ASSIGNMENT 1B: NORMALISATION

Driver Details:

<u>**UNF**</u>

DRIVER (driver_no, driver_licence_no, driver_givname, driver_famname, driver_dob, driver_tfn, (truck_vin, truck_rego_no, truck_make, truck_model, truck_year))

<u>**1NF**</u>

DRIVER (<u>driver_no</u>, driver_licence_no, driver_givname, driver_famname, driver_dob, driver_tfn)

TRUCK (<u>truck_vin,</u> truck_rego_no, truck_make, truck_model, truck_year, driver_no)

Partial Dependency:

- No partial dependencies.

<u>**2NF**</u>

DRIVER (<u>driver_no</u>, driver_licence_no, driver_givname, driver_famname, driver_dob, driver_tfn)

TRUCK (<u>truck_vin,</u> truck_rego_no, truck_make, truck_model, truck_year, driver_no)

Transitive Dependency:

- No transitive dependencies.

<u>**3NF**</u>

DRIVER (<u>driver_no</u>, driver_licence_no, driver_givname, driver_famname, driver_dob, driver_tfn)

TRUCK (<u>truck_vin,</u> truck_rego_no, truck_make, truck_model, truck_year, driver_no)

Full Dependency:

- driver_no → driver_licence_no, driver_givname, driver_famname, driver_dob, driver_tfn

- truck_vin → truck_rego_no, truck_make, truck_model, truck_year, driver_no

Collection Report:

UNF

WASTE_COLLECTION (contract_no, waste_type_id, waste_type_desc, waste_collection_freq, (collection_date, driver_no, driver_contact, truck_vin, (bin_RFID, bin_collection_weight, bin_overweight)))

1NF

WASTE_COLLECTION(<u>contract_no</u>, <u>waste_type_id</u>, waste_type_desc, waste_collection_freq)

COLLECTION (<u>contract_no</u>, <u>waste_type_id</u>, <u>collection_date</u>, driver_no, driver_contact, truck_vin)

BIN_COLLECTION (<u>collection_date,</u> <u>bin_RFID,</u> bin_collection_weight, bin_overweight)

Partial Dependency:

- waste_type_id → waste_type_desc

2NF

WASTE_TYPE(<u>waste_type_id</u>, waste_type_desc)

WASTE_COLLECTION(<u>contract_no</u>, <u>waste_type_id</u>, waste_collection_freq)

COLLECTION (<u>contract_no</u>, <u>waste_type_id</u>, <u>collection_date</u>, driver_no, driver_contact, truck_vin)

BIN_COLLECTION (<u>collection_date,</u> <u>bin_RFID,</u> bin_collection_weight, bin_overweight)

Transitive Dependency:

- driver_no → driver_contact

3NF

WASTE_TYPE(<u>waste_type_id</u>, waste_type_desc)

WASTE_COLLECTION(<u>contract_no</u>, <u>waste_type_id</u>, waste_collection_freq)

COLLECTION (<u>contract_no</u>, <u>waste_type_id</u>, <u>collection_date</u>, driver_no, truck_vin)

BIN_COLLECTION (<u>collection_date,</u> <u>bin_RFID,</u> bin_collection_weight, bin_overweight)

DRIVER (<u>driver_no,</u> driver_contact)

Full Dependency:

- waste_type_id → waste_type_desc
- contract_no, waste_type_id → waste_collection_freq
- contract_no, waste_type_id, collection_date → driver_no, truck_vin
- collection_date, bin_RFID → bin_collection_weight, bin_overweight
- driver_no → driver_contact

COLLECTED 3NF RELATIONS:

DRIVER (<u>driver_no</u>, driver_licence_no, driver_givname, driver_famname, driver_dob, driver_tfn)

TRUCK (<u>truck_vin,</u> truck_rego_no, truck_make, truck_model, truck_year, driver_no)

WASTE_TYPE(<u>waste_type_id</u>, waste_type_desc)

WASTE_COLLECTION(<u>contract_no</u>, <u>waste_type_id</u>, waste_collection_freq)

COLLECTION (<u>contract_no</u>, <u>waste_type_id</u>, <u>collection_date</u>, driver_no, truck_vin)

BIN_COLLECTION (<u>collection_date,</u> <u>bin_RFID,</u> bin_collection_weight, bin_overweight)

DRIVER (<u>driver_no,</u> driver_contact)

Attribute Synthesis:

DRIVER (<u>driver_no</u>, driver_driver_licence_no, driver_givname, driver_famname, driver_dob, driver_tfn, driver_contact)

TRUCK (<u>truck_vin,</u> truck_rego_no, truck_make, truck_model, truck_year, driver_no)

WASTE_TYPE(<u>waste_type_id</u>, waste_type_desc)

WASTE_COLLECTION(<u>contract_no</u>, <u>waste_type_id</u>, waste_collection_freq)

COLLECTION (<u>contract_no</u>, <u>waste_type_id</u>, <u>collection_date</u>, driver_no, truck_vin)

BIN_COLLECTION (<u>collection_date,</u> <u>bin_RFID,</u> bin_collection_weight, bin_overweight)