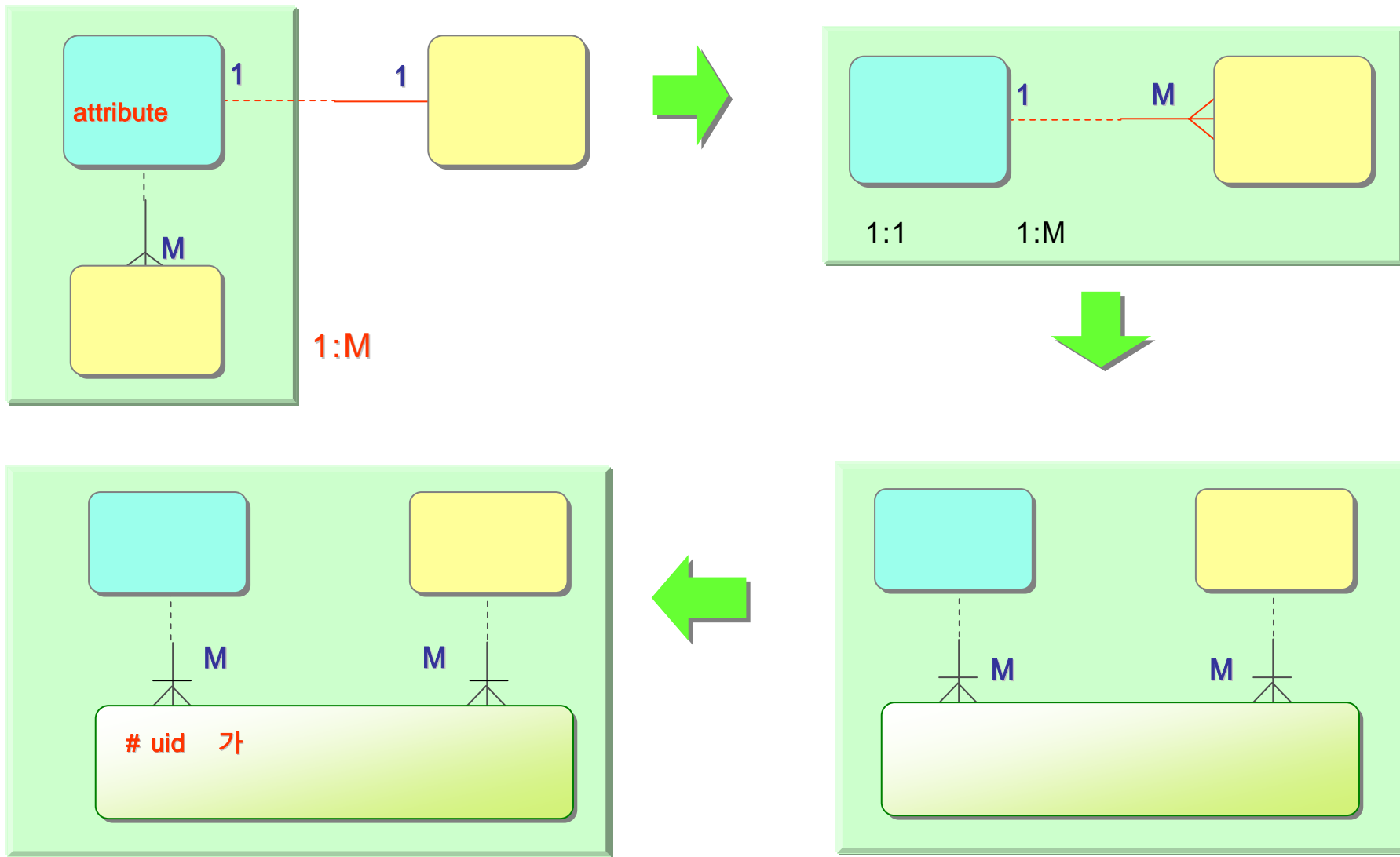
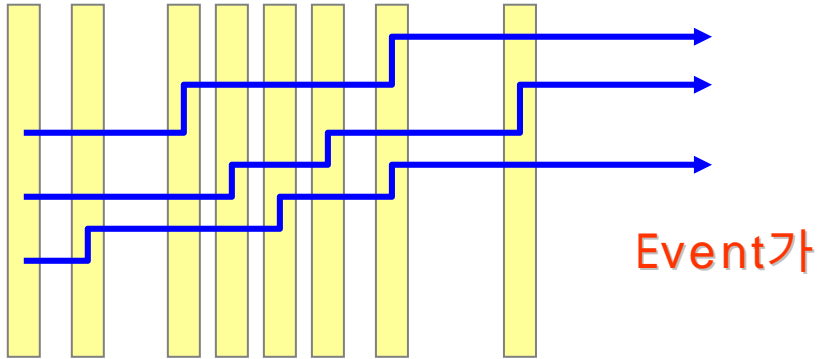


# 이력관리 시의 관계 변화



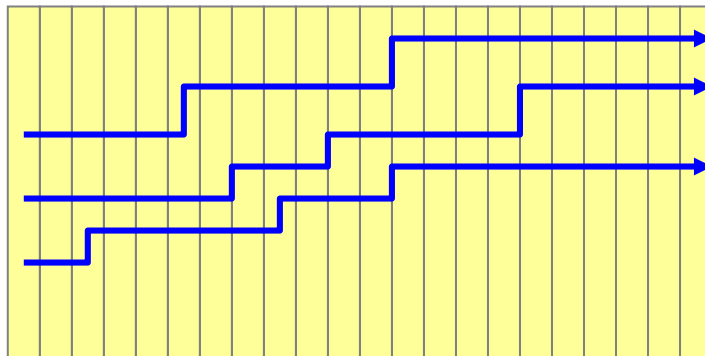
# 전통적인 이력관리 방법

EVENT



가?

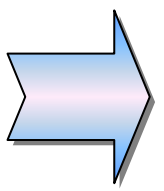
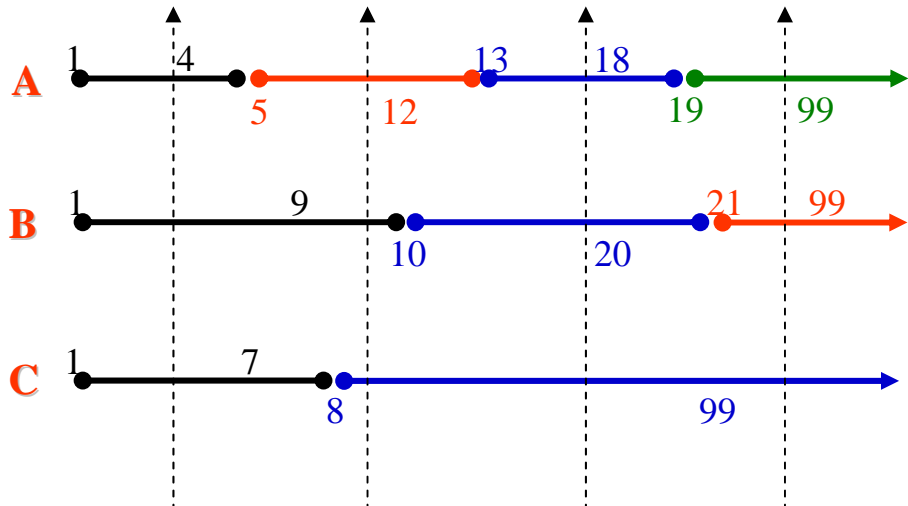
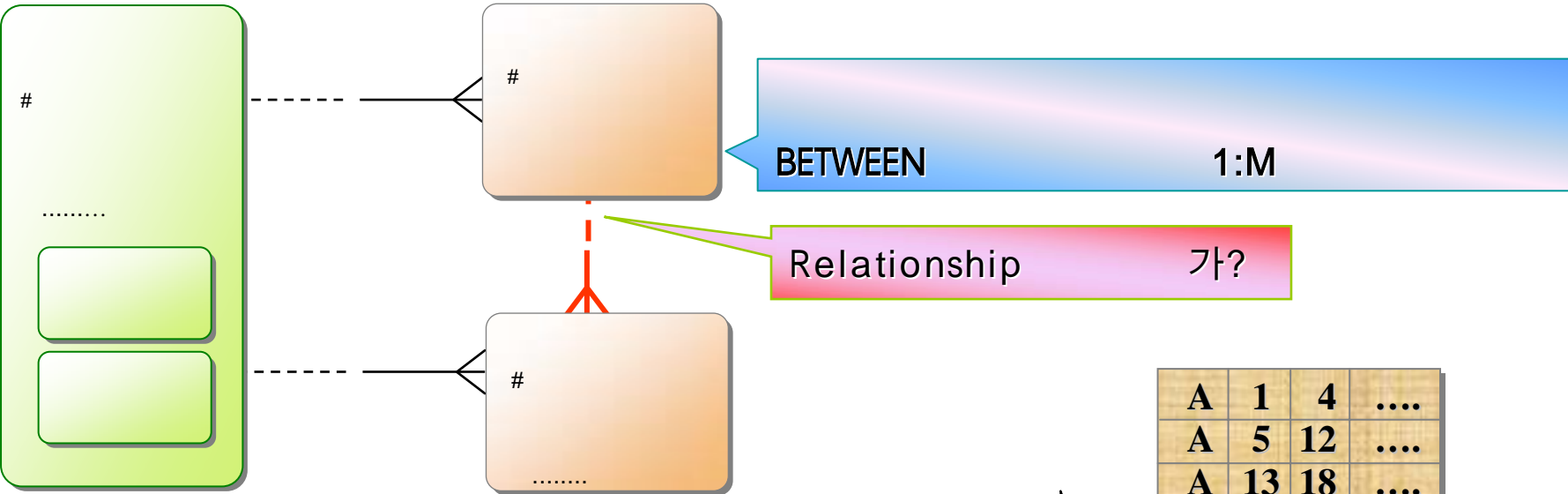
DAILY



가

가

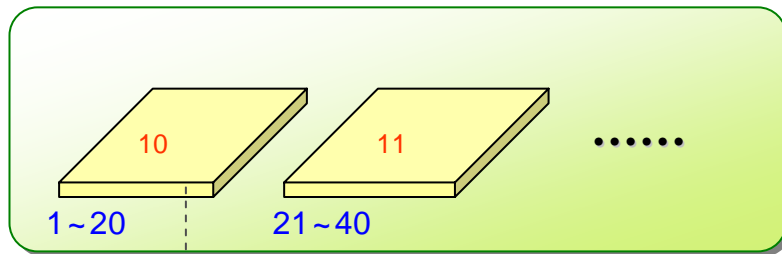
# BETWEEN RELATIONSHIP



A	1	4	...
A	5	12	...
A	13	18	...
A	19	99	...
B	1	9	...
B	10	20	...
B	21	99	...
C	1	7	...
C	8	99	...

가

# BETWEEN RELATION의 개념



?

1:M

가?

1 .....	10
2 .....	10
3 .....	10
.....	...
19 .....	10
22 .....	11
30 .....	11
40 .....	11

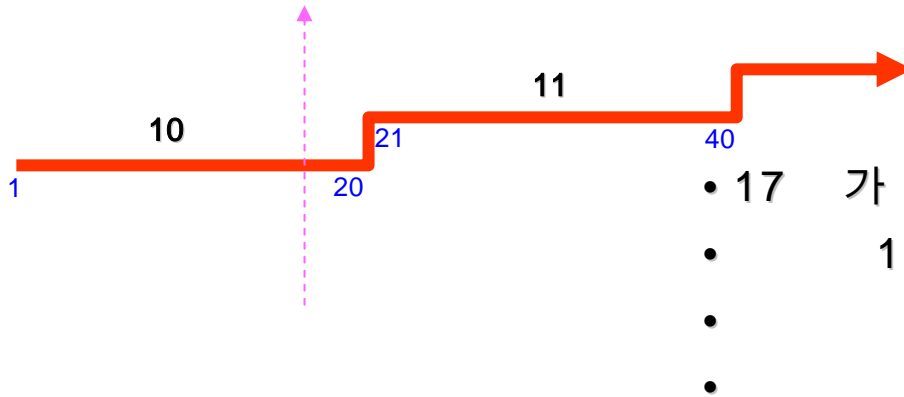
1

1

Relation

Relation  
(between relation)

# 이력선분의 기하학적 고찰



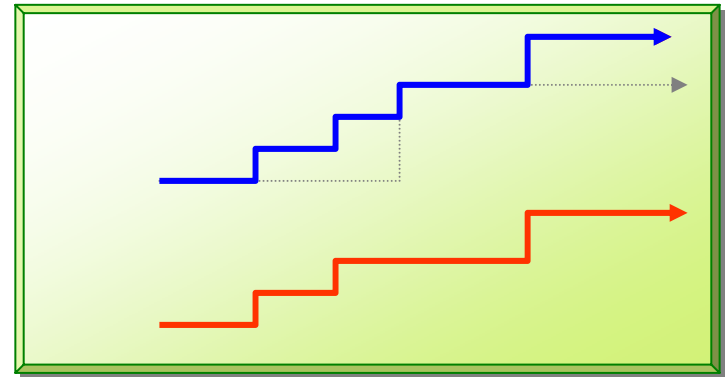
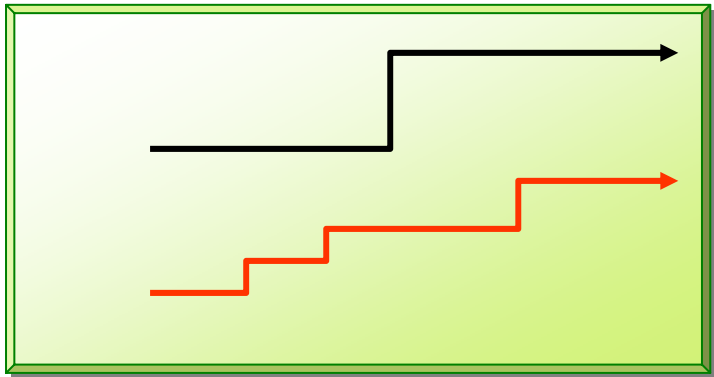
• 17 가 = !  
 • 17 !!!  
 •  
 •



- :  $\leq 17 \leq$
- : 17 Between and

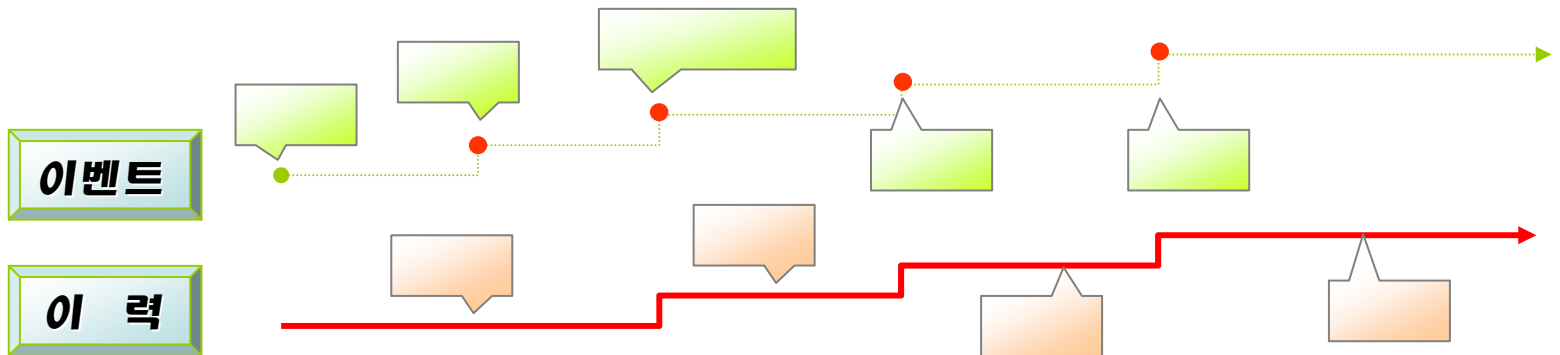
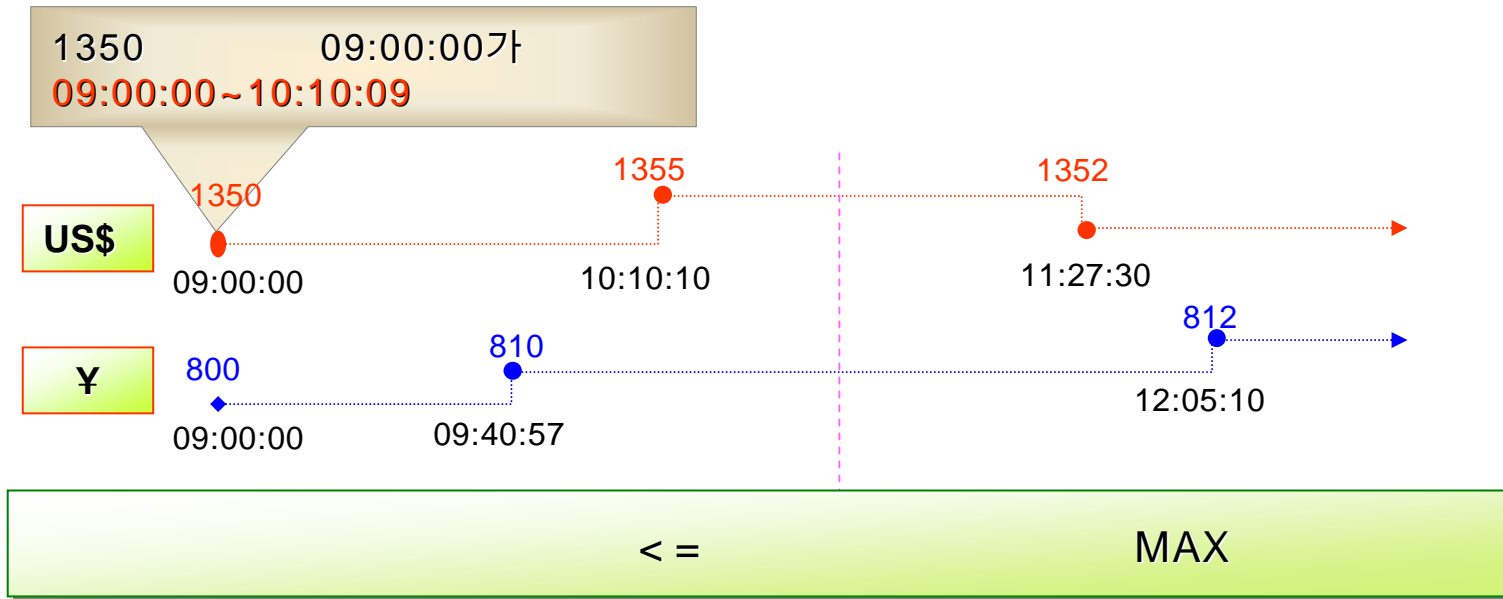


Package



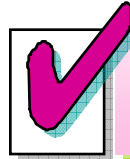
=

# 이력(선분)과 EVENT(점)의 차이

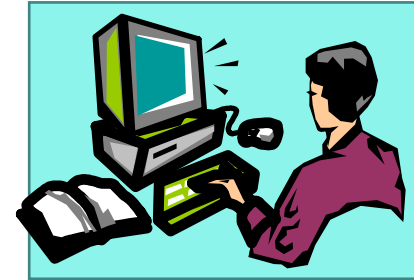


# 점 이력 모델

			...
7788	10	1999/ 02/ 04	...
7788	30	2000/ 07/ 21	NULL
7788	20	2002/ 05/ 15	...
8123	40	2000/ 03/ 23	
8123	30	2001/ 11/ 05	
8123	10	2002/ 09/ 17	
...	...	...	



' ( :2002 3 1 )



1

```
SELECT
FROM
WHERE = (select MAX(
) from
where < '2002/03/01');
```

Subquery (1)

2

```
SELECT
FROM
WHERE ROWID = ( select /* + index_desc(
idx_
) */ ROWID RID
from
where < '2002/03/01 and rownum <= 1);
```

Subquery (2)

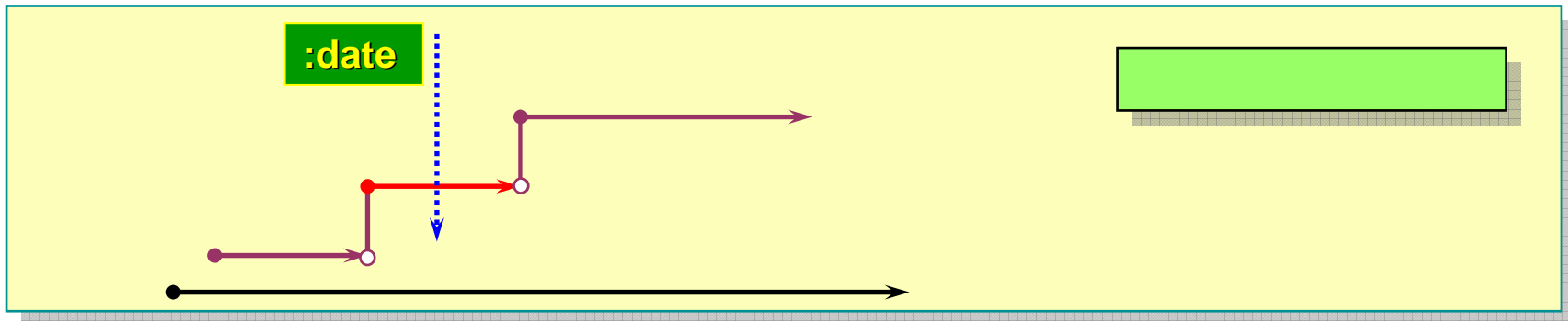
# 선분이력(한편 넣기)



- ' (Day)' 가 ,  
가
- (time)



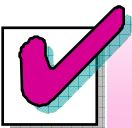
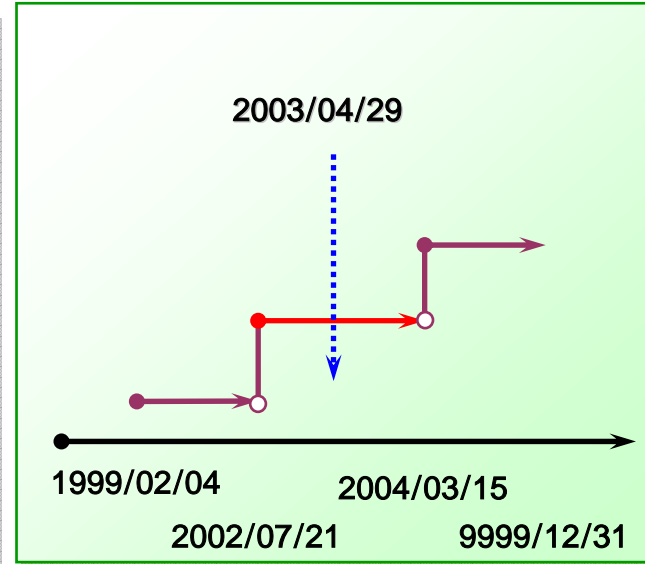
- where :date >= and :date <=
- where :date between and





# 선분이력(한편 넣기 예제)

				~ ~ ~
7788	10	1999/ 02/ 04	2002/ 07/ 20	~ ~ ~
7788	30	2002/ 07/ 21	2004/ 05/ 14	NULL
7788	20	2004/ 05/ 15	9999/ 12/ 31	~ ~ ~
8123	40	2000/ 03/ 23	2001/ 11/ 04	
8123	30	2001/ 11/ 05	2002/ 09/ 16	
8123	10	2002/ 09/ 17	9999/ 12/ 31	
~ ~ ~	~ ~ ~	~ ~ ~	~ ~ ~	



'7788'

, 2001 4 29

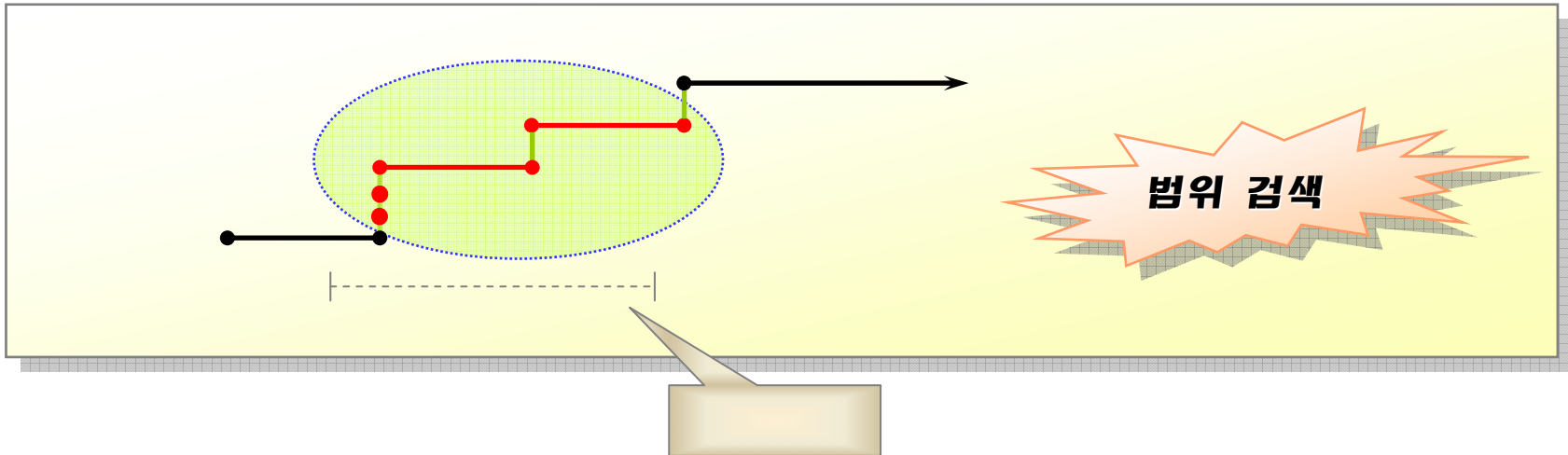
가?

```
SELECT
FROM
WHERE
AND
AND
```

```
SELECT
FROM
WHERE '2003/04/29' BETWEEN
AND
AND = '7788'
```

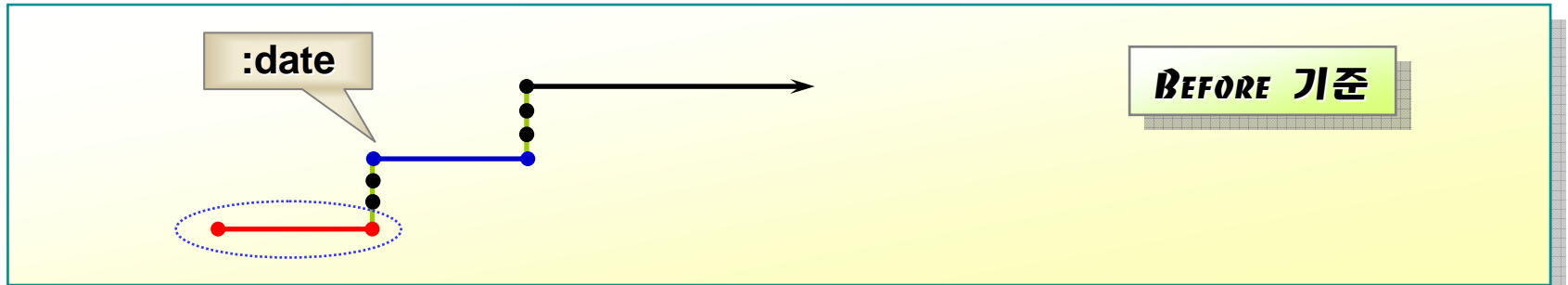
# 선분이력(양편 넣기)

- 
- 
- 
- : Query
- where between : 1 and : 2

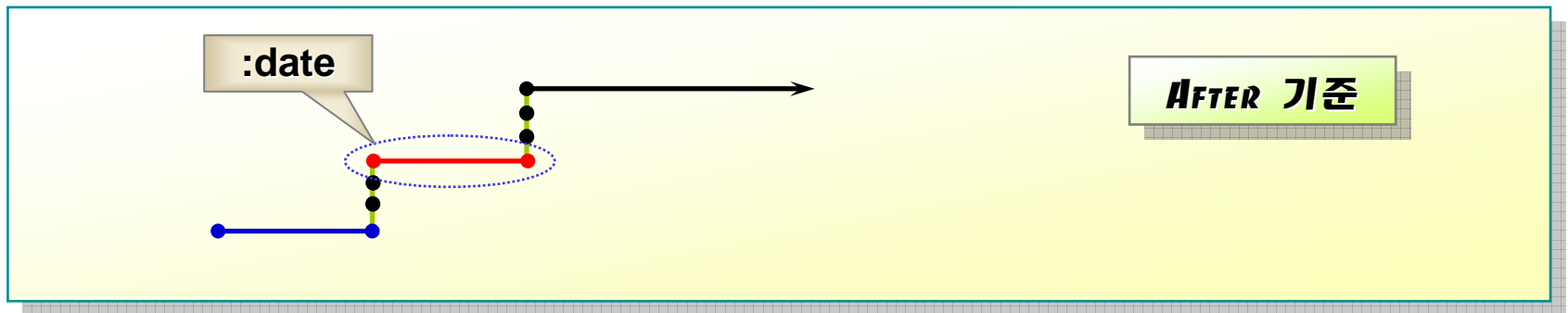


# 선분이력(양편 넣기)

- where :date  $\cdots >$  and :date  $\leq$



- where :date  $=>$  and :date  $\cdots <$

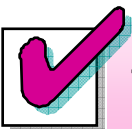
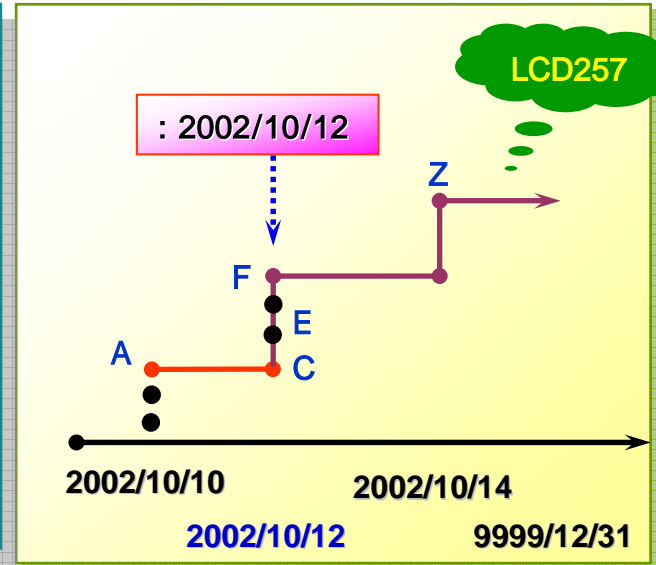


=

# 선분이력(양편 넣기 예제)

## 부품상태변경이력

CDR788	E	2002/10/12	9999/12/31	5
LCD257	A	2002/10/10	2002/10/12	1
LCD257	C	2002/10/12	2002/10/12	1
LCD257	E	2002/10/12	2002/10/12	2
LCD257	F	2002/10/12	2002/10/14	3
LCD257	Z	2002/10/14	9999/12/31	1
~~~	~~~	~~~	~~~	~~~



1.

'LCD257'

? (2002/10/12 )

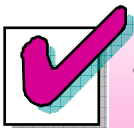
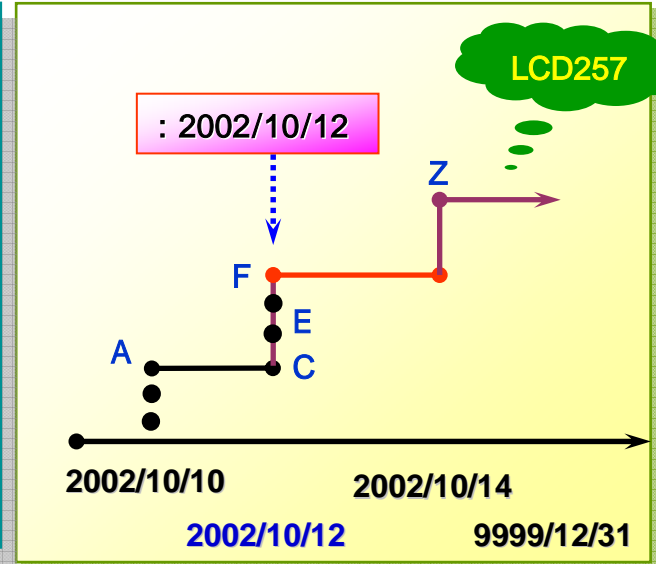
```

SELECT      ,      ,      FROM
WHERE      < '2002/10/12'
AND        => '2002/10/12'
AND        = 'LCD257'
    
```

# 선분이력(양편 넣기 예제)

## 부품상태변경이력

CDR788	E	2002/10/12	9999/12/31	5
LCD257	A	2002/10/10	2002/10/12	1
LCD257	C	2002/10/12	2002/10/12	1
LCD257	E	2002/10/12	2002/10/12	2
LCD257	F	2002/10/12	2002/10/14	3
LCD257	Z	2002/10/14	9999/12/31	1
~~~	~~~	~~~	~~~	~~~



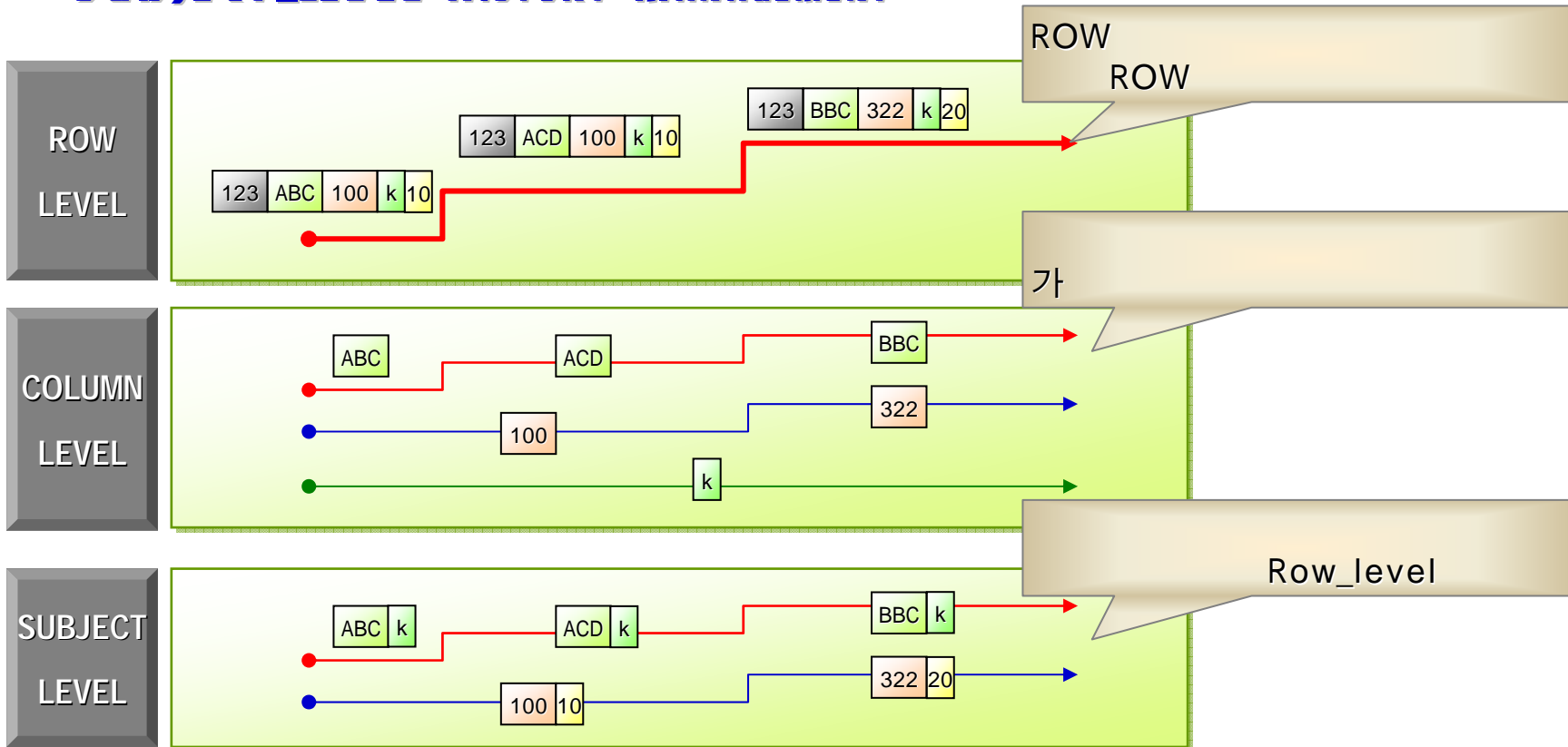
1. 'LCD257' ? (2002/10/12 )

```

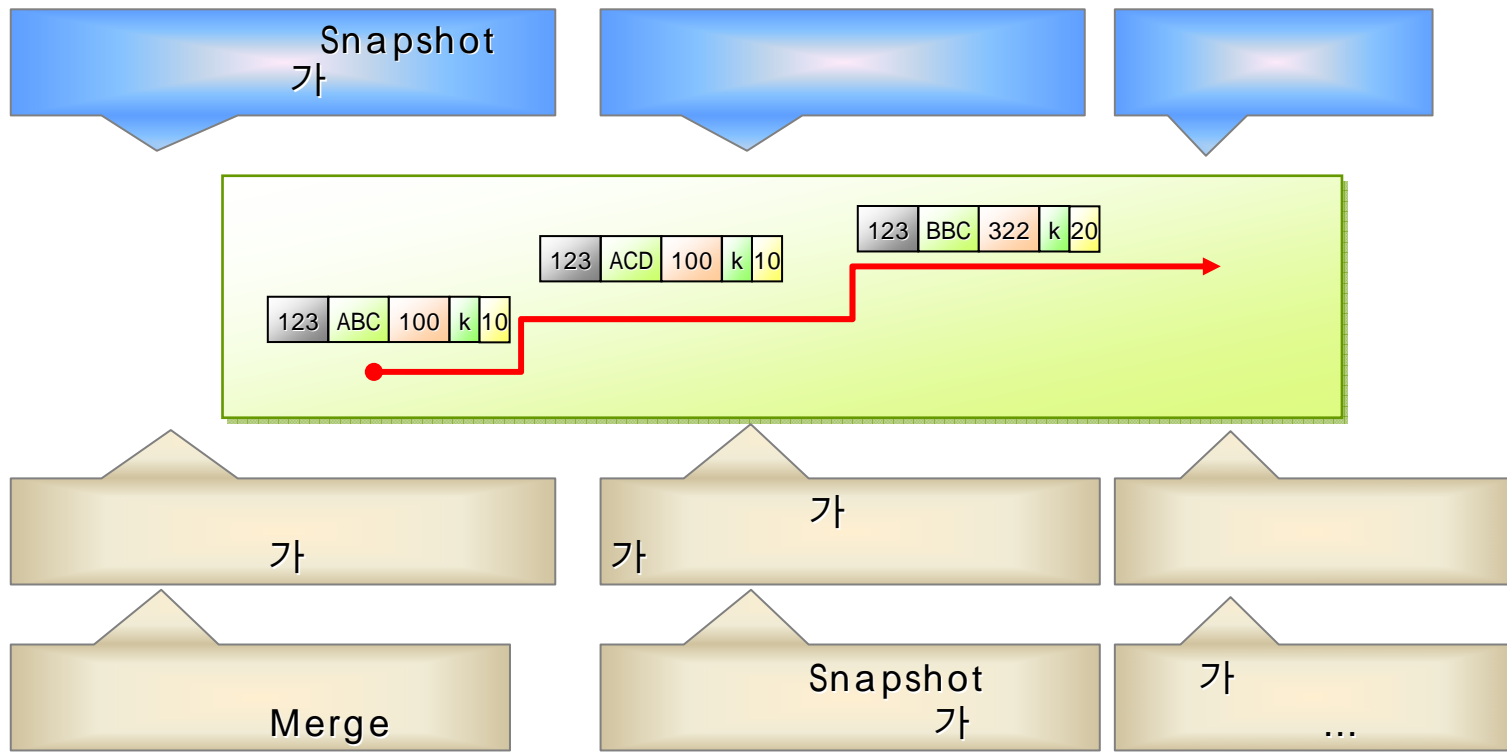
SELECT      ,      ,      FROM
WHERE      =< '2002/10/12'
AND        > '2002/10/12'
AND        = 'LCD257'
    
```

# 이력관리 유형

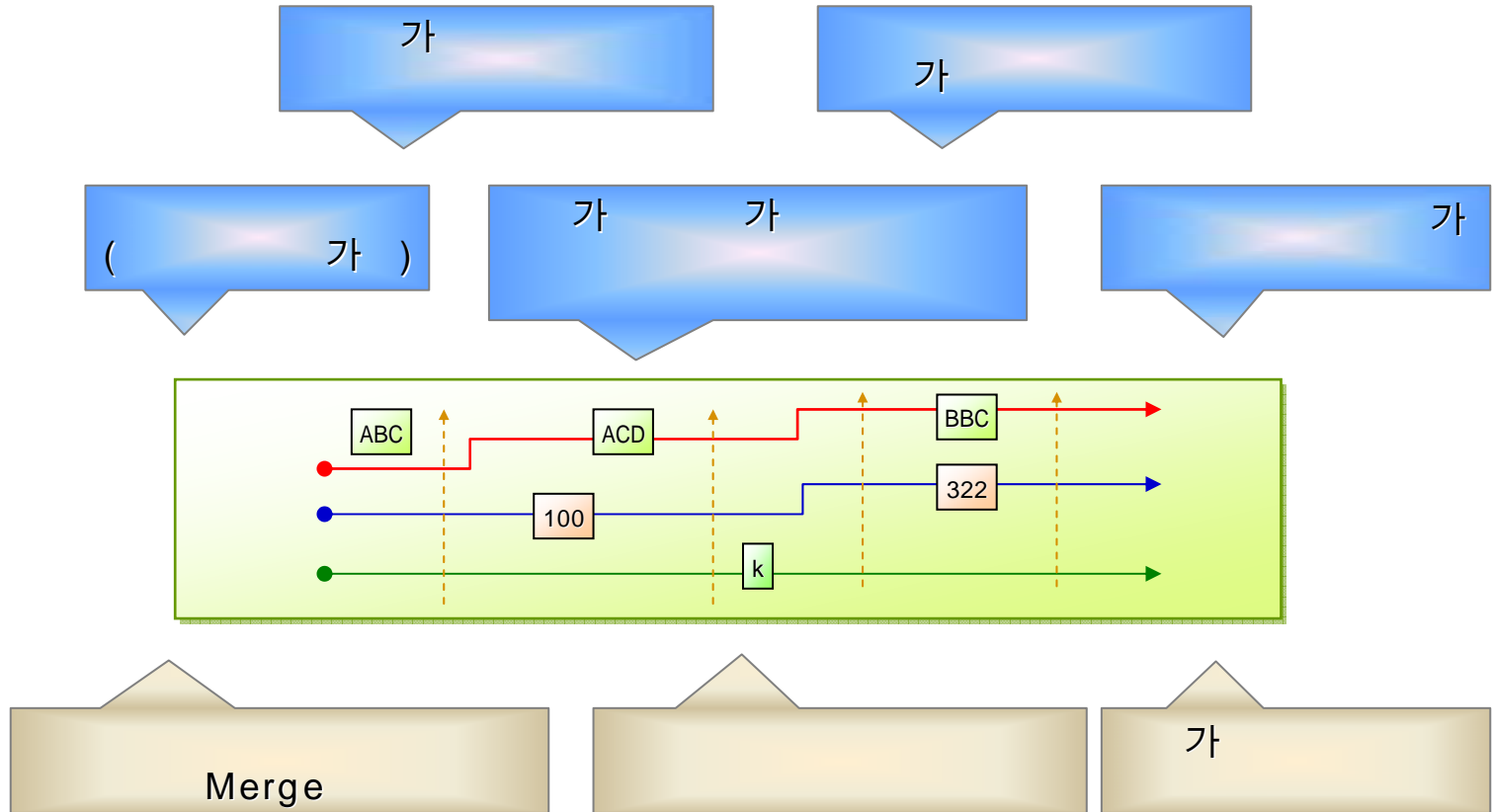
- **ROW\_LEVEL HISTORY MANAGEMENT**
- **COLUMN\_LEVEL HISTORY MANAGEMENT**
- **SUBJECT\_LEVEL HISTORY MANAGEMENT**



# ROW\_LEVEL HISTORY



# COLUMN\_LEVEL HISTORY





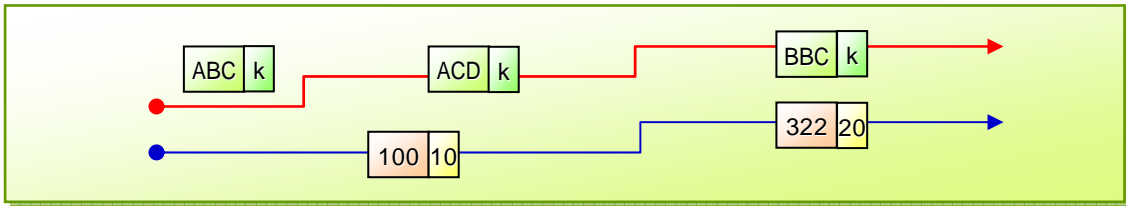
# SUBJECT\_LEVEL HISTORY

Row\_level Attribute\_level

( 가 )

가

Attribute\_level



Merge Row\_level  
( ? )

가

# 물리 설계 고려사항 - 결합인덱스

Column\_name BETWEEN : AND :

:Value BETWEEN AND

=

<= :value AND  
>= :value

:value가 520

:value가 10

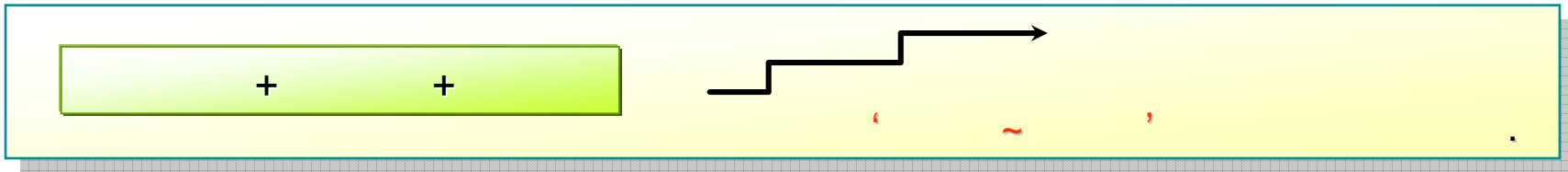
1	4
5	12
13	18
19	99
100	110
111	120
121	199
200	207
208	289
290	320
321	400
401	500
501	600
601	700
701	9999

4	1
12	5
18	13
99	19
110	100
120	111
199	121
207	200
289	208
320	290
400	321
500	401
600	501
700	601
9999	701

- ◆ +
  - ◆ +
  - ◆ rownum = 1 가
  - ◆ Default
- ( ; '99991231')

# 물리 설계 고려사항 - PRIMARY KEY

가?



## 다양한 형태 존재



Unique ?

Unique ?

Unique ?

{

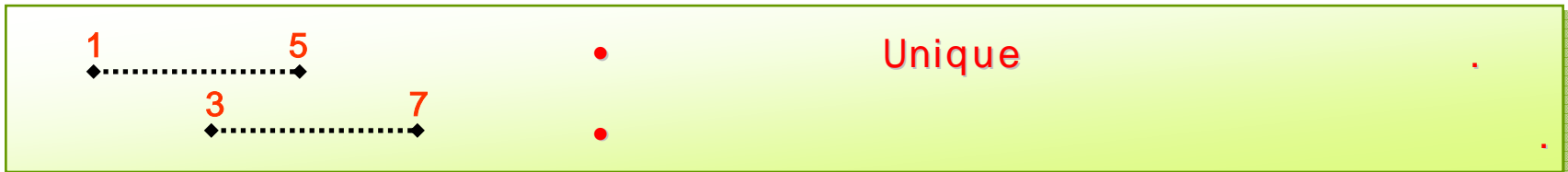
가

Unique

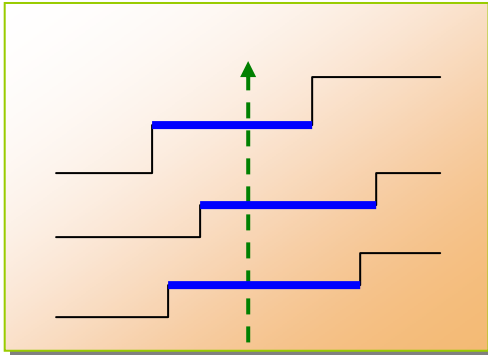
, DBMS가 check

Constraints

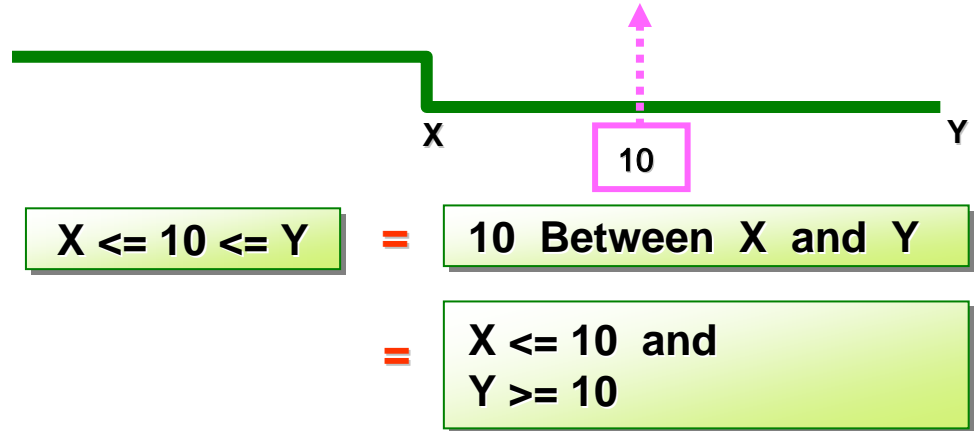
.



# 물리 설계 고려사항 - 종료점 처리



가



위 두 문장은 동일하다. (속도도 동일)

<input type="checkbox"/>		NULL
<input type="checkbox"/>		가 가
<input type="checkbox"/>		
<input type="checkbox"/>		
<input type="checkbox"/>	( ;	9999/12/31)
<input type="checkbox"/>	가	TABLE creation Default constraints
<input type="checkbox"/>		