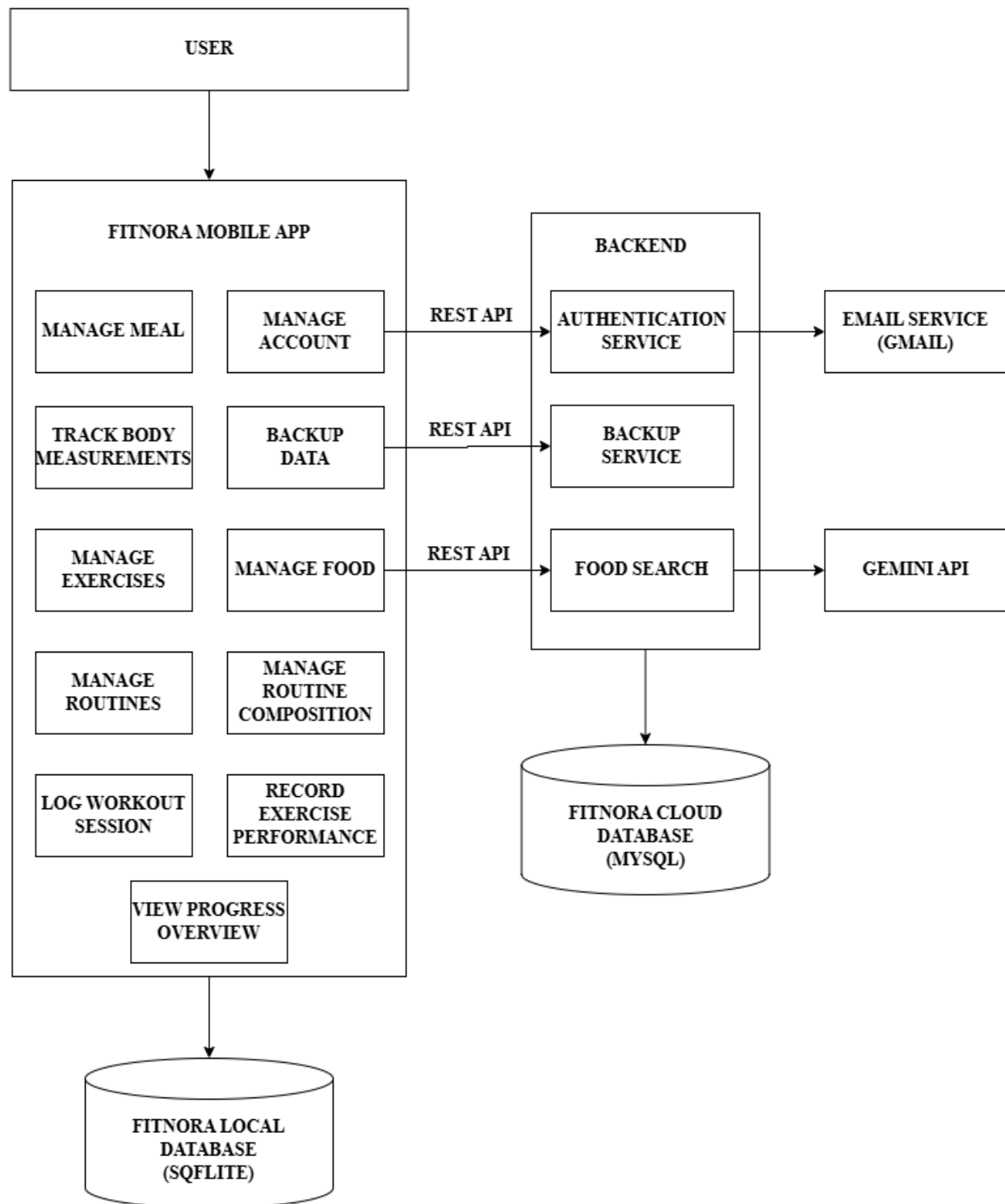


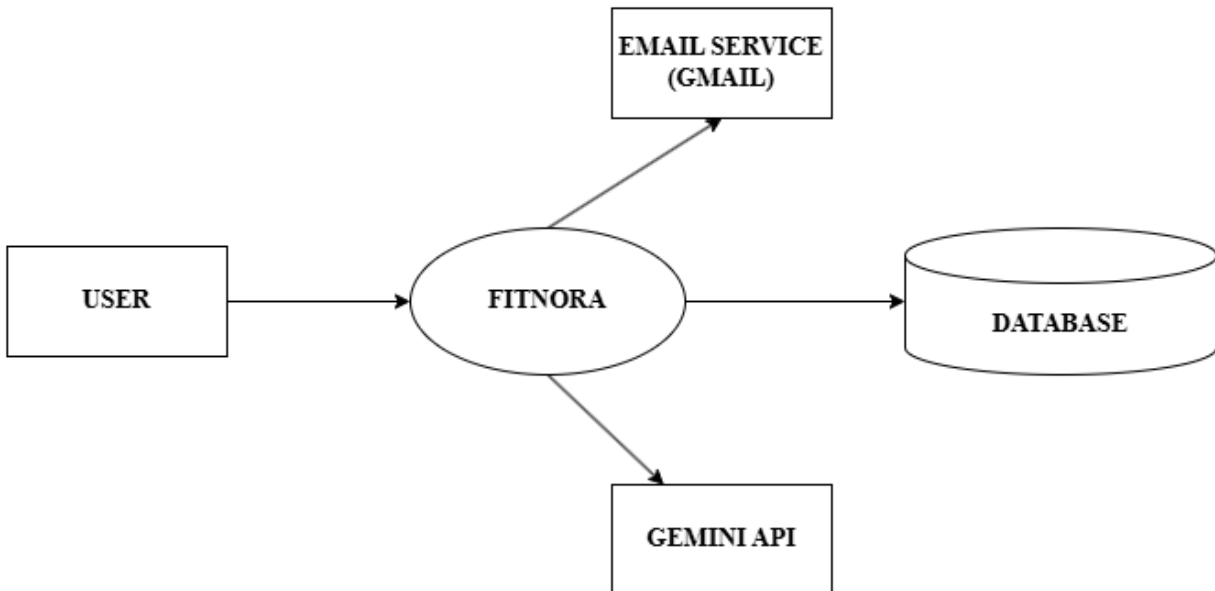
## 4. SYSTEM DESIGN

### 4.1 ARCHITECTURAL DESIGN



## 4.2 DATA FLOW DIAGRAM

DFD Level 0:



DFD Level 1:



### 4.3 DATA DICTIONARY

**Table name:** users

**Purpose:** To store the details of the user

S. No.	Field Name	Data Type	Constraint	Description
1	user_id	Integer	Primary Key, Auto Increment	User unique id
2	user_email	Varchar (255)	Not Null, Unique	User email
3	user_fullname	Varchar (100)	Not Null	User full name
4	user_dob	Date	Not Null	User date of birth
5	password_hash	Text	Not Null	User hashed password
6	gender	Varchar (20)	Not Null	User gender
7	backup_enabled	Boolean	Not Null, Default	Is backup enabled
8	updated_at	Timestamp	Not Null, Default	Record updated timestamp

**Table name:** data\_backup

**Purpose:** To store the backup files

S. No.	Field Name	Data Type	Constraint	Description
1	data_backup_id	Integer	Primary Key, Auto Increment	Data backup unique id
2	user_id	Integer	Foreign Key, Cascade	User id from 'users'
3	user_dbfiles	Text	Not Null	Path for user's db files
4	user_images	Text	Not Null	Path for user's images
5	updated_at	Timestamp	Not Null, Default	Record updated timestamp

## Fitnora (A Smart Workout and Food Tracking App)

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**Table name:** exercises

**Purpose:** To store the exercises of the user

S. No.	Field Name	Data Type	Constraint	Description
1	exercise_id	Integer	Primary Key, Auto Increment	Exercise unique id
2	exercise_name	Text	Not Null, Unique	Exercise name
3	exercise_image	Text	Not Null	Exercise image
4	exercise_equipment	Text	Not Null	Used exercise equipment
5	exercise_mode	Text	Not Null	Reps or Timer
6	is_deleted	Integer	Not Null, Default	To soft delete exercise
7	updated_at	Integer	Not Null	Record updated timestamp

**Table name:** routines

**Purpose:** To store the routines of the user

S. No.	Field Name	Data Type	Constraint	Description
1	routine_id	Integer	Primary Key, Auto Increment	Routine unique id
2	routine_name	Text	Not Null, Unique	Routine name
3	is_deleted	Integer	Not Null, Default	To soft delete routine
4	updated_at	Integer	Not Null	Record updated timestamp

## Fitnora (A Smart Workout and Food Tracking App)

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**Table name:** routine\_exercises

**Purpose:** Used to map the exercises to routines

S. No.	Field Name	Data Type	Constraint	Description
1	routine_exercise_id	Integer	Primary Key, Auto Increment	Exercise unique id
2	routine_id	Integer	Foreign Key, On Delete Cascade	Routine id from 'routines'
3	exercise_id	Integer	Foreign Key, On Delete Cascade	Exercise id from 'exercises'
4	exercise_order	Integer	Not Null	Used to store the order of the exercises

**Table name:** sessions

**Purpose:** To store the workout sessions of the user

S. No.	Field Name	Data Type	Constraint	Description
1	session_id	Integer	Primary Key, Auto Increment	Session unique id
2	routine_id	Integer	Foreign Key, On Delete Cascade	Routine id from 'routines'
3	executed_date	Date	Not Null	Routine executed date
4	started_at	Integer	Not Null	Starting Time
5	ended_at	Integer	Not Null	Ending Time

## Fitnora (A Smart Workout and Food Tracking App)

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**Table name:** session\_exercises

**Purpose:** To store the session's exercises of the user

S. No.	Field Name	Data Type	Constraint	Description
1	session_exercise_id	Integer	Primary Key, Auto Increment	Session exercise unique id
2	session_id	Integer	Foreign Key, On Delete Cascade	Session id from 'sessions'
3	exercise_id	Integer	Foreign Key, On Delete Cascade	Exercise id from 'exercises'
4	exercise_order	Integer	Not Null	Exercise executed order

**Table name:** sessions\_sets

**Purpose:** To store the workout session's sets of the user

S. No.	Field Name	Data Type	Constraint	Description
1	set_id	Integer	Primary Key, Auto Increment	Set unique id
2	session_exercise_id	Integer	Foreign Key, On Delete Cascade	Session exercise id
3	reps	Integer	-	Reps executed
4	duration	Integer	-	Duration in seconds
5	weight	Real	-	Weights used

## Fitnora (A Smart Workout and Food Tracking App)

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**Table name:** foods

**Purpose:** To store the food items of the user

S. No.	Field Name	Data Type	Constraint	Description
1	food_id	Integer	Primary Key, Auto Increment	Food unique id
2	food_name	Text	Not Null, Unique	Food name
3	food_calories	Real	Not Null	Food calories for 100g
4	food_protein	Real	Not Null	Food protein for 100g
5	food_carbs	Real	Not Null	Food carbs for 100g
6	food_fats	Real	Not Null	Food fats for 100g
7	food_fibers	Real	Not Null	Food fibers for 100g
8	food_source	Text	Not Null	User created or Gemini AI
9	updated_at	Integer	Not Null	Record updated timestamp

**Table name:** body\_measurements

**Purpose:** To store the body measurement progress of the user

S. No.	Field Name	Data Type	Constraint	Description
1	measurement_id	Integer	Primary Key	Measurement unique id
2	user_image	Text	Not Null	Image of the user
3	user_weight	Real	Not Null	Weight of the user
4	user_height	Real	Not Null	Height of the user
3	recorded_at	Date	Not Null	Recorded date
4	updated_at	Integer	Not Null	Record updated timestamp



## Fitnora (A Smart Workout and Food Tracking App)

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**Table name:** meals

**Purpose:** To store the meals eaten by the user

S. No.	Field Name	Data Type	Constraint	Description
1	meal_id	Integer	Primary Key	Food unique id
2	food_id	Integer	Foreign Key, On Delete Cascade	Food name
3	meal_date	Date	Not Null	Meal eaten date
3	meal_type	Text	Not Null, Check	Breakfast, lunch, dinner or snacks
4	meal_quantity	Real	Not Null	Quantity of meal taken
5	meal_calories	Real	Not Null	Food calories
6	meal_protein	Real	Not Null	Food protein
7	meal_carbs	Real	Not Null	Food carbs
8	meal_fats	Real	Not Null	Food fats
9	meal_fibers	Real	Not Null	Food Fibers
10	updated_at	Integer	Not Null	Record updated timestamp