MEMBER_REGISTRATION

username	email	passward	first_name	last_name	gender	date_of_birth

1NF:

username	email	passward	first_name	last_name	gender	date_of_birth
emily	emily @gmail.com	Emily_uni	emily	rockson	Female	2001-12-21
david	David@hotmail.com	David_2193	david	alikson	male	2009-02-12
alex	Alex@yahoo.com	Alexhi!23	alex	vickie	male	2007-01-13

The relation is in 1NF since there are not composite or multivalues

2NF: Collect FDS

Username -> email

Username -> passwords

Username -> first_name

Username -> last_name

Username -> gender

Username -> date_of_birth

In 2NF since the username will define all the other attributes since there is no partial dependency

3NF:

There is no transitive dependency thus it is in 3NF since no none primary attribute depend on other none primary attribute

---

MEMBER_PROFILE

Member_id	address	contact	username

1NF:

Member_id	address	contact	username
1	ottawa	343-123-323	emily
2	toronto	343-123-321	david
3	Toronto	343-123-327	alex

The relation is in 1NF since there are not composite or multivalues

2NF: Collect FDS

Member -> address

Member -> contact

Member -> username

- In 2NF since the Member_id will define all the other attributes since there is no partial dependency

3NF:

- There is no transitive dependency thus it is in 3NF since no none primary attribute depend on other none primary attribute

---

FITNESSGOAL

Fitness_goalD	Fitness_goal	weight_goal	muscle_goal	fat	Member_id

1NF:

Fitness_goalD	Fitness_goal	weight_goal	muscle_goal	fat
1	TONE	64	#	#
2	BUILD MUSCLES	52	#	#
3	BURN FAT	80	#	#

The relation is in 1NF since there are not composite or multivalues

2NF: Collect FDS

Fitness_goalD-> Fitness_goal

Fitness_goalD -> weight_goal

Fitness_goalD -> muscle_goal

Fitness_goalD ->fat

Fitness_goalD ->member_id

In 2NF since the Fitness_goalD will define all the other attributes since there is no partial dependency

3NF:

- There is no transitive dependency thus it is in 3NF since no none primary attribute depend on other none primary attribute

HEALTH_METRICS

HealthID	Med	Weight	Height	Member_id

1NF: The relation is in 1NF since there are not composite or multivalues

2NF: Collect FDS

healthID -> med

healthID -> weight

healthID -> height

healthID -> member_id

- In 2NF since the healthID will define all the other attributes since there is no partial dependency

3NF:

- There is no transitive dependency thus it is in 3NF since no none primary attribute depend on other none primary attribute

---

FITNESS_ACHIEVEMENT

FitnessID	Weight_achieved	Muscle_achieved	Fat_achieved	DashboardID

1NF: The relation is in 1NF since there are not composite or multivalues

2NF: Collect FDS

fitnessID -> weight_achieved

fitnessID -> muscle_achieved

fitnessID -> fat_achieved

fitnessID -> Fitness_goal_achieved

fitnessID -> dashboardID

- In 2NF since the fitnessID will define all the other attributes since there is no partial dependency

3NF:

- There is no transitive dependency thus it is in 3NF since no none primary attribute depend on other none primary attribute

---

DASHBOARD

DashboardID	Loyaltypoints	Member_id

1NF: The relation is in 1NF since there are not composite or multivalues

2NF: Collect FDS

dashboardID -> loyaltypoints

dashboardID -> member_id

- In 2NF since the dashboardID will define all the other attributes since there is no partial dependency (we cant get loyaltypoints from member_id)

3NF:

- There is no transitive dependency thus it is in 3NF since no none primary attribute depend on other none primary attribute

---

EXERCISE_ROUTINE

routineid	date	exerciseType	dashboardID

1NF: The relation is in 1NF since there are not composite or multivalues

2NF: Collect FDS

routineid -> date

routineid -> exerciseType

routineid -> dashboardID

- In 2NF since the routineid will define all the other attributes since there is no partial dependency

3NF:

- There is no transitive dependency thus it is in 3NF since no none primary attribute depend on other none primary attribute

---

HEALTH_STATS

Health_Stat_id	Health_Stat	Current_weight	Current_height	dashboardID

1NF: The relation is in 1NF since there are not composite or multivalues

2NF: Collect FDS

healthStatId -> health_Stat

healthStatId -> current_weight

healthStatId -> current_height

healthStatId -> dashboardID

- In 2NF since the healthStatId will define all the other attributes since there is no partial dependency

3NF:

- There is no transitive dependency thus it is in 3NF since no none primary attribute depend on other none primary attribute

---

PERSONAL_TRAINING_SESSIONS

TRAINING_SESSION_ID	trainer_id	amount	cost_per_sessions	duration	number_sessions

1NF: The relation is in 1NF since there are not composite or multivalues

2NF: Collect FDS

TRAINING_SESSION_ID -> trainer_id

TRAINING_SESSION_ID -> amount

TRAINING_SESSION_ID -> cost_per_session

TRAINING_SESSION_ID -> duration

TRAINING_SESSION_ID -> number_sessions

- In 2NF since the TRAINING_SESSION_ID will define all the other attributes since there is no partial dependency

3NF:

- The issue here arises in the cost_per_session since it depends on the number_sessions and since the amount can be calculated by using both cost_per_session and number_sessions thus we must create a new table

BEFORE:

TRAINING_SESSION_ID	trainer_id	amount	cost_per_sessions	duration	number_sessions

AFTER:

TRAINING_SESSION_ID	trainer_id	cost_per_session	duration

TRAINING_SESSION_ID	number_sessions	amount

SESSIONS

SESSION_id	status	club_name	sTime	sDate	duration	sLocation	TRAINGING_ SESSION_ID	dashboardID

1NF: The relation is in 1NF since there are not composite or multivalues

2NF: Collect FDS

SESSION_id -> status

SESSION_id -> club_name

SESSION_id -> sTime

SESSION_id -> sDate

SESSION_id -> duration

SESSION_id ->sLocation

SESSION_id -> TRAINING_SESSION_ID

SESSION_id -> dashboardID

- In 2NF since the SESSION_id will define all the other attributes since there is no partial dependency

3NF:

- This table is not in 3rd normal form as the non primary attribute slocation determines the club_name and session_id determines the club_name. we have a transitive dependency here.

  SESSION_id -> sLocation

  sLocation -> club_name

  Decompose:

SESSION_id	status	sTime	sDate	duration	sLocation	TRAINGING_SESSION_ID	dashboardID

SESSION_id	club_name

EVENTS

event_id	type_of_event	Instructor	status	Amount	dashboardID

1NF: The relation is in 1NF since there are not composite or multivalues

2NF: Collect FDS

event_id -> type_of_event

event_id -> instructor

event_id -> status

event_id -> amount

event_id -> dashboardID

- In 2NF because the primary key (event_id) uniquely identifies all other on primary attributes without any partial dependencies

3NF:

- There is no transitive dependency thus it is in 3NF since no none primary attribute depend on other none primary attribute

---

BOOKED_EVENTS

booking_id	club_name	date	time	location	event_id

1NF: The relation is in 1NF since there are not composite or multivalues

2NF: Collect FDS

booking_id -> club_name

booking_id -> date

booking_id -> time

booking_id -> location

booking_id -> event_id

- In 2NF because the primary key (booking_id) uniquely identifies all other on primary attributes without any partial dependencies

3NF:

- There is no transitive dependency thus it is in 3NF since no none primary attribute depend on other none primary attribute

---

TRAINER

trainer_id	first_name	last_name	gender

1NF: The relation is in 1NF since there are not composite or multivalues

2NF: Collect FDS

trainer_id -> first_name

trainer_id -> last_name

trainer_id -> gender

- In 2NF because the primary key (trainer_id) uniquely identifies all other on primary attributes without any partial dependencies

3NF:

- There is no transitive dependency thus it is in 3NF since no none primary attribute depend on other none primary attribute

---

NOTES

note_id	note	training_date	trainer_id	dashboardID

1NF: The relation is in 1NF since there are not composite or multivalues

2NF: Collect FDS

note_id -> note

note_id -> training_date

note_id -> trainer_id

note_id -> dashboardID

- In 2NF because the primary key (note_id) uniquely identifies all other on primary attributes without any partial dependencies

3NF:

- There is no transitive dependency thus it is in 3NF since no none primary attribute depend on other none primary attribute

---

LOYALITY_PROGRAM

programID	points	reward_type	admin_id

1NF: The relation is in 1NF since there are not composite or multivalues

2NF: Collect FDS

programID -> points

programID -> reward_type

programID -> admin_id

- In 2NF because the primary key (programID) uniquely identifies all other on primary attributes without any partial dependencies

3NF:

- There is no transitive dependency thus it is in 3NF since no none primary attribute depend on other none primary attribute

---

ADMINISTRATION

ADMIN_ID	email	first_name	last_name	department	phone

1NF: The relation is in 1NF since there are not composite or multivalues

2NF: Collect FDS

ADMIN_ID -> email

ADMIN_ID -> first_name

ADMIN_ID -> last_name

ADMIN_ID -> department

ADMIN_ID -> phone

- In 2NF because the primary key (ADMIN_ID) uniquely identifies all other on primary attributes without any partial dependencies

3NF:

- There is no transitive dependency thus it is in 3NF since no none primary attribute depend on other none primary attribute

---

MANAGE_ROOMS

roomNumber	Room_status	capacity	Last_cleaned	Room_repair	ADMIN_ID

1NF: The relation is in 1NF since there are not composite or multivalues

2NF: Collect FDS

roomNumber -> room_status

roomNumber -> capacity

roomNumber -> last_cleaned

roomNumber -> room_repair

roomNumber -> admin_id

- In 2NF because the primary key (Room_num) uniquely identifies all other on primary attributes without any partial dependencies

3NF:

- There is no transitive dependency thus it is in 3NF since no none primary attribute depend on other none primary attribute

---

MONITOR_GYM

equipmentID	last_serviced	repairs_required	maintaince_status	ADMIN_ID

1NF: The relation is in 1NF since there are not composite or multivalues

2NF: Collect FDS

equipmentID -> last_serviced

equipmentID -> repairs_required

equipmentID -> maintenance_status

equipmentID -> ADMIN_ID

- In 2NF because the primary key (equipmentID) uniquely identifies all other on primary attributes without any partial dependencies

3NF:

- There is no transitive dependency thus it is in 3NF since no none primary attribute depend on other none primary attribute

BILLINGS

transactionID	points_earned	transaction_date	amount	transaction_ Type	ADMIN_ID	member_id

1NF: The relation is in 1NF since there are not composite or multivalues

2NF: Collect FDS

transactionID -> points_earned

transactionID -> transaction_date

transactionID -> amount

transactionID -> transaction type

transactionID -> ADMIN_ID

transactionID -> member_id

- In 2NF because the primary key (transactionID) uniquely identifies all other on primary attributes without any partial dependencies

3NF:

- There is no transitive dependency thus it is in 3NF since no none primary attribute depend on other none primary attribute

---

REDEMPTION

redemptionID	points_used	reward_status	date_reward	programID	member_id

1NF: The relation is in 1NF since there are not composite or multivalues

2NF: Collect FDS

redemptionID -> points_used

redemptionID -> reward_status

redemptionID -> date_reward

redemptionID -> programID

redemptionID -> member_id

- In 2NF because the primary key (redemptionID) uniquely identifies all other on primary attributes without any partial dependencies

3NF:

- There is no transitive dependency thus it is in 3NF since no none primary attribute depend on other none primary attribute