

ENTITY BANK:
Copy what you need from these.
(They come from our ERD)

Employees
emp_id
emp_name
emp_number
emp_commission

Reservations
res_id
emp_id
cust_id
pm_id
res_date_req
res_date_backup
res_passengers
res_boarding_pass_code
lodging_id

Lodgings
lodg_id
lodg_name
lodg_street_line_1
lodg_street_line_2
lodg_city
lodg_state
lodg_zip

Shipment
ship_id
supp_id
purchase_datetime

Purchase_Order
purchase_order_id
supp_id

Equipment_Item
eq_id
ship_id
eq_serial_num
eq_model_id
return_to_supplier
return_to_inventory
in_inventory

Purchase_Agreement
cust_id
emp_id
eq_model_id
date_time
eq_desc
pay_method
eq_model_id

Sales_Report
date_start
date_end
eq_model_id
eq_description
quantity_sold
unit_price
total_sales
grand_total

Sales
sale_id
emp_id
cust_id
eq_id
sale_subtotal
sale_tax
sale_overall
sale_datetime

Supplier
supp_id
supp_name
supp_phone
supp_street_line_1
supp_street_line_2
supp_city
supp_state
supp_zip
supp_email

Equipment_Model
eq_model_id
eq_model_num
eq_retail_cost
eq_description
target_inventory
inventory

Return
return_id
sale_id
date_returned
emp_id
reason
return_type (refund store credit)

Reorder_Request
reorder_req_id
eq_model_id
num_items

Customers
cust_id
cust_name
cust_phone
cust_street_line_1
cust_street_line_2
cust_city
cust_state
cust_zip
cust_email
store_credit

Stored_Payment_Methods
cust_id
pm_id
pm_type
pm_number
pm_exp

Purchase_Order_Item
purchase_order_item_id
purchase_order_id
eq_model_id
num_items
price_per_item
shipping
total_tax

Deliverable II – Normalized Relational Model

The relational model should be developed through a step-by-step process. The steps that will be followed are listed below:

- Review the identification of attributes and the E-R diagram from Deliverable I. If modifications are needed (as indicated in grading of Deliverable I) please include those.
- Using the E-R diagram developed in Deliverable I, along with the entities, relationships, and their attributes, determine and specify the relations. Provide the relational schema for each relation.
- Normalize each relation, explaining the introduction of any new attributes, and why each relation does or does not need to be normalized. Use the examples in the notes as a guideline.
- Indicate the primary key in each relation by underlining, and double-underline or italicize foreign keys.
- Turn in a relational schema for each relation in the form
 - TABLE_NAME (KEY_ATTRIBUTE, ATTRIBUTE, ...ATTRIBUTE)

NRM Basic Template Normalized Relational Model	TABLE_NAME (KEY_ATTRIBUTE, ATTRIBUTE, ...ATTRIBUTE,)
	TABLE_NAME (KEY_ATTRIBUTE, ATTRIBUTE, ...ATTRIBUTE,)
	TABLE_NAME (KEY_ATTRIBUTE, ATTRIBUTE, ...ATTRIBUTE,)
	TABLE_NAME (KEY_ATTRIBUTE, ATTRIBUTE, ...ATTRIBUTE,)

"...explaining the introduction of any new attributes, and why each relation does or does not need to be normalized. Use the examples in the notes as a guideline." (source)

NRM Process New Inventory	EQ_ITEM(<u>eq_id</u> , eq_model_id, eq_serial_num, return_to_supplier, return_to_inventory, in_inventory)
	EQ_MODEL(<u>eq_model_id</u> , eq_model_num, eq_retail_cost, eq_description, target_inventory, inventory)
	EMPLOYEE(<u>emp_id</u> , emp_name, emp_number, emp_commission)
	SHIPMENT(<u>ship_id</u> , supp_id, purchase_datetime)
	SUPPLIER(<u>supp_id</u> , supp_name, supp_phone, supp_email, supp_street_1, supp_street_2, supp_city, supp_state, supp_zip)
	PURCHASE_ORDERS(<u>purchase_order_id</u> , <u>supp_id</u>)

EQ_ITEM - Matches ERD.
EQ_MODEL - Matches ERD.
EMPLOYEE - Matches ERD.
SHIPMENT - Matches ERD.
SUPPLIER - Matches ERD.
PURCHASE_ORDER - Matches ERD.

NRM Customer Purchase Equipment	SALES(<u>sale_id</u> , emp_id, cust_id, eq_id, sale_subtotal, sale_tax, sale_overall, sale_datetime)
	CUSTOMER(<u>cust_id</u> , cust_name, cust_phone, cust_email, cust_store_credit, cust_street_line_1, cust_street_line_2, cust_city, cust_state, cust_zip)
	EMPLOYEE(<u>emp_id</u> , emp_name, emp_number, emp_commission)
	PAYMENT_METHOD(<u>pm_id</u> , cust_id, pm_type, pm_number, pm_exp)
	EQ_ITEM(<u>eq_id</u> , eq_model_id, eq_serial_num, return_to_supplier, return_to_inventory, in_inventory)
	EQ_MODEL(<u>eq_model_id</u> , eq_model_num, eq_retail_cost, eq_description, target_inventory, inventory)

SALES --- Matches ERD.
CUSTOMER ----- Matches ERD.
EMPLOYEE ----- Matches ERD.
PAYMENT_METHOD - Matches ERD.
EQ_ITEM ----- Matches ERD.
EQ_MODEL ----- Matches ERD.

NRM Generate Salesperson Sales & Commission Report	SALESPERSON_REPORT(<u>salesperson_report_id</u> , emp_id, total_sales_count, total_commission, total_sales_amount)
	EMPLOYEE(<u>emp_id</u> , emp_name, emp_number, emp_commission)
	SALES(<u>sale_id</u> , emp_id, cust_id, eq_id, sale_subtotal, sale_tax, sale_overall, sale_datetime)
	EQ_ITEM(<u>eq_id</u> , eq_model_id, eq_serial_num, return_to_supplier, return_to_inventory, in_inventory)
	EQ_MODEL(<u>eq_model_id</u> , eq_model_num, eq_retail_cost, eq_description, target_inventory, inventory)

SALESPERSON_REPORT --- Matches ERD.
EMPLOYEE ----- Matches ERD.
SALES ----- Matches ERD.
EQ_ITEM - Matches ERD.
EQ_MODEL ----- Matches ERD.

NRM Customer Schedules Balloon Ride	EMPLOYEE(<u>emp_id</u> , emp_name, emp_number, emp_commission)
	CUSTOMER(<u>cust_id</u> , cust_name, cust_phone, cust_email, cust_store_credit, cust_street_line_1, cust_street_line_2, cust_city, cust_state, cust_zip)
	LODGING(<u>lodg_id</u> , lodg_name, lodg_street_line_1, lodg_street_line_2, lodg_city, lodg_state, lodg_zip)
	PAYMENT_METHOD(<u>pm_id</u> , cust_id, pm_type, pm_number, pm_exp)
	RESERVATION(<u>res_id</u> , emp_id, cust_id, pm_id, lodg_id, res_date_req, res_date_backup, res_passengers, res_boarding_pass_code)

EMPLOYEE ----- Matches ERD.
CUSTOMER ----- Matches ERD.
LODGING ----- Matches ERD.
PAYMENT_METHOD - Matches ERD.
RESERVATION ----- Matches ERD.

NRM Process Returned Inventory	EQ_ITEM(<u>eq_id</u> , eq_model_id, eq_serial_num, return_to_supplier, return_to_inventory, in_inventory)
	EQ_MODEL(<u>eq_model_id</u> , eq_model_num, eq_retail_cost, eq_description, target_inventory, inventory)
	SUPPLIER(<u>supp_id</u> , supp_name, supp_phone, supp_email, supp_street_1, supp_street_2, supp_city, supp_state, supp_zip)

EQ_ITEM ----- Matches ERD.
EQ_MODEL ----- Matches ERD.
SUPPLIER ----- Matches ERD.

NRM Generate Purchase Agreement	EMPLOYEE(<u>emp_id</u> , emp_name, emp_number, emp_commission)
	EQ_ITEM(<u>eq_id</u> , eq_model_id, eq_serial_num, return_to_supplier, return_to_inventory, in_inventory)
	EQ_MODEL(<u>eq_model_id</u> , eq_model_num, eq_retail_cost, eq_description, target_inventory, inventory)
	SALES(<u>sale_id</u> , emp_id, cust_id, eq_id, sale_subtotal, sale_tax, sale_overall, sale_datetime)
	PAYMENT_METHOD(<u>pm_id</u> , cust_id, pm_type, pm_number, pm_exp)

EQ_ITEM ----- Matches ERD.
EQ_MODEL ----- Matches ERD.
CUSTOMER ----- Matches ERD.
EMPLOYEE ----- Matches ERD.
SALES ----- Matches ERD.

NRM Generate Sales Report	EQ_ITEM(<u>eq_id</u> , eq_model_id, eq_serial_num, return_to_supplier, return_to_inventory, in_inventory)
	EQ_MODEL(<u>eq_model_id</u> , eq_model_num, eq_retail_cost, eq_description, target_inventory, inventory)
	SALES(<u>sale_id</u> , emp_id, cust_id, eq_id, sale_subtotal, sale_tax, sale_overall, sale_datetime)

EQ_ITEM ----- Matches ERD.
EQ_MODEL ----- Matches ERD.
SALES ----- Matches ERD.

NRM Generate Upcoming Hot Air Balloon Reservations Report	CUSTOMER(<u>cust_id</u> , cust_name, cust_phone, cust_email, cust_store_credit, cust_street_line_1, cust_street_line_2, cust_city, cust_state, cust_zip)
	LODGING(<u>lodg_id</u> , lodg_name, lodg_street_line_1, lodg_street_line_2, lodg_city, lodg_state, lodg_zip)
	RESERVATION(<u>res_id</u> , emp_id, cust_id, pm_id, lodg_id, res_date_req, res_date_backup, res_passengers, res_boarding_pass_code)

CUSTOMER ----- Matches ERD.
LODGING ----- Matches ERD.
RESERVATION - Matches ERD.

NRM Generates Current Inventory	EQ_ITEM(<u>eq_id</u> , eq_model_id, eq_serial_num, return_to_supplier, return_to_inventory, in_inventory)
	EQ_MODEL(<u>eq_model_id</u> , eq_model_num, eq_retail_cost, eq_description, target_inventory, inventory)
	REORDER_REQ(<u>reorder_req_id</u> , eq_model_id, num_items)

EQ_ITEM - Matches ERD.
EQ_MODEL - Matches ERD.
REORDER_REQ - Matches ERD.

NRM Order New Equipment	REORDER_REQ(<u>reorder_req_id</u> , eq_model_id, num_items)
	EQ_MODEL(<u>eq_model_id</u> , eq_model_num, eq_retail_cost, eq_description, target_inventory, inventory)
	PURCHASE_ORDER(<u>purchase_order_id</u> , <u>supp_id</u>)
	PURCHASE_ORDER_ITEM(<u>purchase_order_item_id</u> , purchase_order_id, eq_model_id, num_items, price_per_item, shipping, total_tax)
	SUPPLIER(<u>supp_id</u> , supp_name, supp_phone, supp_email, supp_street_1, supp_street_2, supp_city, supp_state, supp_zip)

REORDER_REQ - Matches ERD.
EQ_MODEL - Matches ERD.
PURCHASE_ORDER - Matches ERD.
PURCHASE_ORDER_ITEM - Matches ERD.

NRM Basic Template Normalized Relational Model	CUSTOMER(<u>cust_id</u> , cust_name, cust_phone, cust_email, cust_store_credit, cust_street_line_1, cust_street_line_2, cust_city, cust_state, cust_zip)
	SALES(<u>sale_id</u> , emp_id, cust_id, eq_id, sale_subtotal, sale_tax, sale_overall, sale_datetime)
	EQ_ITEM(<u>eq_id</u> , eq_model_id, eq_serial_num, return_to_supplier, return_to_inventory, in_inventory)
	RETURN(<u>return_id</u> , sale_id, emp_id, date_returned, reason, return_type)

CUSTOMER - Matches ERD.
SALES - Matches ERD
EQ_ITEM - Matches ERD.
RETURN - Matches ERD.

NRM Customer Schedules Balloon Ride	TABLE_NAME (KEY_ATTRIBUTE, ATTRIBUTE, ...ATTRIBUTE,)
	TABLE_NAME (KEY_ATTRIBUTE, ATTRIBUTE, ...ATTRIBUTE,)
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	TABLE_NAME (KEY_ATTRIBUTE, ATTRIBUTE, ...ATTRIBUTE,)

TABLERNAME - Matches ERD.
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