**AIT-524, Class 06, Practice Problems**

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**Questions:**

CUSTOMER (CUST\_ID (PK), CUST\_LAST, CUST\_FIRST, CUST\_PHONE, CUST\_EMAIL, CUST\_ADDRESS, CUST\_CITY, CUST\_ZIP, CUST\_STATE)  
ORDERS (ORDER\_NUMBER (PK), CUST\_ID (FK), PROD\_ID (FK), ORDER\_DATE, ORDER\_TOTAL)  
PRODUCT (PROD\_ID (PK), PROD\_DESCRIPTION, PROD\_CATEGORY, PROD\_PRICE)

1. Retrieve City and Email for the customer whose name is John Smith.
2. Retrieve Name and Address of all customers who live in Florida.
3. Retrieve Product Description and Price for the products in the Computer category that cost more than $100.
4. Retrieve Product Description and Price for the products in either the Computer or Game category.
5. Retrieve Name and Address of the customers who placed orders on 01-01-2016. Note: the CUSTOMER and ORDERS tables are linked through the CUST\_ID column.
6. Retrieve Product Description and Price for the products that were purchased on 01-01-2016. Note: PRODUCT and ORDERS tables are linked through the PROD\_ID column.
7. Retrieve Name and Address of all customers who live in Florida, who purchased product “TV”.
8. 9. 10. Write **three** more complex queries to retrieve data from these tables. Queries must include multiple conditions and incorporate at least one join, one rename, and one aggregate function operations. All queries must be different. Provide a clear explanation of what each query is intended to do.

**Solution 01**

CUST <- **σ** CUST\_FIRST= John ^ CUST\_LAST= Smith (CUSTOMER),

RESULT <- π CUST\_CITY, CUST\_EMAIL (CUST)

**Solution 02**

CUST <- **σ** CUST\_STATE= Florida (CUSTOMER),

RESULT <- π CUST\_LAST, CUST\_FIRST, CUST\_ADDRESS (CUST)

**Solution 03**

COMP <- **σ** PROD\_CATEGORY = Computer ^ PROD\_PRICE> $100 (PRODUCT),

RESULT <- π PROD\_DESCRIPTION, PROD\_PRICE (COMP)

**Solution 04**

COMP <- **σ** PROD\_CATEGORY = Computer v Game (PRODUCT),

RESULT <- π PROD\_DESCRIPTION, PROD\_PRICE (COMP)

**Solution 05**

ORD\_RESULT <- **σ** ORDER\_DATE = 01-01-2016 (ORDERS),

CUST <- CUSTOMER ⟕(CUSTOMER.CUST\_ID = ORD\_RESULT.CUST\_ID) ORD\_RESULT

RESULT <- π CUST\_LAST, CUST\_FIRST, CUST\_ADDRESS (CUST)

**Solution 06**

ORD\_RESULT <- **σ** ORDER\_DATE = 01-01-2016 (ORDERS),

PROD <- PRODUCT ⟕( PRODUCT.CUST\_ID = ORD\_RESULT.CUST\_ID) ORD\_RESULT

RESULT <- π PROD\_DESCRIPTION, PROD\_PRICE (PROD)

**Solution 07**

TV <- **σ** PROD\_CATEGORY = TV (PRODUCT),

ORD\_RESULT <- ORDER ⟕( ORDER.PROD\_ID = TV.PROD\_ID) TV

CUST <- **σ** CUST\_STATE= Florida (CUSTOMER),

CUST\_RESULT <- CUST ⟕( CUST.CUST\_ID = ORD\_RESULT.CUST\_ID) ORD\_RESULT

RESULT <- π CUST\_LAST, CUST\_FIRST, CUST\_ADDRESS (CUST\_RESULT)

**Solution 08**

Count the customer after renaming the CUST\_LAST, CUST\_FIRST from the result by retrieving Name and Address of all customers who live in Florida, who purchased product “TV”.

TV <- **σ** PROD\_CATEGORY = TV (PRODUCT),

ORD\_RESULT <- ORDER ⟕( ORDER.PROD\_ID = TV.PROD\_ID) TV

CUST <- **σ** CUST\_STATE= Florida (CUSTOMER),

CUST\_RESULT <- CUST ⟕( CUST.CUST\_ID = ORD\_RESULT.CUST\_ID) ORD\_RESULT

RESULT1 <- π CUST\_LAST, CUST\_FIRST, CUST\_ADDRESS (CUST\_RESULT)

RESULT2 <- ρ LAST\_NAME, FIRST\_NAME, CUST\_ADDRESS (CUST\_RESULT)

RESULT <- ℱCOUNT LAST\_NAME (RESULT2)

**Solution 09**

Retrieve Product Description and Price for the products that were purchased on 02-12-2016. Then rename PROD\_DESCRIPTION and after that find the Maximum price of product.

ORD\_RESULT <- **σ** ORDER\_DATE = 02-12-2016 (ORDERS),

PROD <- PRODUCT ⟕( PRODUCT.CUST\_ID = ORD\_RESULT.CUST\_ID) ORD\_RESULT

RESULT1 <- π PROD\_DESCRIPTION, PROD\_PRICE (PROD)

RESULT2 <- ρ DESCRIPTION, PRICE (RESULT1)

RESULT <- ℱMAX PRICE (RESULT2)

**Solution 10**

Retrieve Product Description and Price for the products that were purchased on 07-05-2016. Then rename PROD\_DESCRIPTION and after that find the Minimum price of product.

ORD\_RESULT <- **σ** ORDER\_DATE = 07-05-2016 (ORDERS),

PROD <- PRODUCT ⟕( PRODUCT.CUST\_ID = ORD\_RESULT.CUST\_ID) ORD\_RESULT

RESULT1 <- π PROD\_DESCRIPTION, PROD\_PRICE (PROD)

RESULT2 <- ρ DESCRIPTION, PRICE (RESULT1)

RESULT <- ℱMIN PRICE (RESULT2)