CUI Normalization

Group Number: T6_G58

Allocated Tutor Name: Ms. Izan

Group Members:

1. **Garret Yong Shern Ming (31862616)**
2. **Muhd Lai Razi Muhd Silmi (31109373)**
3. **Wong En Xin (31110363)**

1. Driver details

UNF:

DRIVER(driver_no, driver_license_no, driver_name, driver_birth_date, driver_taxfile_no (truck_vin, truck_rego_no, truck_make, truck_model, truck_year))

1NF:

DRIVER(driver_no, driver_license_no, driver_name, driver_birth_date, driver_taxfile_no)

CK: None other than PK's

DRIVER_TRUCK(driver_no, truck_vin, truck_rego_no truck_make, truck_model, truck_year)

CK: None other than PK's

Partial Dependency:

truck_vin -> truck_rego_no, truck_make, truck_model, truck_year

2NF:

DRIVER(driver_no, driver_license_no, driver_name, driver_birth_date, driver_taxfile_no)

DRIVER_TRUCK(driver_no, truck_vin)

TRUCK(truck_vin, truck_rego_no, truck_make, truck_model, truck_year)

Transitive Dependency:

No transitive dependencies present

3NF:

DRIVER(driver_no, driver_license_no, driver_name, driver_birth_date, driver_taxfile_no)

DRIVER_TRUCK(driver_no, truck_vin)

TRUCK(truck_vin, truck_rego_no, truck_make, truck_model, truck_year)

Full Dependencies:

driver_no -> driver_license_no, driver_name, driver_birth_date, driver_taxfile_no

driver_no, truck_vin -> none

truck_vin -> truck_rego_no, truck_make, truck_model, truck_year

2. Collection Report

UNF:

CONTRACT_WASTE_COLLECTION(cont_no, waste_type_id, waste_type_description, cwc_frequency (ct_collect_date, driver_no, driver_contact_no, truck_vin (bin_rfid, wcw_weight, wcw_overweight)))

1NF:

CONTRACT_WASTE_COLLECTION(cont_no, waste_type_id, waste_type_description, cwc_frequency)

CK: cont_no, waste_type_id

COLLECTION_TRIP(cont_no, ct_collect_date, waste_type_id , driver_no, driver_contact_no, truck_vin)

CK: cont_no, ct_date, waste_type_id

WASTE_COLLECTION_WEIGHT(cont_no, bin_rfid, ct_collect_date, wcw_weight, wcw_overweight)

CK: cont_no, bin_rfid, ct_collect_date

Partial Dependency:

waste_type_id -> waste_type_description

2NF:

CONTRACT_WASTE_COLLECTION(cont_no, waste_type_id, cwc_frequency)

COLLECTION_TRIP(cont_no, ct_collect_date, waste_type_id , driver_no, driver_contact_no, truck_vin)

WASTE_COLLECTION_WEIGHT(cont_no, bin_rfid, ct_collect_date, wcw_weight, wcw_overweight)

WASTE_TYPE(waste_type_id, waste_type_description)

Transitive Dependency:

driver_no -> driver_contact_no

3NF:

CONTRACT_WASTE_COLLECTION(cont_no, waste_type_id, cwc_frequency)

COLLECTION_TRIP(cont_no, ct_collect_date, waste_type_id , driver_no, truck_vin)

WASTE_COLLECTION_WEIGHT(cont_no, bin_rfid, ct_collect_date, wcw_weight, wcw_overweight)

WASTE_TYPE(waste_type_id, waste_type_description)

DRIVER(driver_no, driver_contact_no)

Full Dependency:

cont_no, waste_type_id -> cwc_frequency

cont_no, ct_collect_date, waste_type_id -> driver_no, truck_vin

cont_no, bin_rfid, ct_collect_date -> wcw_weight, wcw_overweight

waste_type_id -> waste_type_description

driver_no -> driver_contact_no

COLLECTED 3NF RELATIONS:

Driver Details: -

1. DRIVER(driver_no, driver_license_no, driver_name, driver_birth_date, driver_taxfile_no)
2. DRIVER_TRUCK(driver_no, truck_vin)
3. TRUCK(truck_vin, truck_rego_no, truck_make, truck_model, truck_year)

Collection Report: -

4. CONTRACT_WASTE_COLLECTION(cont_no, waste_type_id, cwc_frequency)
5. COLLECTION_TRIP(cont_no, ct_collect_date, waste_type_id , driver_no, truck_vin)
6. WASTE_COLLECTION_WEIGHT(cont_no, bin_rfid, ct_collect_date, wcw_weight, wcw_overweight)
7. WASTE_TYPE(waste_type_id, waste_type_description)
8. DRIVER(driver_no, driver_contact_no)

Attribute Synthesis:

Join relations, which have an identical PK:

1 and 8: DRIVER(driver_no, driver_license_no, driver_name, driver_birth_date, driver_taxfile_no, driver_contact_no)

2. DRIVER_TRUCK(driver_no, truck_vin)

3. TRUCK(truck_vin, truck_rego_no, truck_make, truck_model, truck_year)

4. CONTRACT_WASTE_COLLECTION(cont_no, waste_type_id, cwc_frequency)

5. COLLECTION_TRIP(cont_no, ct_collect_date, waste_type_id , driver_no, truck_vin)

6. WASTE_COLLECTION_WEIGHT(cont_no, bin_rfid, ct_collect_date, wcw_weight, wcw_overweight)

7. WASTE_TYPE(waste_type_id, waste_type_description)