

Level 1 DFD

PROCESSES

Process	Description	Inbound Data Flows	Outbound Data Flows
1.0 Login/Signup	Existing user logs in. New user who is a resident must fill out the details of the owner and those of the dependents. He/She must also fill a special apartment authentication key approved by the maintenance office in order to avoid random signups.	Login/Signup Details	Login/Signup Valid/Invalid
2.0 Maintenance Bill Payment	Sending monthly maintenance bill payment and receiving a payment receipt from accounts office	Maintenance bill issued by maintenance office, bill payment by the resident, receipt from accounts office	Bill to the resident, payment to the accounts office, receipt to the resident
3.0 Complaint Management System	Registration, response and status updation of complaints.	Complaint registration by residents, response by maintenance office	Complaint registration, complaint response to the resident
4.0 Salary payment	After the salary is paid to all the employees, the account office issues an receipt for it and salary status of each employee is updated in the employee database	Employee salary receipt	Details updated in the database
5.0 Outsider management system	An outsider can be either a person physically coming over to the society or any individual surfing the website who may be interested in buying a property in the society. If there is any visitor/guest in the society, his/her details are recorded in the visitor database for entry/exit parameters for security purposes. For non-registered users of this system, there will be an option to request a list of apartments on sale.	Vistor details, residency request	Response in form of vacant apartment lists

Level 2 DFD

PROCESSES

Process	Description	Inbound Data Flows	Outbound Data Flows
1.1 Signup	New Resident signs up using details of the owner and of the dependents(family members). One can signup only when he has apartment authentication key authorised by the maintenance office so that only residents can signup	Sign up details	Signup valid/invalid
1.2 Login	Existing user login	Login credentials	Valid/invalid response
1.3 Password reset	Incase an existing user forgots the password required for logging, he/she may reset the password using this process	Password reset request	Password reset link

S.No.	Data Flow Name	description	From Process	To Process	Data Structures
1.	Login/SignUp	The Details entered by the user in order to Sign Up or Login into the system		Login/Signup System	Login details, Signup details
2.	Insert when Signed Up	The Details entered by the resident when he/she has signed up in the system	Login/Signup System		Sign Up details
3.	Valid/Invalid as login Response	The System sends response to the user trying to login in the system	Login/Signup System		Login details
4.	Maintenance Bill	The copy of the bill sent by the Maintenance office to the Resident.	Maintennce Bill Payment System	Maintennce Bill Payment System	Bill Details
5.	Maintenance Bill Payment	The money paid by the resident to the account office through the system.	Maintennce Bill Payment System	Maintennce Bill Payment System	Bill Details
6.	Maintenance Bill Receipt	The copy of the receipt sent by the accounts department to the resident .	Maintennce Bill Payment System	Maintennce Bill Payment System	Bill Receipt
7.	Bill Details	The details of the bill issued to the resident	Maintennce Bill Payment System		Bill details
8.	Complaint Registration	The details of the compaint entered by the resident		Complaint Management System	Complaint Details
9.	Complaint	The details of the complaint registered that is forwarded to the Maintenace office	Complaint Management System		Complaint Details
10.	Complaint Response	The response details given by the maintenace office for the compalint registered	Complaint Management System	Complaint Management System	Complaint response
11.	Complaint Response Updated	The status of the complaint response stored in the complaint database	Complaint Management System		Complaint response
12.	Employee salary Receipt	The receipt of the Salary paid by the Accounts Department		Salary Payment System	Employee salary receipt
13.	Salary Payment Update	The Status of the paymentof the Salary to be updated in the employee database	Complaint Management System		Employee Details,Employee Salary Receipt
14.	Vistor Details	The Details of the people who visited the Society	Outsider Management System	Outsider Management System	Visitor details
15.	Residency Request	The Request for the Details of the of Vacant Apartments	Outsider Management System	Outsider Management System	Apartment details
16.	Vacant Apartment List	The list of the details of the available apartment from apartment database		Outsider Management System	Apartment details
17.	Response	The list of the available Apartments	Outsider Management System		Apartment details

# DATA STRUCTURES

## 1. Resident (owner) details

- Username
- Password
- Name
- Resident ID
- Apartment No.
- Contact no.
- Email

## 2. Resident (dependents) details

- Name
- Resident ID (owner)
- Apartment no.
- Contact no.
- Email

## 3. Login details

- Username
- Password

## 4. Sign Up details

- Resident Details (Owner)
- Resident Details (Dependents)
- Apartment Details

## 5. Bill details

- Bill number
- Bill amount
- Issue date
- Paid Date
- Apartment no.
- Owner's resident ID

## 6. Bill Receipt

- Paid date
- Bill amount
- Owner's resident ID
- Bill number

## 7. Complaint details

- Complaint no.
- Description
- Complaint Date
- Complaint status
- Resident ID

## 8. Complaint response

- Complaint no.
- Complaint status

## 9. Employee Details

- Employee ID
- Name
- Salary Amount
- Salary Status
- Contact no.
- Job description

## 10. Employee Salary Receipt

- Salary Amount
- Employee ID
- Name

## 11. Apartment details

- Apartment no.
- Resident ID
- Size
- Vacant or not

## 12. Visitor details

- Name
- Arrival date and time
- Exit date and time
- Resident ID
- Contact

Data Store

Residents(Owners) DB

Field Name	Type	Constraints	Description
Username	varchar(10)	NOT-NULL	Username for authentication
Password	varchar(15)	NOT-NULL	Password for authentication
Name	varchar(25)	NOT-NULL	Name of the resident
Resident ID	varchar(10)	PRIMARY KEY	Unique identification
Apartment no.	varchar(10)	FOREIGN KEY	Resident's apartment number
Contact Number	varchar(15)	NOT-NULL	Contact number of the resident
Email	varchar(30)	NULL	Email address of the resident

Residents(Dependents) DB

Field Name	Type	Constraints	Description
Name	varchar(25)	NOT-NULL	Name of the resident
Resident ID	varchar(10)	FOREIGN KEY	Resident ID of the owner
Apartment no.	varchar(10)	FOREIGN KEY	Resident's apartment number
Phone Number	varchar(15)	NOT-NULL	Contact number of the resident
Email	varchar(30)	NULL	Email address of the resident

BILL DATABASE

Field Name	Type	Constraints	Description
Bill number	varchar(10)	PRIMARY KEY	Unique identification for the bill
Bill amount	varchar(15)	NOT-NULL	Amount paid including penalties
Issue Date	DATE	NOT-NULL	Date when the bill is issued
Paid Date	DATE	NOT-NULL	Date of the bill payment
Apartment no.	varchar(10)	FOREIGN KEY	Resident's apartment number
Owner's Resident ID	varchar(11)	FOREIGN KEY	Contact number of the resident

Employee Database

Field Name	Type	Constraints	Description
Employee ID	varchar(10)	PRIMARY KEY	Unique identification for the employee
Name	varchar(15)	NOT-NULL	Name of the employee
Salary Amount	varchar(10)	NOT-NULL	Salary of the employee
Salary status	varchar(10)	NOT-NULL	Payement status of the salary
Contact Number	varchar(15)	NOT-NULL	Employee's contact number
Job Description	varchar(30)	NOT-NULL	Job of the employee

COMPLAINT DATABASE

Field Name	Type	Constraints	Description
Complaint Number	varchar(10)	PRIMARY KEY	Unique identification number for the complaint
Complaint Description	varchar(150)	NOT-NULL	Description of the complaint registered
Complaint Date	DATE	NOT-NULL	Date when the complaint was filed
Complaint Status	varchar(15)	NOT-NULL	Current status of the complaint
Resident ID	varchar(10)	FOREIGN KEY	Resident's unique ID

APARTMENT DATABASE

Field Name	Type	Constraints	Description
Apartment Number	varchar(10)	PRIMARY KEY	Unique identification number for the Apartment
Resident ID	varchar(10)	FOREIGN KEY	Resident ID of the owner
Size	varchar(15)	NOT-NULL	Size description of the Apartment
No. of dependents	varchar(15)	NULL	Number of the living in the Apartment
Vacant	varchar(10)	NOT-NULL	Availability Status of the Apartment

VISITOR DATABASE

Field Name	Type	Constraints	Description
Visitor name	varchar(30)	NOT-NULL	Name of the person visiting
Arrival time/date	DateTime	NOT-NULL	Arrival date and time of visitor
Exit time/date	DateTime	NOT-NULL	Date and time of exit of the visitor
Resident ID	varchar(10)	FOREIGN KEY	Resident's unique ID
Contact	varchar(15)	NOT-NULL	Contact number of the visitor