

Sri Lanka Institute of Information Technology

IT3020 - Database Systems (DBS)

Laboratory Worksheet 01

Create Client Table

```
CREATE TABLE client (
    clno CHAR(3) PRIMARY KEY,
    name VARCHAR(12),
    address VARCHAR(30)
);
```

Create Stock Table

```
CREATE TABLE stock (
    company CHAR(7) PRIMARY KEY,
    price number(6,2),
    dividend number(4,2),
    eps number(4,2)
);
```

Create Trading Table

```
CREATE TABLE trading (
    company CHAR(7),
    exchange VARCHAR(12),
    PRIMARY KEY (company, exchange),
    FOREIGN KEY (company) REFERENCES stock(company)
);
```

Create Purchase Table

```
CREATE TABLE purchase (
    clno CHAR(3),
    company CHAR(7),
    pdate DATE,
    qty NUMBER(6),
    price NUMBER(6,2),
    PRIMARY KEY (clno, company, pdate),
    FOREIGN KEY (clno) REFERENCES client(clno),
    FOREIGN KEY (company) REFERENCES stock(company)
);
```

Insert into CLIENT Table

```
INSERT INTO client VALUES ('c01', 'John Smith', '3 East Av, Bentley, WA 6102');  
INSERT INTO client VALUES ('c02', 'Jill Brody ', '42 Bent St, Perth, WA 6001');
```

Insert into STOCK Table

```
INSERT INTO stock VALUES ('BHP', 10.50, 1.50, 3.20);  
INSERT INTO stock VALUES ('IBM', 70.00, 4.25, 10.00);  
INSERT INTO stock VALUES ('INTEL', 76.50, 5.00, 12.40);  
INSERT INTO stock VALUES ('FORD', 40.00, 2.00, 8.50);  
INSERT INTO stock VALUES ('GM', 60.00, 2.50, 9.20);  
INSERT INTO stock VALUES ('INFOSYS', 45.00, 3.00, 7.80);
```

Insert into TRADING Table

```
INSERT INTO trading VALUES ('BHP', 'Sydney');  
INSERT INTO trading VALUES ('BHP', 'New York');  
  
INSERT INTO trading VALUES ('IBM', 'New York');  
INSERT INTO trading VALUES ('BHP', 'London');  
INSERT INTO trading VALUES ('BHP', 'Tokyo');  
  
INSERT INTO trading VALUES ('INTEL', 'New York');  
INSERT INTO trading VALUES ('INTEL', 'London');  
  
INSERT INTO trading VALUES ('FORD', 'New York');  
  
INSERT INTO trading VALUES ('GM', 'New York');  
  
INSERT INTO trading VALUES ('INFOSYS', 'New York');
```

Insert Data into Purchase

```
INSERT INTO purchase VALUES ('c01', 'BHP', TO_DATE('02-10-2001','DD-MM-YYYY'), 1000, 12.00);  
INSERT INTO purchase VALUES ('c01', 'BHP', TO_DATE('08-06-2002','DD-MM-YYYY'), 2000, 10.50);  
INSERT INTO purchase VALUES ('c01', 'IBM', TO_DATE('12-02-2000','DD-MM-YYYY'), 500, 58.00);  
INSERT INTO purchase VALUES ('c01', 'IBM', TO_DATE('10-04-2001','DD-MM-YYYY'), 1200, 65.00);  
INSERT INTO purchase VALUES ('c01', 'INFOSYS', TO_DATE('11-08-2001','DD-MM-YYYY'), 1000, 64.00);  
  
INSERT INTO purchase VALUES ('c02', 'INTEL', TO_DATE('30-01-2000','DD-MM-YYYY'), 300, 35.00);  
INSERT INTO purchase VALUES ('c02', 'INTEL', TO_DATE('30-01-2001','DD-MM-YYYY'), 400, 54.00);  
INSERT INTO purchase VALUES ('c02', 'INTEL', TO_DATE('02-10-2001','DD-MM-YYYY'), 200, 60.00);  
INSERT INTO purchase VALUES ('c02', 'FORD', TO_DATE('05-10-1999','DD-MM-YYYY'), 300, 40.00);  
INSERT INTO purchase VALUES ('c02', 'GM', TO_DATE('12-12-2000','DD-MM-YYYY'), 500, 55.50);
```

a) Query – Client investments with stock details

```
SELECT c.name,
       s.company,
       s.price,
       s.dividend,
       s.eps
  FROM client c
 JOIN purchase p ON c.clno = p.clno
 JOIN stock s ON p.company = s.company;
```

b) Query – Total shares & average purchase price

```
SELECT c.name,
       p.company,
       SUM(p.qty) AS total_shares,
       SUM(p.qty * p.price) / SUM(p.qty) AS avg_purchase_price
  FROM client c
 JOIN purchase p ON c.clno = p.clno
 GROUP BY c.name, p.company;
```

c) Query – New York stocks & current value

```
SELECT s.company,
       c.name,
       SUM(p.qty) AS total_shares,
       SUM(p.qty) * s.price AS current_value
  FROM client c
 JOIN purchase p ON c.clno = p.clno
 JOIN stock s ON p.company = s.company
 JOIN trading t ON s.company = t.company
 WHERE t.exchange = 'New York'
 GROUP BY s.company, c.name, s.price;
```

d) Query – Total purchase value per client

```
SELECT c.name,
       SUM(p.qty * p.price) AS
total_purchase_value
  FROM client c
 JOIN purchase p ON c.clno =
p.clno
 GROUP BY c.name;
```

e) *Query – Book profit / loss*

```
SELECT c.name,  
       (SUM(p.qty * s.price) - SUM(p.qty * p.price)) AS book_profit  
  FROM client c  
 JOIN purchase p ON c.clno = p.clno  
 JOIN stock s ON p.company = s.company  
 GROUP BY c.name;
```

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