

JOBSHEET 1

Database



Agna Putra Prawira (2341720065)

Class 2I / 01

**STUDY PROGRAM D-IV TEKNIK INFORMATIKA
INFORMATION TECHNOLOGY MAJOR
POLITEKNIK NEGERI MALANG**

Jl. Soekarno Hatta No. 9 Malang 65144

Percobaan 1 :

Code :

```
SQLQuery1.sql - LA...L9EJTU3\user (71))* -# X SetupTSQL2012Samp...9EJTU3\user (52))

-- Try to create data own database
-- Use batch separator (go) to make sure CRAETE finishes first
CREATE DATABASE TestII2I;
go -- batch 1

USE TestII2I;
go -- batch 2

-- Database context
-- Change database context by using USE statement
-- Or by selecting form top-left corner combo-box

SELECT * FROM HR.Employees;
```

Result :

empid	lastname	firstname	title	titleofcourtesy	birthdate	hiredate	address	city	region	postalcode	country	phone	mgrid
1	Davis	Sara	CEO	Ms.	1958-12-08 00:00:00.000	2002-05-01 00:00:00.000	7890 - 20th Ave. E. Apt. 2A	Seattle	WA	10003	USA	(206) 555-0101	NULL
2	Funk	Don	Vice President, Sales	Dr.	1962-02-19 00:00:00.000	2002-08-14 00:00:00.000	9012 W. Capital Way	Tacoma	WA	10001	USA	(206) 555-0100	1
3	Lew	Judy	Sales Manager	Ms.	1973-08-30 00:00:00.000	2002-04-01 00:00:00.000	2345 Moss Bay Blvd.	Kirkland	WA	10007	USA	(206) 555-0103	2
4	Petel	Yael	Sales Representative	Mrs.	1947-09-19 00:00:00.000	2003-05-03 00:00:00.000	5678 Old Redmond Rd.	Redmond	WA	10009	USA	(206) 555-0104	3
5	Buck	Sven	Sales Manager	Mr.	1965-03-04 00:00:00.000	2003-10-17 00:00:00.000	8901 Garrett Hill	London	NULL	10004	UK	(71) 234-5678	2
6	Suurs	Paul	Sales Representative	Mr.	1973-07-02 00:00:00.000	2003-10-17 00:00:00.000	3456 Coventry House, Miner Rd.	London	NULL	10005	UK	(71) 345-6789	5
7	King	Russell	Sales Representative	Mr.	1970-05-29 00:00:00.000	2004-01-02 00:00:00.000	6789 Edgeham Hollow, Winchester Way	London	NULL	10002	UK	(71) 123-4567	5
8	Cameron	Maria	Sales Representative	Ms.	1968-01-09 00:00:00.000	2004-03-05 00:00:00.000	4567 - 11th Ave. N.E.	Seattle	WA	10006	USA	(206) 555-0102	3
9	Dolgopiatova	Zoya	Sales Representative	Ms.	1976-01-27 00:00:00.000	2004-11-15 00:00:00.000	1234 Houndstooth Rd.	London	NULL	10008	UK	(71) 456-7890	5

Percobaan 2:

Code:

```
-- Predicates and Operator
-- Example of one predicate (IN)
-- Show orders data from certain city

SELECT * FROM Sales.Orders
WHERE shipcity IN ('Lyon', 'Rio de Janeiro'); -- This is predicate
```

Result :

	orderid	custid	empid	orderdate	requireddate	shippeddate	shipperid	freight	shipname	shipaddress	shipcity	shipregion	shippostalcode	shipcountry
1	10250	34	4	2006-07-08 00:00:00.000	2006-08-05 00:00:00.000	2006-07-12 00:00:00.000	2	65.83	Destination SCQXA	Rua do Paço, 7890	Rio de Janeiro	RJ	10195	Brazil
2	10251	84	3	2006-07-08 00:00:00.000	2006-08-05 00:00:00.000	2006-07-15 00:00:00.000	1	41.34	Ship to 84-A	3456, rue du Commerce	Lyon	NULL	10342	France
3	10253	34	3	2006-07-10 00:00:00.000	2006-07-24 00:00:00.000	2006-07-16 00:00:00.000	2	58.17	Destination JPAIT	Rua do Paço, 8901	Rio de Janeiro	RJ	10196	Brazil
4	10261	61	4	2006-07-19 00:00:00.000	2006-08-16 00:00:00.000	2006-07-30 00:00:00.000	2	3.05	Ship to 61-B	Rua da Panificadora, 6789	Rio de Janeiro	RJ	10274	Brazil
5	10287	67	8	2006-08-22 00:00:00.000	2006-09-19 00:00:00.000	2006-08-28 00:00:00.000	3	12.76	Ship to 67-A	Av. Copacabana, 3456	Rio de Janeiro	RJ	10291	Brazil
6	10291	61	6	2006-08-27 00:00:00.000	2006-09-24 00:00:00.000	2006-09-04 00:00:00.000	2	6.40	Ship to 61-A	Rua da Panificadora, 5678	Rio de Janeiro	RJ	10273	Brazil
7	10299	67	4	2006-09-06 00:00:00.000	2006-10-04 00:00:00.000	2006-09-13 00:00:00.000	2	29.76	Ship to 67-A	Av. Copacabana, 3456	Rio de Janeiro	RJ	10291	Brazil
8	10334	84	8	2006-10-21 00:00:00.000	2006-11-18 00:00:00.000	2006-10-28 00:00:00.000	2	8.56	Ship to 84-B	4567, rue du Commerce	Lyon	NULL	10343	France
9	10379	61	2	2006-12-11 00:00:00.000	2007-03-04 00:00:00.000	2006-12-13 00:00:00.000	1	45.03	Ship to 61-B	Rua da Panificadora, 6789	Rio de Janeiro	RJ	10274	Brazil
10	10421	61	8	2007-01-21 00:00:00.000	2007-03-04 00:00:00.000	2007-01-27 00:00:00.000	1	99.23	Ship to 61-C	Rua da Panificadora, 7890	Rio de Janeiro	RJ	10275	Brazil
11	10447	67	4	2007-02-14 00:00:00.000	2007-03-14 00:00:00.000	2007-03-07 00:00:00.000	2	68.66	Ship to 67-C	Av. Copacabana, 5678	Rio de Janeiro	RJ	10293	Brazil
12	10450	84	8	2007-02-19 00:00:00.000	2007-03-19 00:00:00.000	2007-03-11 00:00:00.000	2	7.23	Ship to 84-C	5678, rue du Commerce	Lyon	NULL	10344	France
13	10459	84	4	2007-02-27 00:00:00.000	2007-03-27 00:00:00.000	2007-02-28 00:00:00.000	2	25.09	Ship to 84-B	4567, rue du Commerce	Lyon	NULL	10343	France
14	10478	84	2	2007-03-18 00:00:00.000	2007-04-01 00:00:00.000	2007-03-28 00:00:00.000	3	4.81	Ship to 84-C	5678, rue du Commerce	Lyon	NULL	10344	France
15	10481	67	8	2007-03-20 00:00:00.000	2007-04-17 00:00:00.000	2007-03-25 00:00:00.000	2	64.33	Ship to 67-A	Av. Copacabana, 3456	Rio de Janeiro	RJ	10291	Brazil
16	10541	34	2	2007-05-19 00:00:00.000	2007-06-16 00:00:00.000	2007-05-29 00:00:00.000	1	68.65	Destination SCQXA	Rua do Paço, 7890	Rio de Janeiro	RJ	10195	Brazil
17	10546	84	1	2007-05-23 00:00:00.000	2007-06-20 00:00:00.000	2007-05-23 00:00:00.000	2	104.4	Ship to 84-C	5678, rue du Commerce	Lyon	NULL	10344	France

Percobaan 3 :

Code :

```
-- Operator
-- Operator is smoehtinh between 2 words an/ir value.
-- When it is evaluated, it will returns another value.
-- Example of operator * and -
-- Show the total price from each item in Sales.OrderDetails
-- TP = UP * Qty * (1 - discount)

SELECT
    * ,
    unitprice * qty * (1 - discount) AS totalprice
FROM Sales.OrderDetails;
```

Result:

	orderid	productid	unitprice	qty	discount	totalprice
1	10248	11	14.00	12	0.000	168.0000000
2	10248	42	9.80	10	0.000	98.0000000
3	10248	72	34.80	5	0.000	174.0000000
4	10249	14	18.60	9	0.000	167.4000000
5	10249	51	42.40	40	0.000	1696.0000000
6	10250	41	7.70	10	0.000	77.0000000
7	10250	51	42.40	35	0.150	1261.4000000
8	10250	65	16.80	15	0.150	214.2000000
9	10251	22	16.80	6	0.050	95.7600000
10	10251	57	15.60	15	0.050	222.3000000
11	10251	65	16.80	20	0.000	336.0000000
12	10252	20	64.80	40	0.050	2462.4000000
13	10252	33	2.00	25	0.050	47.5000000
14	10252	60	27.20	40	0.000	1088.0000000
15	10253	31	10.00	20	0.000	200.0000000
16	10253	39	14.40	42	0.000	604.8000000

Percobaan 4 :

Code:

```
-- Contatenation operator
-- This is to combine 2 or more strings
-- By using plus (+) sign.
-- Example:
-- Show full name of the employee!

SELECT
    * ,
    (titleofcourtesy + ' ' + firstname + ' ' + lastname) AS fullname
FROM HR.Employees;
```

Result:

	empid	lastname	firstname	title	titleofcourtesy	birthdate	hiredate	address	city	region	postalcode	country	phone	mgrid	fullname
1	1	Davis	Sara	CEO	Ms.	1958-12-08 00:00:00.000	2002-05-01 00:00:00.000	7890 - 20th Ave. E., Apt. 2A	Seattle	WA	10003	USA	(206) 555-0101	NULL	Ms. Sara Davis
2	2	Funk	Don	Vice President, Sales	Dr.	1962-02-19 00:00:00.000	2002-08-14 00:00:00.000	9012 W. Capital Way	Tacoma	WA	10001	USA	(206) 555-0100	1	Dr. Don Funk
3	3	Lew	Judy	Sales Manager	Ms.	1973-08-30 00:00:00.000	2002-04-01 00:00:00.000	2345 Moss Bay Blvd.	Kirkland	WA	10007	USA	(206) 555-0103	2	Ms. Judy Lew
4	4	Pelid	Yael	Sales Representative	Mrs.	1947-09-19 00:00:00.000	2003-05-03 00:00:00.000	5678 Old Redmond Rd.	Redmond	WA	10009	USA	(206) 555-0104	3	Mrs. Yael Pelid
5	5	Buck	Sven	Sales Manager	Mr.	1965-03-04 00:00:00.000	2003-10-17 00:00:00.000	8901 Garret Hill	London	NULL	10004	UK	(71) 234-5678	2	Mr. Sven Buck
6	6	Sturs	Paul	Sales Representative	Mr.	1973-07-02 00:00:00.000	2003-10-17 00:00:00.000	3456 Coventry House, Miner Rd.	London	NULL	10005	UK	(71) 345-6789	5	Mr. Paul Sturs
7	7	King	Russell	Sales Representative	Mr.	1970-05-29 00:00:00.000	2004-01-02 00:00:00.000	6789 Edgemoor Hollow, Winchester Way	London	NULL	10002	UK	(71) 123-4567	5	Mr. Russell King
8	8	Cameron	Maria	Sales Representative	Ms.	1968-01-09 00:00:00.000	2004-03-05 00:00:00.000	4567 - 11th Ave. N.E.	Seattle	WA	10006	USA	(206) 555-0102	3	Ms. Maria Cameron
9	9	Dolgopiatova	Zoya	Sales Representative	Ms.	1976-01-27 00:00:00.000	2004-11-15 00:00:00.000	1234 Houndstooth Rd.	London	NULL	10008	UK	(71) 456-7890	5	Ms. Zoya Dolgopiatova

Percobaan 5 :

1. Code :

```
-- Function
-- It is something thhat processes inout to become output
-- It is marked with () at its end.
-- Several examples of function:

-- String function to take certain number of chars from the right side.
-- Case: Show only the customers that are manager!
SELECT * FROM Sales.Customers
WHERE RIGHT(contacttitle, 7) = 'Manager'; -- Built -in function RIGHT()
-- we can also show the result :
SELECT RIGHT(contacttitle,7) AS manager FROM Sales.Customers;
```

1. Result :

	custid	companyname	contactname	contacttitle	address	city	region	postalcode	country	phone	fax
1	7	Customer OXVLA	Bansal, Dushyant	Marketing Manager	2345, place Kléber	Strasbourg	NULL	10089	France	67 89 01 23	67 89 01 24
2	10	Customer EEALV	Bassols, Pilar Colome	Accounting Manager	8901 Taawassen Blvd.	Taawassen	BC	10111	Canada	(604) 901-2345	(604) 678-9012
3	13	Customer VMLOG	Benito, Almudena	Marketing Manager	Sierras de Granada 7890	México D.F.	NULL	10056	Mexico	(5) 456-7890	(5) 123-4567
4	20	Customer THHDP	Kane, John	Sales Manager	Kirchgasse 9012	Graz	NULL	10059	Austria	1234-5678	9012-3456
5	22	Customer DTDMM	Bueno, Janaina Burdan, Neville	Accounting Manager	O/ Moralzarsal, 5678	Madrid	NULL	10080	Spain	(91) 890 12 34	(91) 567 89 01
6	25	Customer AZJED	Carlson, Jason	Marketing Manager	Berliner Platz 9012	München	NULL	10091	Germany	089-8901234	089-5678901
7	26	Customer USDBG	Koch, Paul	Marketing Manager	9012, rue Royale	Nantes	NULL	10101	France	34 56 78 90	34 56 78 91
8	28	Customer XYUFB	Cavaglieri, Giorgio	Sales Manager	Jardim das rosas n. 8901	Lisboa	NULL	10054	Portugal	(1) 456-7890	(1) 123-4567

manager
1 ntative
2 Owner
3 Owner
4 ntative
5 strator
6 ntative
7 Manager

2. Code

```
-- we can also show the result :
SELECT RIGHT(contacttitle,7) AS manager FROM Sales.Customers;
```

2.Result :

	manager
1	ntative
2	Owner
3	Owner
4	ntative
5	strator
6	ntative
7	Manager
8	Owner
9	Owner
10	Manager
11	ntative
12	s Agent
13	Manager
14	Owner
15	sociate
16	ntative
17	strator

Percobaan 6:

1. Code:

```
--Another example of function (Date Function)
--To get current system time
SELECT SYSDATETIME() AS currenttime;
```

1. Percobaan :

	currenttime
1	2024-09-09 22:15:51.5211690

Percobaan 7:

1. Code :

```
-- Another example of function, the SUM() aggeration function
-- Example Case: Count the total number of ALL sold itmes!
SELECT SUM(qty) AS TotalSold FROM Sales.OrderDetails;
```

1. Result:

	TotalSold
1	51317

Percobaan 8:

1.Code:

```
-- Variabels: Something taht we can use to store temporary value
-- Declaring variable:
DECLARE @Year AS INT = 2007;
```

2.Result:

Messages
Commands completed successfully.
Completion time: 2024-09-09T22:31:07.0932215+07:00

Percobaan 9:

Code:

```
-- Showing the value of a variable:
```

```
SELECT 2007;
```

Result:

	(No column name)
1	2007

Percobaan 10:

Code:

```
-- We can also use variable in as SELECT statement
-- Example case: Show the orders data based on the year in variable
SELECT * FROM Sales.Orders
WHERE YEAR(shippeddate) = 2007;
```

Result:

	orderid	custid	empid	orderdate	requireddate	shippeddate	shipperid	freight	shipname	shipaddress	shipcity	shipregion	shippostalcode	shipcountry
1	10380	37	8	2006-12-12 00:00:00.000	2007-01-09 00:00:00.000	2007-01-16 00:00:00.000	3	35.03	Destination KPYVJ	5678 Johnstown Road	Cork	Co. Cork	10203	Ireland
2	10382	59	2	2006-12-24 00:00:00.000	2007-01-21 00:00:00.000	2007-01-01 00:00:00.000	3	122.46	Ship to 59-A	Gesilweg 6789	Salzburg	NULL	10264	Austria
3	10393	71	1	2006-12-25 00:00:00.000	2007-01-22 00:00:00.000	2007-01-03 00:00:00.000	3	126.56	Ship to 71-B	8901 Suffolk Ln.	Boise	ID	10306	USA
4	10394	36	1	2006-12-25 00:00:00.000	2007-01-22 00:00:00.000	2007-01-03 00:00:00.000	3	30.34	Destination AWPJG	City Center Plaza 2345 Main St.	Elgin	OR	10200	USA
5	10395	35	6	2006-12-26 00:00:00.000	2007-01-23 00:00:00.000	2007-01-03 00:00:00.000	1	194.41	Destination JYDLM	Camera 1234 con Ave. Carlos Scoublette #8-35	San Cristobal	Tachira	10199	Venezuela
6	10396	25	1	2006-12-27 00:00:00.000	2007-01-10 00:00:00.000	2007-01-06 00:00:00.000	3	135.35	Destination VAPXU	Berliner Platz 0123	Munchen	NULL	10168	Germany
7	10397	60	5	2006-12-27 00:00:00.000	2007-01-24 00:00:00.000	2007-01-02 00:00:00.000	1	60.26	Ship to 60-A	Estrada da saude n. 2345	Lisboa	NULL	10270	Portugal
8	10398	71	2	2006-12-30 00:00:00.000	2007-01-27 00:00:00.000	2007-01-09 00:00:00.000	3	89.16	Ship to 71-C	9012 Suffolk Ln.	Boise	ID	10307	USA
9	10399	83	8	2006-12-31 00:00:00.000	2007-01-14 00:00:00.000	2007-01-08 00:00:00.000	3	27.36	Ship to 83-C	Smagsloget 2345	Aarhus	NULL	10341	Denmark
10	10400	19	1	2007-01-01 00:00:00.000	2007-01-29 00:00:00.000	2007-01-16 00:00:00.000	3	83.93	Destination BBMRT	4567 King George	London	NULL	10152	UK
11	10401	65	1	2007-01-01 00:00:00.000	2007-01-29 00:00:00.000	2007-01-10 00:00:00.000	1	12.51	Ship to 65-A	7890 Milton Dr.	Albuquerque	NM	10285	USA
12	10402	20	8	2007-01-02 00:00:00.000	2007-02-13 00:00:00.000	2007-01-10 00:00:00.000	2	67.88	Destination FFJKT	Kirchgasse 0123	Graz	NULL	10158	Austria
13	10403	20	4	2007-01-03 00:00:00.000	2007-01-31 00:00:00.000	2007-01-09 00:00:00.000	3	73.79	Destination RYDMF	Kirchgasse 9012	Graz	NULL	10157	Austria
14	10404	49	2	2007-01-03 00:00:00.000	2007-01-31 00:00:00.000	2007-01-08 00:00:00.000	1	155.97	Ship to 49-B	Via Ludovico il Moro 9012	Bergamo	NULL	10236	Italy
15	10405	47	1	2007-01-06 00:00:00.000	2007-02-03 00:00:00.000	2007-01-22 00:00:00.000	1	34.82	Ship to 47-B	Ave. 5 de Mayo Portamar 4567	I. de Margarita	Nueva Esparta	10231	Venezuela
16	10406	62	7	2007-01-07 00:00:00.000	2007-02-18 00:00:00.000	2007-01-13 00:00:00.000	1	108.04	Ship to 62-A	Alameda dos Caninos, 8901	Sao Paulo	SP	10276	Brazil

Percobaan 11:

Code:

```
-- Control of Flow
-- Is a kind of T-SQL elements that allows us to use it like programming
-- Example: BEGIN..END
-- Example case: Create a function to count total weight of sales based
-- On certain given year.
CREATE FUNCTION CalculateTotalFreight(@Year INT) RETURNS FLOAT AS
BEGIN
    DECLARE @Total AS FLOAT;
    SELECT @Total = SUM(freight) FROM Sales.Orders WHERE YEAR(shippeddate) = @Year;
    RETURN @Total;
END
```

Percobaan 12:

1. Code :

```
-- Use the Function
SELECT dbo.CalculateTotalFreight(2006);
```

1. Result:

	(No column name)
1	9468.94

2. Code:

```
SELECT
dbo.CalculateTotalFreight(2006) As Total2006,
dbo.CalculateTotalFreight(2006) As Total2007;
```

2. Result:

	Total2006	Total2007
1	9468.94	9468.94

Percobaan 13

1.

```
-- CASE:This is like Branching but it is used an expression
--      in a SELECT statement
-- CASE is not a type of control flow
-- Example:
-- Show the category name of products based o the category id.

SELECT
    *
    CASE categoryid
        WHEN 1 THEN 'Food'
        WHEN 2 THEN 'Medicine'
        WHEN 3 THEN ' Drinks'
        ELSE 'Unknown Category'
    END
    AS CategoryName
FROM Production.Products;
```

1.Result:

	productid	productname	supplierid	categoryid	unitprice	discontinued	CategoryName
1	1	Product HHYDP	1	1	18.00	0	Food
2	2	Product RECZE	1	1	19.00	0	Food
3	3	Product IMEHJ	1	2	10.00	0	Medicine
4	4	Product KSBRM	2	2	22.00	0	Medicine
5	5	Product EPEIM	2	2	21.35	1	Medicine
6	6	Product VALIV	3	2	25.00	0	Medicine
7	7	Product HMLNI	3	7	30.00	0	Unknown Category
8	8	Product WJFJP	3	2	40.00	0	Medicine
9	9	Product AOZBW	4	6	97.00	1	Unknown Category
10	10	Product YHXGE	4	8	31.00	0	Unknown Category
11	11	Product QMVUN	5	4	21.00	0	Unknown Category
12	12	Product OSFNS	5	4	38.00	0	Unknown Category
13	13	Product POXFU	6	8	6.00	0	Unknown Category
14	14	Product PWCJB	6	7	23.25	0	Unknown Category