

[http://gateoverflow.in/1742/gate1998\\_27](http://gateoverflow.in/1742/gate1998_27)

Here is my attempt:-

| COURSES |       |
|---------|-------|
| Cno.    | CName |
| 1       | C1    |
| 2       | C2    |
| 3       | C3    |

| PRE-REQ |         |
|---------|---------|
| Cno     | Pre-Cno |
| C1      | C2      |
| C1      | C3      |
| C2      | C3      |
| C3      | C1      |

| COMPLETED   |     |
|-------------|-----|
| Student_no. | Cno |
| 2300        | C1  |
| 2305        | C2  |
| 2310        | C3  |

Here student 2310 has completed C3. Now see, C3 is pre-requisite for what?,

C3 is pre-requisite for C2 only. And this query is asking us to print (retrieve) C2.

(In case 2310 completes C1 and C3, these two courses are pre-requisite for C3 and C2 respectively, Then C2 and C3 will be answer.)

How to print C2, given that 2310 completed C3?

This simple query won't work-  $\Pi_{\text{cno}}[\sigma_{\text{Student\_no.}=2310}(\text{COMPLETED}) \bowtie (\text{PRE-REQ})]$

It also retrieves C1, but all pre- requisites of C1 are not done by 2310, only some (in fact one ) pre-requisites are completed.

We can do it using Division Operator-

$\text{PRE-REQ} / \Pi_{\text{cno}}[\sigma_{\text{Student\_no.}=2310}(\text{COMPLETED})]$  (It is again wrong, it retrieves Pre-Cno, NOT Cno. And meaning of whole query changes.)

We first have to rename attributes then we can use division operator.