

Εργασία Μέρος Β

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Ζήτημα Πρώτο

1.

```
--(copy)
SELECT * INTO LIBDW.dbo.authors FROM LIBRARY.dbo.authors; SELECT * INTO LIBDW.dbo.bibauthors FROM LIBRARY.dbo.bibauthors;
SELECT * INTO LIBDW.dbo.bibreces FROM LIBRARY.dbo.bibreces; SELECT * INTO LIBDW.dbo.bibterms FROM LIBRARY.dbo.bibterms;
SELECT * INTO LIBDW.dbo.borrowers FROM LIBRARY.dbo.borrowers; SELECT * INTO LIBDW.dbo.copies FROM LIBRARY.dbo.copies;
SELECT * INTO LIBDW.dbo.departments FROM LIBRARY.dbo.departments; SELECT * INTO LIBDW.dbo.loanstats FROM LIBRARY.dbo.loanstats;
SELECT * INTO LIBDW.dbo.publishers FROM LIBRARY.dbo.publishers; SELECT * INTO LIBDW.dbo.sterms FROM LIBRARY.dbo.sterms;

ALTER TABLE authors
    ADD CONSTRAINT authors_pkey PRIMARY KEY (aid);
ALTER TABLE bibauthors
    ADD CONSTRAINT bibauthors_pkey PRIMARY KEY (bibno, aid);

ALTER TABLE bibreces
    ADD CONSTRAINT bibreces_pkey PRIMARY KEY (bibno);

ALTER TABLE bibterms
    ADD CONSTRAINT bibterms_pkey PRIMARY KEY (bibno, tid);

ALTER TABLE borrowers
    ADD CONSTRAINT borrowers_pkey PRIMARY KEY (bid);

ALTER TABLE copies
    ADD CONSTRAINT copies_pkey PRIMARY KEY (copyno);

ALTER TABLE departments
    ADD CONSTRAINT departments_pkey PRIMARY KEY (depcode);

ALTER TABLE loanstats
    ADD CONSTRAINT loanstats_pkey PRIMARY KEY (lid);

ALTER TABLE publishers
    ADD CONSTRAINT publishers_pkey PRIMARY KEY (pubid);

ALTER TABLE sterms
    ADD CONSTRAINT sterms_pkey PRIMARY KEY (tid);

ALTER TABLE bibauthors
    ADD CONSTRAINT bibreces_to_bibauth_fkey FOREIGN KEY (bibno) REFERENCES bibreces (bibno),
    CONSTRAINT authors_to_bibauth_fkey FOREIGN KEY (aid) REFERENCES authors (aid);

ALTER TABLE bibreces
    ADD CONSTRAINT pubs_to_bibreces_fkey FOREIGN KEY (pubid) REFERENCES publishers (pubid);

ALTER TABLE bibterms
    ADD CONSTRAINT bibreces_to_bibter_fkey FOREIGN KEY (bibno) REFERENCES bibreces (bibno),
    CONSTRAINT terms_to_bibter_fkey FOREIGN KEY (tid) REFERENCES sterms (tid);

ALTER TABLE copies
    ADD CONSTRAINT bibreces_to_copies_fkey FOREIGN KEY (bibno) REFERENCES bibreces (bibno);

ALTER TABLE loanstats
    ADD CONSTRAINT borrow_fkey FOREIGN KEY (bid) REFERENCES borrowers (bid),
    CONSTRAINT copies_fkey FOREIGN KEY (copyno) REFERENCES copies (copyno);
```

Οι πίνακες είναι υπογραμμισμένοι καθώς το screenshot τραβήχτηκε αφού δημιουργήθηκαν.

2.

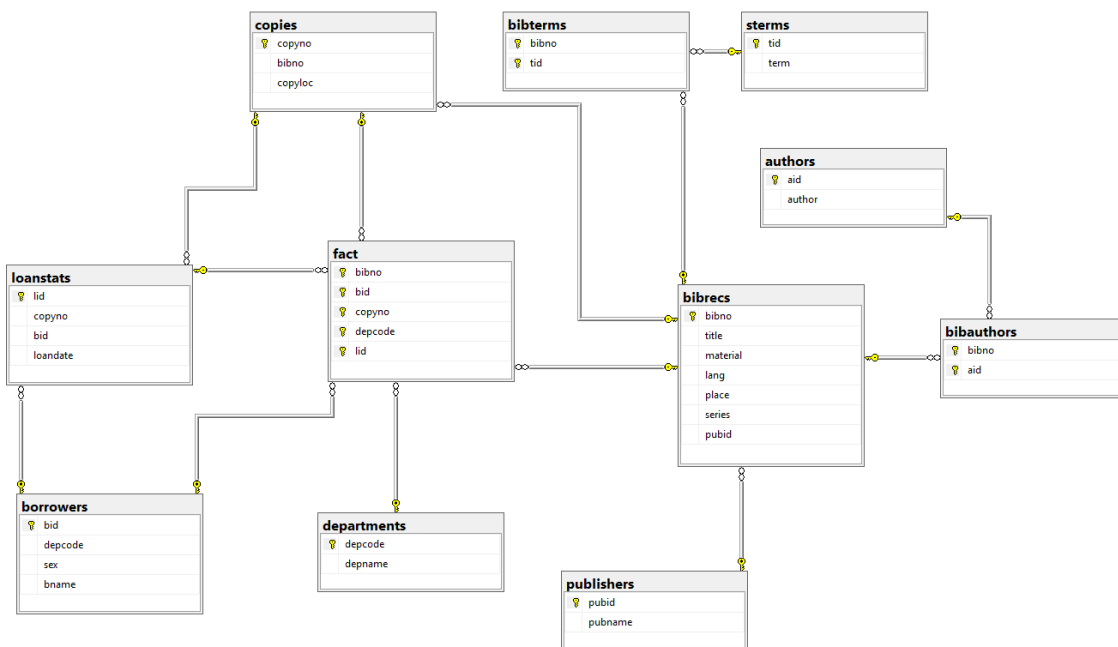
```
CREATE TABLE fact(
    bibno int,
    bid int,
    copyno char(8),
    deptime int,
    lid int

    PRIMARY KEY (bibno, bid, copyno, deptime, lid),
    FOREIGN KEY (bibno) REFERENCES bibreccs (bibno),
    FOREIGN KEY (bid) REFERENCES borrowers (bid),
    FOREIGN KEY (copyno) REFERENCES copies (copyno),
    FOREIGN KEY (deptime) REFERENCES departments (deptime),
    FOREIGN KEY (lid) REFERENCES loanstats (lid),
);
```

3.

```
INSERT INTO fact
SELECT bibreccs.bibno, borrowers.bid, copies.copyno, departments.deptime, loanstats.lid
FROM bibreccs
JOIN copies
ON copies.bibno = bibreccs.bibno
JOIN loanstats
ON loanstats.copyno = copies.copyno
JOIN borrowers
ON borrowers.bid = loanstats.bid
JOIN departments
ON departments.deptime = borrowers.deptime;
```

4.



Ζήτημα Δεύτερο

1.

```

SELECT COUNT(fact.lid) "Number of loans", fact.depcode, YEAR(loanstats.loandate) "Year"
FROM fact
JOIN loanstats
ON loanstats.lid = fact.lid
GROUP BY fact.depcode, YEAR(loanstats.loandate)
ORDER BY YEAR(loanstats.loandate);
  
```

2.

```

SELECT COUNT(fact.lid) "Number of loans", copies.copyloc, bibrecs.material
FROM fact
JOIN copies
ON copies.copyno = fact.copyno
JOIN bibrecs
ON bibrecs.bibno = fact.bibno
GROUP BY copies.copyloc, bibrecs.material
ORDER BY copies.copyloc;
  
```

3.

```

SELECT COUNT(fact.lid) "Number of loans", MONTH(loanstats.loandate) "Month", borrowers.sex
FROM fact
JOIN loanstats
ON loanstats.lid = fact.lid
JOIN borrowers
ON borrowers.bid = fact.bid
WHERE YEAR(loanstats.loandate) = 2000
GROUP BY MONTH(loanstats.loandate), borrowers.sex
ORDER BY MONTH(loanstats.loandate);

```

4.

```

SELECT COUNT(fact.lid) "Number of loans", MONTH(loanstats.loandate) "Month", YEAR(loanstats.loandate) "Year"
FROM fact
JOIN loanstats
ON loanstats.lid = fact.lid
GROUP BY MONTH(loanstats.loandate), YEAR(loanstats.loandate)
HAVING COUNT(fact.lid) > 800
ORDER BY YEAR(loanstats.loandate);

```

5.

```

SELECT COUNT(fact.lid) as "Total Loans", YEAR(loanstats.loandate) "Year", fact.decode, borrowers.sex
FROM fact
JOIN loanstats
ON loanstats.lid = fact.lid
JOIN borrowers
ON borrowers.bid = fact.bid
GROUP BY ROLLUP (YEAR(loanstats.loandate), fact.decode, borrowers.sex);

```

6.

```

SELECT fact.bid, fact.lid, fact.depcode INTO FemaleLoans
from fact
JOIN borrowers
ON borrowers.bid = fact.bid
where borrowers.sex = 'F';

SELECT fact.bid, fact.lid, fact.depcode INTO MaleLoans
from fact
JOIN borrowers
ON borrowers.bid = fact.bid
where borrowers.sex = 'M';

SELECT depcode
FROM MaleLoans
GROUP BY depcode
HAVING COUNT(lid) < (SELECT COUNT(lid)
                     FROM FemaleLoans
                     where FemaleLoans.depcode = MaleLoans.depcode)
ORDER BY depcode;

```

Ζήτημα Τρίτο

1.

```

SELECT COUNT(fact.lid) "Number of Loans", YEAR(loanstats.loandate) "Year", copies.copyloc, borrowers.sex
FROM fact
JOIN loanstats
ON fact.lid = loanstats.lid
JOIN copies
ON copies.copyno = fact.copyno
JOIN borrowers
ON borrowers.bid = fact.bid
GROUP BY CUBE(YEAR(loanstats.loandate), copies.copyloc, borrowers.sex);

```

2.

```
SELECT COUNT(fact.lid) "Number of Loans", YEAR(loanstats.loandate) "Year", copies.copyloc, borrowers.sex
FROM fact
JOIN loanstats
ON fact.lid = loanstats.lid
JOIN copies
ON copies.copyno = fact.copyno
JOIN borrowers
ON borrowers.bid = fact.bid
GROUP BY
    GROUPING SETS (
        (YEAR(loanstats.loandate), copies.copyloc, borrowers.sex),
        (YEAR(loanstats.loandate), copies.copyloc),
        (YEAR(loanstats.loandate), borrowers.sex),
        (copies.copyloc, borrowers.sex),
        (YEAR(loanstats.loandate)),
        (copies.copyloc),
        (borrowers.sex),
        ()
    );
```