

CoreFoods Database

UNF:

Email

Password

Name

Height

Weight

Date of birth

Gender

Text size

Theme

Light Dark mode

Colour blind modes

(ActivityID

Daily steps

Exercise type

Exercise intensity

Exercise length

Calories burned)

(FoodID

Food name

Food calorie info

Food Protein

Food Carbs

Food Fat

Caloric intake)

1NF:

Email

Password

Name

Height

Weight

DateOfBirth

Gender

*Email

TextSize

Theme

LightDarkMode

ColourBlindMode

ActivityID

*Email

DailySteps

ExerciseType

Intensity

Length

FoodID

FoodName

CalorieInfo

Protein

Carbs

Fat

IntakeID

*Email

*FoodID

CaloricIntake

2NF:

1NF already satisfies 2NF

3NF:

User

Email

Password

Name

Height

Weight

DateOfBirth

Gender

User Preferences

*Email

TextSize

Theme

LightDarkMode

ColourBlindMode

Activity

ActivityID

*Email

DailySteps

ExerciseType

Intensity

Length

Food

FoodID

FoodName

Nutrition

*FoodID

CalorieInfo

Protein

Carbs

Fat

Food Intake

IntakeID

*Email

*FoodID

CaloricIntake

FDG:

User

Field Name	Description	Data Type	Size/Format	Key Type	Validation
Email	Users email and unique identifier	VARCHAR	255	PK	Must be valid email format
Password	Users private credentials to login to account	VARCHAR	255	N/A	Must meet password complexity rules
Name	Users full name	VARCHAR	255	N/A	Alphabetic characters only
Height	Users height	DECIMAL	5,2	N/A	Must be a positive number
Weight	Users weight	DECIMAL	5,2	N/A	Must be a positive number
DateOfBirth	Users date of birth	DATE	N/A	N/A	Must be a valid date
Gender	Users gender	VARCHAR	20	N/A	Must be one of predefined options

User Preferences

Field Name	Description	Data Type	Size/Form	Key Type	Validation
Email	Links to User	VARCHAR	255	PK&FK	Must exist in User table
TextSize	UI Text size	VARCHAR	20	N/A	Must be small, medium, or large
Theme	App theme	VARCHAR	50	N/A	Must match existing theme options
LightDarkMode	Mode preference	VARCHAR	10	N/A	Must be 'light' or 'dark'
ColourBlindMode	Accessibility mode	VARCHAR	30	N/A	Must match predefined modes

Activity

Field Name	Description	Data Type	Size/Format	Key Type	Validation
ActivityID	Unique activity record	INT	N/A	PK	Auto-increment
Email	Links to User	VARCHAR	255	FK	Must exist in User table
DailySteps	Steps taken that day	INT	N/A	N/A	Must be ≥ 0
ExerciseType	Type of exercise	VARCHAR	50	N/A	Must be valid exercise type
ExerciseIntensity	Intensity level	VARCHAR	20	N/A	Must be low, medium, or high
ExerciseLength	Duration (minutes)	INT	N/A	N/A	Must be > 0
CaloriesBurned	Calories burned	INT	N/A	N/A	Must be ≥ 0

Food

Field Name	Description	Data Type	Size/Format	Key Type	Validation
FoodID	Unique food item	INT	N/A	PK	Auto-increment
FoodName	Name of food	VARCHAR	255	N/A	Cannot be empty

Nutrition

Field Name	Description	Data Type	Size/Format	Key Type	Validation
FoodID	Links to Food	INT	N/A	PK	Must exist in Food table
CalorieInfo	Calories per serving	INT	N/A	N/A	Must be ≥ 0
Protein	Protein content	DECIMAL	5,2	N/A	Must be ≥ 0
Carbs	Carbohydrates	DECIMAL	5,2	N/A	Must be ≥ 0
Fat	Fat content	DECIMAL	5,2	N/A	Must be ≥ 0

Food Intake

Field Name	Description	Data Type	Size/Format	Key Type	Validation
IntakeID	Unique intake record	INT	N/A	PK	Auto-increment
Email	Links to User	VARCHAR	255	FK	Must exist in User table
FoodID	Food consumed	INT	N/A	FK	Must exist in Food table
CaloricIntake	Calories consumed	INT	N/A	N/A	Must be ≥ 0

Relational Schema diagram:

