Assignment 2

Normalization

Vehicle report

UNF

VEHICLE (vehicle_vin, classification_type, vehicle_model, vehicle_manfacture_year, vehicle_colour, (vehicle_reg_date, vehicle_reg_no, vehicle_dereg_date))

MODEL (manufacturer_code, manufacturer_name, manufacturer_country_code, manufacturer_country_name, transmission_type, vehicle_model, (engine_type), engine_size, gr_clearance_laden, gr_clearance_unladen)

1NF

VEHICLE (vehicle_vin, classification_type, *vehicle_model*, vehicle_manfacture_year, vehicle_colour)

VEHICE_REGISTRATION (*vehicle_vin*, vehicle_reg_date, vehicle_reg_no, vehicle_dereg_date)

MODEL (vehicle_model, manufacturer_name, manufacturer_code, manufacturer_country_code, manufacturer_country_name, geartype, engine_size, gr_clearance_laden, gr_clearance_unladen)

ENGINE_TYPE (vehicle_model, engine_type)

DEPENDENCY DIAGRAM:

PARTIAL DEPENDENCY

- No Partial Dependency found.

TRANSITIVE DEPENDENCY

- manufacturer_code → manufacturer_name, manufacturer_country_code, manufacturer_country_name
- manufacturer_country_code → manufacturer_country_name

2NF (SAME AS 1NF AS NO PARTIAL DEPENDENCY)

VEHICLE (VEHICLE_VIN, classification_type, vehicle_model, vehicle_manfacture_year, vehicle_colour)

VEHICE_REGISTRATION (*VEHICLE_VIN*, vehicle_reg_date, vehicle_reg_no, vehicle_dereg_date)

MODEL (vehicle_model, manufacturer_name, manufacturer_code, manufacturer_country_code, manufacturer_country_name, geartype, engine_size, gr_clearance_laden, gr_clearance_unladen)

ENGINE_TYPE (*manufacturer_code*, engine_type)

3NF

VEHICLE (vehicle_vin, classification_type, vehicle_model, vehicle_manfacture_year, vehicle_colour)

VEHICE_REGISTRATION (*vehicle_vin*, vehicle_reg_date, vehicle_reg_no, vehicle_dereg_date)

MODEL (*vehicle_model*, manufacturer_code, geartype, engine_size, gr_clearance_laden, gr_clearance_unladen)

ENGINE_TYPE (*vehicle_model*, engine_type)

MANUFACTURER (manufacturer_code, manufacturer_name, *manufacturer_country_code*)

MANUFACTURER_COUNTRY (manufacturer_country_code, manufacturer_country_name)

Licence

UNF

DRIVER(license_no, license_status, driver_first_name, driver_last_name, driver_street, driver_town, driver_postcode, driver_dob, license_expiry_date, (license_type), (suspension_start_date, suspension_end_date), (cancellation_date, cancellation_period, cancellation_reason)

1NF

DRIVER (license_no, license_status, driver_first_name, driver_last_name, driver_street, driver_town, driver_postcode, driver_dob, license_expiry_date)

LICENSE_CANCELLATION (license_no, cancellation_date, cancellation_period, cancellation_reason)

LICENCE_TYPE (license_no, license_type)

SUSPENSION (license_no, suspension_start_date, suspension_end_date)

DEPENDENCY DIAGRAM:

PARTIAL DEPENDENCY

- No Partial Dependency found.

TRANSITIVE DEPENDENCY

- No Transitive Dependency found.

2NF (SAME AS 1NF AS NO PARTIAL DEPENDENCY)

DRIVER (license_no, license_status, driver_first_name, driver_last_name, driver_street, driver_town, driver_postcode, driver_dob, license_expiry_date)

LICENSE_CANCELLATION (license_no, cancellation_date, cancellation_period, cancellation_reason)

LICENCE_TYPE (license_no, license_type)

SUSPENSION (license_no, suspension_start_date, suspension_end_date)

3NF(SAME AS 2NF AS NO TRANSITIVE DEPENDENCY)

DRIVER (license_no, license_status, driver_first_name, driver_last_name, driver_street, driver_town, driver_postcode, driver_dob, license_expiry_date)

LICENSE_CANCELLATION (*license_no*, cancellation_date, cancellation_period, cancellation_reason)

LICENCE_TYPE (*license_no*, license_type)

SUSPENSION (*license_no*, suspension_start_date, suspension_end_date)

Driver Cancellation

UNF

DRIVER_CANCELLATION(license_no, driver_first_name, driver_last_name,
                    (cancellation_date, cancellation_reason, court_hearing_date,
                    license_reinstate_date))

1NF

DRIVER_CANCELLATION(<u>license_no</u>, driver_first_name, driver_last_name)

CANCELLATION (<u>cancellation_date</u>, cancellation_reason, court_hearing_date,
              license_reinstate_date)

DEPENDENCY DIAGRAM:

PARTIAL DEPENDENCY

- No Partial Dependency found.

TRANSITIVE DEPENDENCY

- No Transitive Dependency found.

2NF (SAME AS 1NF AS NO PARTIAL DEPENDENCY)

DRIVER_CANCELLATION(<u>license_no</u>, driver_first_name, driver_last_name)

CANCELLATION (<u>cancellation_date</u>, cancellation_reason, court_hearing_date,
              license_reinstate_date)

3NF (SAME AS 2NF AS NO TRANSITIVE DEPENDENCY)

DRIVER_CANCELLATION(<u>license_no</u>, driver_first_name, driver_last_name)

CANCELLATION (<u>cancellation_date</u>, cancellation_reason, court_hearing_date,
              license_reinstate_date)

ALL 3NFS

DRIVER_CANCELLATION(<u>license_no</u>, driver_first_name, driver_last_name)

CANCELLATION (<u>cancellation_date</u>, cancellation_reason, court_hearing_date,
              license_reinstate_date)

DRIVER (license_no, license_status, driver_first_name, driver_last_name, driver_street, driver_town, driver_postcode, driver_dob, license_expiry_date)

LICENSE_CANCELLATION (*license_no*, cancellation_date, cancellation_period, cancellation_reason)

LICENCE_TYPE (*license_no*, license_type)

SUSPENSION (*license_no*, suspension_start_date, suspension_end_date)

VEHICLE (vehicle_vin, classification_type, vehicle_model, vehicle_manfacture_year, vehicle_colour)

VEHICE_REGISTRATION (*vehicle_vin*, vehicle_reg_date, vehicle_reg_no, vehicle_dereg_date)

MODEL (*vehicle_model*, manufacturer_code, geartype, engine_size, gr_clearance_laden, gr_clearance_unladen)

ENGINE_TYPE (*vehicle_model*, engine_type)

MANUFACTURER (manufacturer_code, manufacturer_name, *manufacturer_country_code*)

MANUFACTURER_COUNTRY (manufacturer_country_code, manufacturer_country_name)

AFTER SYNTHESIS AND REMOVAL OF REDUNDANCY

CANCELLATION (cancellation_date, cancellation_reason, court_hearing_date, license_reinstate_date, cancellation_period)

DRIVER (license_no, license_status, driver_first_name, driver_last_name, driver_street, driver_town, driver_postcode, driver_dob, license_expiry_date)

LICENCE_TYPE (*license_no*, license_type)

SUSPENSION (*license_no*, suspension_start_date, suspension_end_date)

VEHICLE (vehicle_vin, classification_type, vehicle_model, vehicle_manfacture_year, vehicle_colour)

VEHICE_REGISTRATION (*vehicle_vin*, vehicle_reg_date, vehicle_reg_no, vehicle_dereg_date)

MODEL (*vehicle_model*, manufacturer_code, geartype, engine_size, gr_clearance_laden, gr_clearance_unladen)

ENGINE_TYPE (*vehicle_model*, engine_type)

MANUFACTURER (manufacturer_code, manufacturer_name, *manufacturer_country_code*)

MANUFACTURER_COUNTRY (manufacturer_country_code, manufacturer_country_name)

+ lookup table - CLASSIFICATION(*type_id*, classification_type)