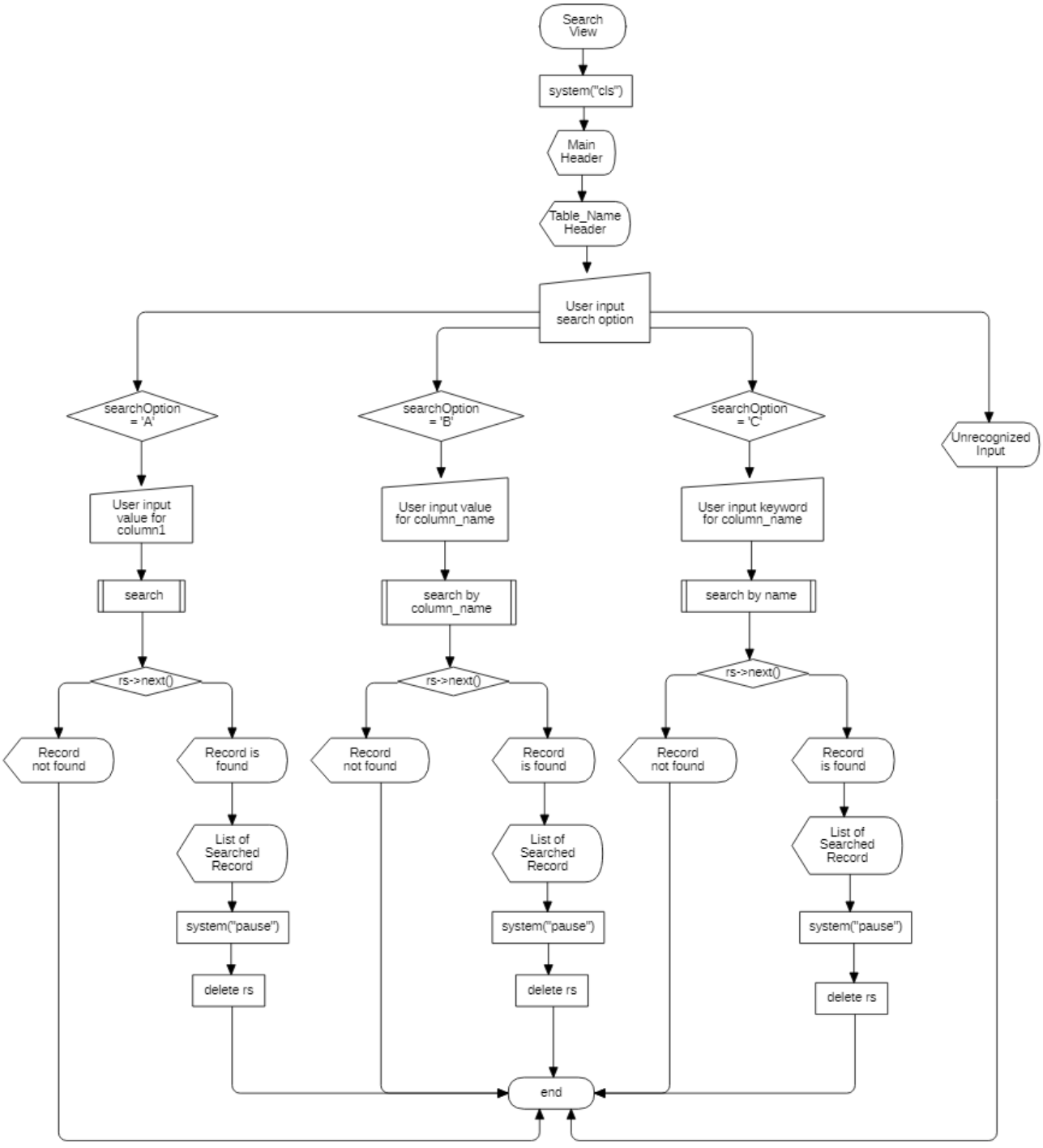
3.1.5 Class Manager



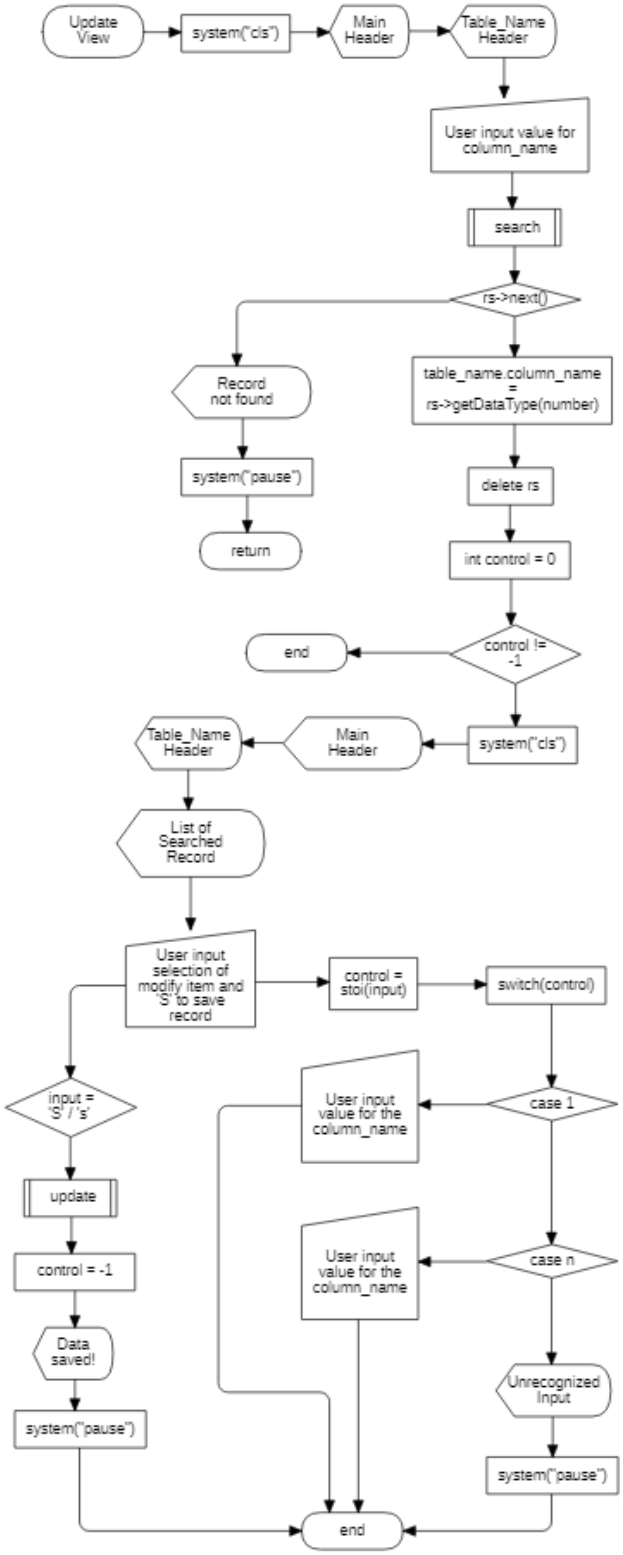
3.1.6 Screen Class – Insert View



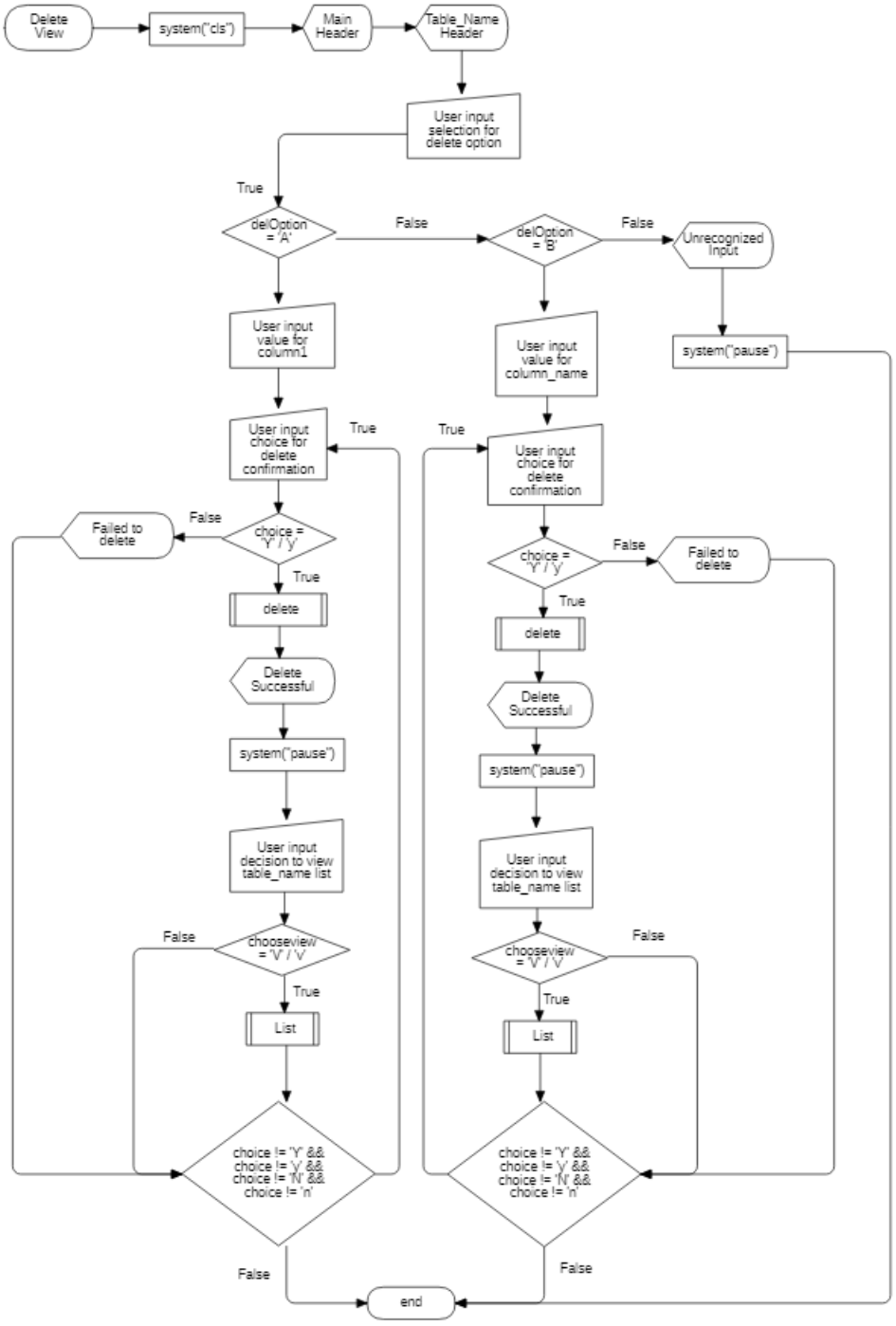
3.1.7 Screen Class – Search View



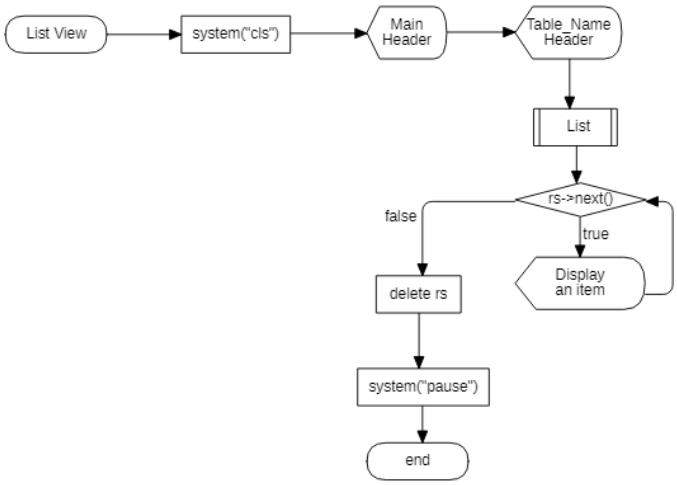
3.1.8 Screen Class – Update View



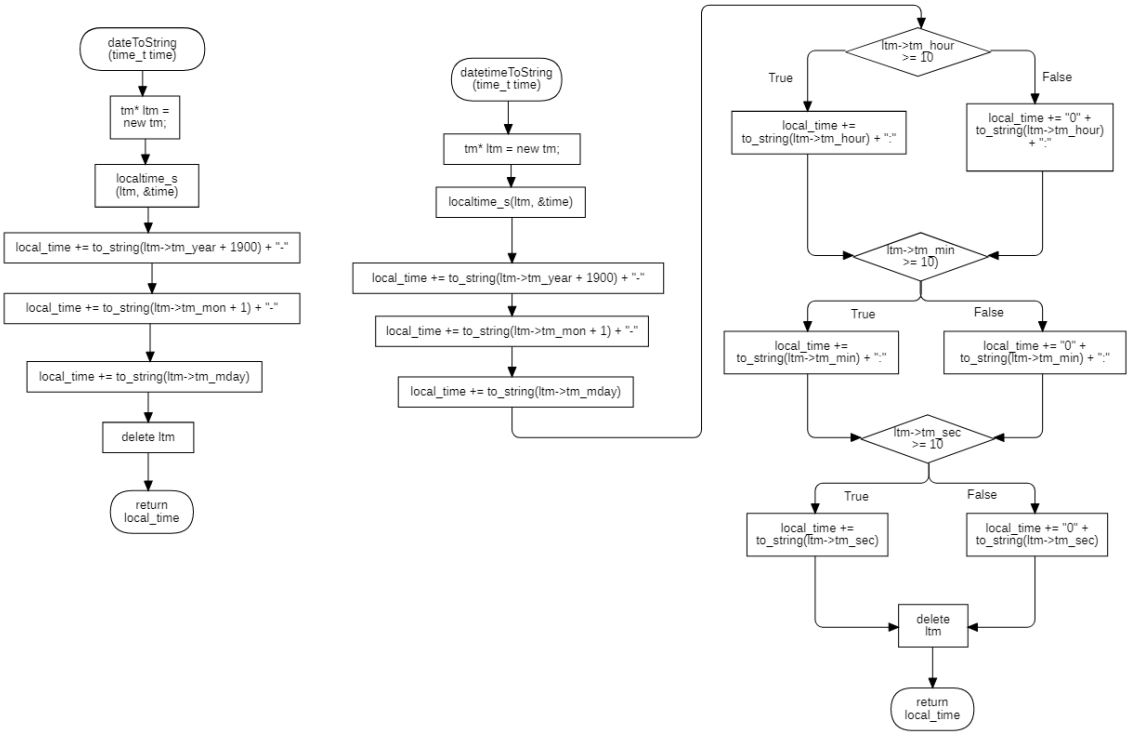
3.1.9 Screen Class – Delete View

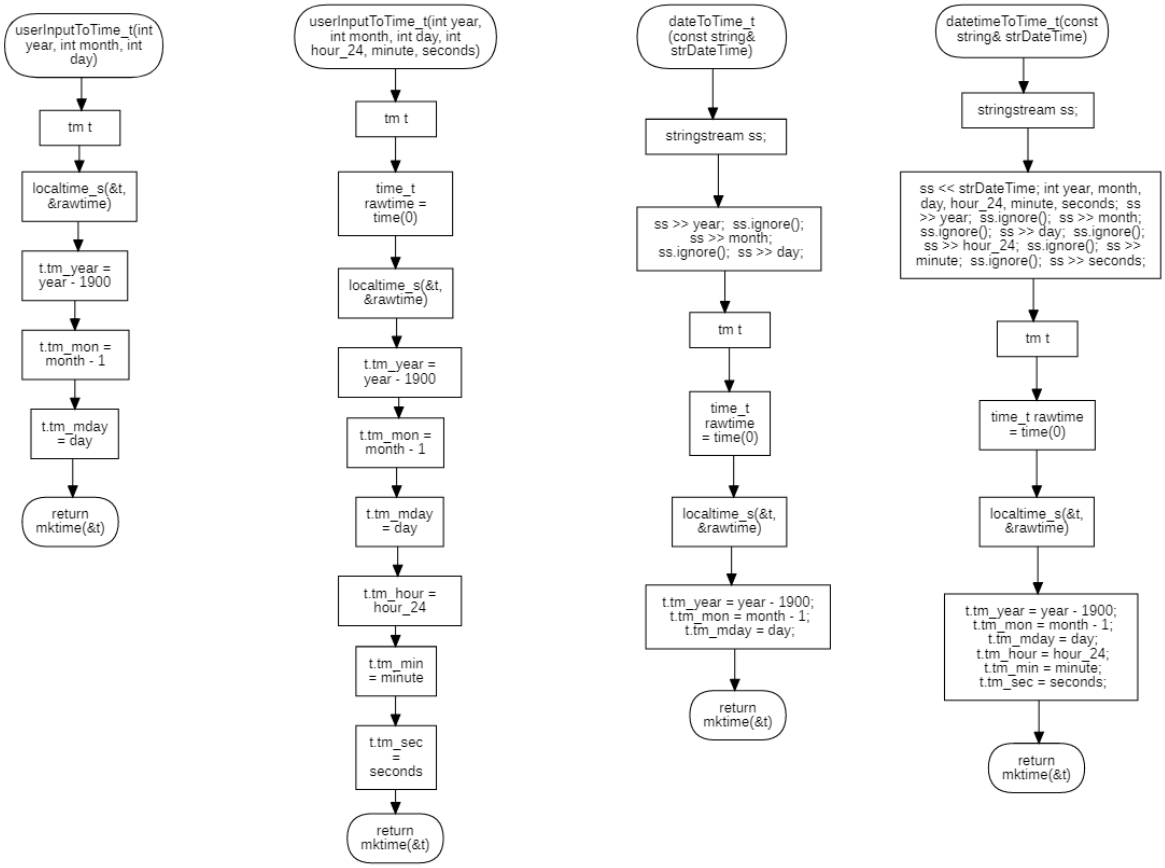


3.1.10 Screen Class – List View

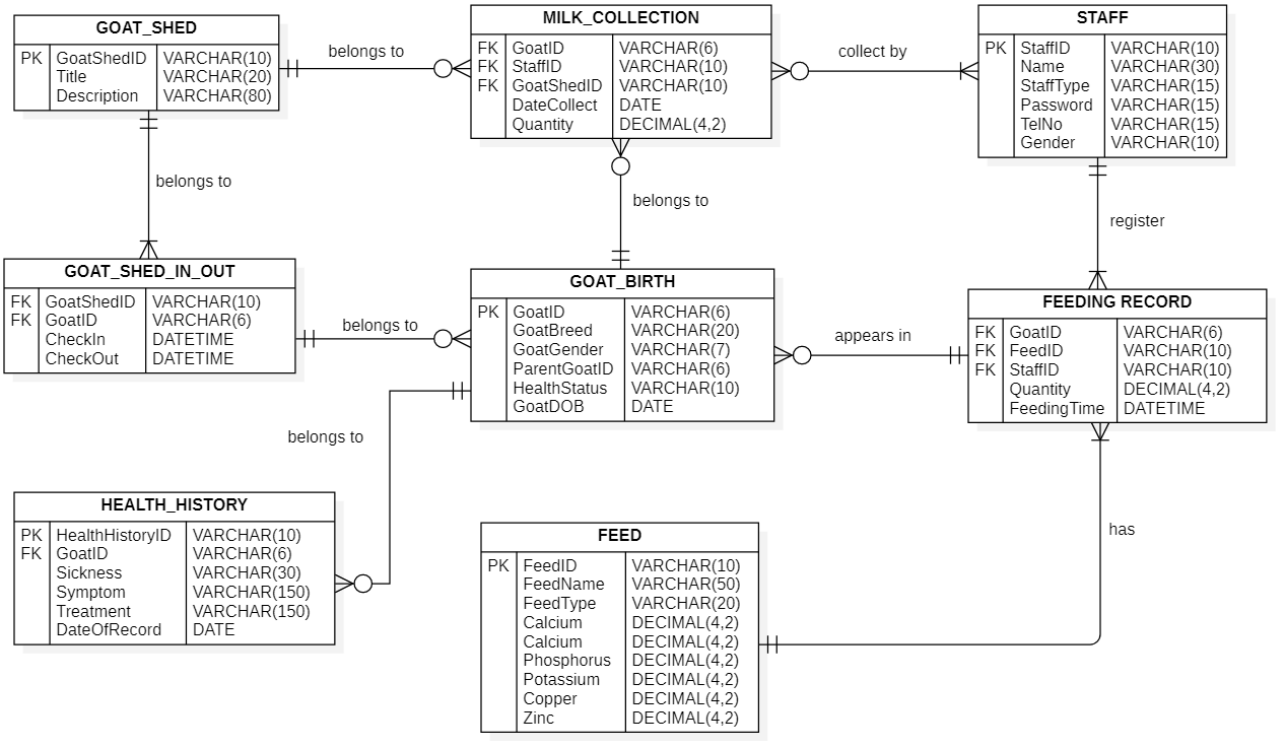


3.1.11 Time Utility




userInputToTime_t(int year, int month, int day)
tm t
localtime_s(&t, &rawtime)
t.tm_year = year - 1900
t.tm_mon = month - 1
t.tm_mday = day
return mktime(&t)
userInputToTime_t(int year, int month, int day, int hour_24, minute, seconds)
tm t
time_t rawtime = time(0)
localtime_s(&t, &rawtime)
t.tm_year = year - 1900
t.tm_mon = month - 1
t.tm_mday = day
t.tm_hour = hour_24
t.tm_min = minute
t.tm_sec = seconds
return mktime(&t)
dateToTime_t (const string& strDateTime)
stringstream ss;
ss >> year; ss.ignore(); ss >> month; ss.ignore(); ss >> day;
tm t
time_t rawtime = time(0)
localtime_s(&t, &rawtime)
t.tm_year = year - 1900; t.tm_mon = month - 1; t.tm_mday = day;
return mktime(&t)
datetimeToTime_t(const string& strDateTime)
stringstream ss;
ss << strDateTime; int year, month, day, hour_24, minute, seconds; ss >> year; ss.ignore(); ss >> month; ss.ignore(); ss >> day; ss.ignore(); ss >> hour_24; ss.ignore(); ss >> minute; ss.ignore(); ss >> seconds;
tm t
time_t rawtime = time(0)
localtime_s(&t, &rawtime)
t.tm_year = year - 1900; t.tm_mon = month - 1; t.tm_mday = day; t.tm_hour = hour_24; t.tm_min = minute; t.tm_sec = seconds;
return mktime(&t)

3.2 ERD


GOAT_SHED
PK GoatShedID VARCHAR(10)
Title VARCHAR(20)
Description VARCHAR(80)
belongs to
MILK_COLLECTION
FK GoatID VARCHAR(6)
FK StaffID VARCHAR(10)
FK GoatShedID VARCHAR(10)
DateCollect DATE
Quantity DECIMAL(4,2)
collect by
STAFF
PK StaffID VARCHAR(10)
Name VARCHAR(30)
StaffType VARCHAR(15)
Password VARCHAR(15)
TelNo VARCHAR(15)
Gender VARCHAR(10)
belongs to
belongs to
register
GOAT_SHED_IN_OUT
FK GoatShedID VARCHAR(10)
FK GoatID VARCHAR(6)
CheckIn DATETIME
CheckOut DATETIME
belongs to
GOAT_BIRTH
PK GoatID VARCHAR(6)
GoatBreed VARCHAR(20)
GoatGender VARCHAR(7)
ParentGoatID VARCHAR(6)
HealthStatus VARCHAR(10)
GoatDOB DATE
appears in
FEEDING RECORD
FK GoatID VARCHAR(6)
FK FeedID VARCHAR(10)
FK StaffID VARCHAR(10)
Quantity DECIMAL(4,2)
FeedingTime DATETIME
belongs to
has
HEALTH_HISTORY
PK HealthHistoryID VARCHAR(10)
FK GoatID VARCHAR(6)
Sickness VARCHAR(30)
Symptom VARCHAR(150)
Treatment VARCHAR(150)
DateOfRecord DATE
FEED
PK FeedID VARCHAR(10)
FeedName VARCHAR(50)
FeedType VARCHAR(20)
Calcium DECIMAL(4,2)
Calcium DECIMAL(4,2)
Phosphorus DECIMAL(4,2)
Potassium DECIMAL(4,2)
Copper DECIMAL(4,2)
Zinc DECIMAL(4,2)

3.3 Data Dictionary

Data Dictionary

Goat Farm Management System

FEED

Attribute Name	Contents	Data Type And Size	Format	Range	Requirement?	Default Value	Unique?	PK or FK	FK Reference Table
FeedID	Goat Feed's identification number	varchar(10)	GF###	NA	Yes			PK	
FeedName	Feed Name	varchar(50)	XXXXXXXXXX	NA	Yes				
FeedType	Feed Type	varchar(20)	XXXXXXXXXX	NA	Yes				
Calcium	Calcium content	decimal(4,2)	##.##	NA	No				
Phosphorus	Phosphorus content	decimal(4,2)	##.##	NA	No				
Potassium	Potassium content	decimal(4,2)	##.##	NA	No				
Copper	Copper content	decimal(4,2)	##.##	NA	No				
Zinc	Zinc content	decimal(4,2)	##.##	NA	No				

FEEDING RECORD

Attribute Name	Contents	Data Type and Size	Format	Range	Requirement?	Default value	Unique?	PK or FK	FK Reference Table
GoatID	Goat's identification number	varchar(6)	XX-####-##	NA	Yes			FK	Goat Birth
FeedID	Goat Feed's identification number	varchar(10)	GF###	NA	Yes			FK	Feed
StaffID	Staff's identification number	varchar(10)	X##-#####X	NA	Yes			FK	Staff
Quantity	Feeding quantity for goat	decimal(4,2)	##.##	NA	Yes				
FeedingTime	Feeding time for goat	datetime	YYYY-MM-DD HH:MI:SS	NA	Yes				

GOAT BIRTH

Attribute Name	Contents	Data Type and Size	Format	Range	Requirement?	Default value	Unique?	PK or FK	FK Reference Table
GoatID	Goat's identification number	varchar(6)	XX-####-##	NA	Yes			PK	
GoatBreed	Goat breed	varchar(10)	XXXXXXXXX	NA	Yes				
GoatGender	Goat's gender	varchar(10)	Nanny / Billy	NA	Yes				
ParentGoatID	Feeding quantity for goat	decimal(4,2)	##.##	NA	Yes				
HealthStatus	Feeding time for goat	varchar(10)	healthy / die / sick	NA	Yes				
GoatDOB	Goat's date of birth	date	YYYY-MM-DD	NA	Yes				

GOAT SHED

Attribute Name	Contents	Data Type and Size	Format	Range	Requirement?	Default value	Unique?	PK or FK	FK Reference Table
GoatShedID	Goat shed's identification number	varchar(10)	GS###	NA	Yes			PK	
Title	Goat shed's title	varchar(20)	XXXXXXXXX	NA	Yes				
Description	Goat shed's description	varchar(80)	XXXXXXXXX	NA	Yes				

GOAT SHED IN OUT

Attribute Name	Contents	Data Type and Size	Format	Range	Requirement?	Default value	Unique?	PK or FK	FK Reference Table
GoatShedID	Goat shed's identification number	varchar(10)	GS###	NA	Yes			FK	Goat Shed
GoatID	Goat's identifiation number	varchar(6)	XX-####-##	NA	Yes			FK	Goat Birth
CheckIn	Goat's checked in time	datetime	YYYY-MM-DD HH:MI:SS	NA	No				
CheckOut	Goat's checked out time	datetime	YYYY-MM-DD HH:MI:SS	NA	No				

HEALTH HISTORY

Attribute Name	Contents	Data Type and Size	Format	Range	Requirement?	Default value	Unique?	PK or FK	FK Reference Table
HealthHistoryID	Health record's identification number	varchar(10)	HH-XX-###	NA	Yes			PK	
GoatID	Goat's identification number	varchar(6)	XX-####-##	NA	Yes			FK	Goat Birth
Sickness	Goat's sickness	varchar(30)	XXXXXXXXX	NA	Yes				
Symptom	Symptoms of disease	varchar(150)	XXXXXXXXX	NA	Yes				
Treatment	Feeding time for goat	varchar(150)	XXXXXXXXX	NA	Yes				
DateOfRecord	Goat's date of birth	date	YYYY-MM-DD	NA	Yes				

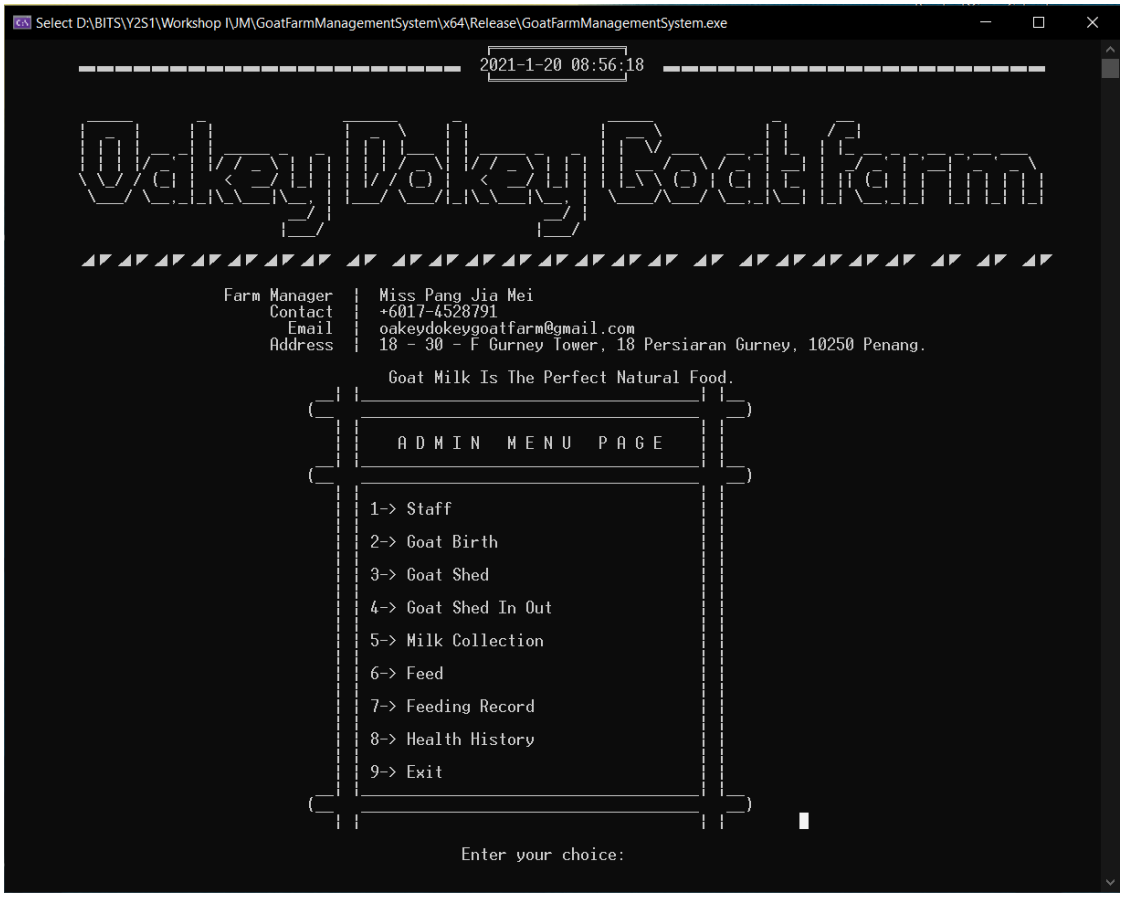
MILK COLLECTION

Attribute Name	Contents	Data Type and Size	Format	Range	Requirement?	Default value	Unique?	PK or FK	FK Reference Table
GoatID	Goat's identification number	varchar(6)	XX-####-##	NA	Yes			FK	Goat Birth
StaffID	Staff's identification number	varchar(10)	X##-#####X	NA	Yes			FK	Staff
GoatShedID	Goat shed's identification number	varchar(10)	GS###	NA	Yes			FK	Goat Shed
DateCollect	Date collection of goat milk	datetime	YYYY-MM-DD	NA	Yes				
Quantity	Milk yield	decimal(4,2)	##.##	NA	Yes				

STAFF

Attribute Name	Contents	Data Type and Size	Format	Range	Requirement?	Default value	Unique?	PK or FK	FK Reference Table
StaffID	Staff's identification number	varchar(10)	XX-####-##	NA	Yes			PK	
Name	Staff's name	varchar(30)	XXXXXXXXX	NA	Yes				
StaffType	Staff's type	varchar(15)	XXXXXXXXX	NA	Yes				
Password	Staff's log in password	varchar(15)	XXXXXXXXX	NA	Yes				
TelNo	Staff's contact number	decimal(4,2)	###-#######	NA	Yes				
Gender	Staff's gender	varchar(10)	Female / Male	NA	Yes				

3.4 Interface Design

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2021-1-20 08:57:48
Farm Manager | Miss Pang Jia Mei
Contact | +6017-4528791
Email | oakeydokeygoatfarm@gmail.com
Address | 18 - 30 - F Gurney Tower, 18 Persiaran Gurney, 10250 Penang.
Goat Milk Is The Perfect Natural Food.
GOAT BIRTH MENU PAGE
1-> Register New Goat
2-> Modify Goat Details
3-> Search Goat Detail
4-> View Goats List
5-> Delete Goat Detail
6-> Back to Main Page
Enter your choice:

Chapter 4 – Conclusion

4.1 Constraint

- There are many repeated codes for each function
- User interface may not pleasant looking
- Did not actually check SQL query is successful executed

4.2 Future Improvement

- Archive old data – Maintaining history of time-variant data

  "How do the current milk production compare to those of previous years?"

  "What are milk production of goat shed's trends?"

- Report on graph analysis
- Default generate current timestamp, identification number

Chapter 5 – Bibliography

1. MySQL :: MySQL Connector/C++ 8.0 Developer Guide
   Dev.mysql.com: https://dev.mysql.com/doc/connector-cpp/8.0/en/

2. Malik, D. S. (2011). C++ Programming: From Problem Analysis to Program Design (MindTap Course List) (8th ed., Vol. 1) [E-book]. Cengage Learning. http://index-of.co.uk/Programming/C++%20Programming%20From%20Problem%20Analysis%20to%20Program%20Design%20-%20D.%20S.%20Malik%20-%202011.pdf