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Creating Table:

```
CREATE TABLE Employee(  
    id      int,  
    first_name  VARCHAR(15),  
    last_name   VARCHAR(15),  
    start_date  DATE,  
    end_date    DATE,  
    salary      FLOAT(8,2),  
    city        VARCHAR(10),  
    description  VARCHAR(15));
```

Inserting record:

```
insert into Employee(id,first_name, last_name, start_date, end_Date, salary, City, Description) values  
(1,'Jason', 'Martin', '19960725', '20060725', 1234.56, 'Toronto', 'Programmer'),(2,'Alison',  
'Mathews', '19760321', '19860221', 6661.78, 'Vancouver','Tester'),(3,'James', 'Smith', '19781212',  
'19900315', 6544.78, 'Vancouver','Tester'),(4,'Celia', 'Rice', '19821024', '19990421', 2344.78,  
'Vancouver','Manager'),(5,'Robert', 'Black', '19840115', '19980808', 2334.78,  
'Vancouver','Tester'),(6,'Linda', 'Green', '19870730', '19960104', 4322.78,'New York',  
'Tester'),(7,'David', 'Larry', '19901231', '19980212', 7897.78,'New York', 'Manager'),(8,'James', 'Cat',  
'19960917', '20020415', 1232.78,'Vancouver', 'Tester');
```

Creating Views:

```
CREATE VIEW myView AS  
    SELECT id, first_name FROM employee WHERE id = 1;
```

```
drop view myView;
```

[Creating a View with Specified Column Names:](#)

```
CREATE VIEW myView (vid, vfirstname) AS  
    SELECT id, first_name FROM employee WHERE id = 1;
```

vid	vfirstname
1	Jason

```
drop view myView;
```

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Creating a View with Joined Tables:

```
create table job (  
    id          int,  
    title       VARCHAR(20)  
);
```

```
insert into job (id, title) values (1,'Tester'),(2,'Accountant'),(3,'Developer'),(4,'Coder'),(5,'Director');
```

```
CREATE ALGORITHM = TEMPTABLE VIEW myView
```

```
(id, first_name, title) AS
```

```
SELECT o.id, o.first_name, c.title
```

```
FROM job c, employee o
```

```
WHERE o.id = c.id;
```

```
select * from myView;
```

<u>id</u>	<u>first_name</u>	<u>title</u>
1	Jason	Tester
2	Alison	Accountant
3	James	Developer
4	Celia	Coder
5	Robert	Director

Adding ORDER BY to the Joined Table View:

```
select * from myView order by first_name;
```

<u>id</u>	<u>first_name</u>	<u>title</u>
2	Alison	Accountant
4	Celia	Coder
3	James	Developer
1	Jason	Tester
5	Robert	Director

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[Using a GROUP BY Clause to Create a View:](#)

```
select * from myView group by title;
```

<u>id</u>	<u>first name</u>	<u>title</u>
2	Alison	Accountant
4	Celia	Coder
3	James	Developer
5	Robert	Director
1	Jason	Tester

```
drop view myView;
```

[Using a GROUP BY Clause to Create a View with ALGORITHM = TEMPTABLE:](#)

```
CREATE ALGORITHM = TEMPTABLE VIEW myView  
  (city, number_of_employee) AS  
  SELECT city, count(id)  
  FROM employee  
  GROUP BY city;
```

```
select * from myView;
```

<u>city</u>	<u>number of employee</u>
New York	2
Toronto	1
Vancouver	5

[Using HAVING with GROUP BY to Create a View:](#)

```
CREATE ALGORITHM = TEMPTABLE VIEW myView  
  (city, number_of_employees) AS  
  SELECT city, count(id)  
  FROM employee  
  GROUP BY city  
  HAVING count(id) > 1  
  ORDER BY city;
```

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```
select * from myView;
```

<u>city</u>	<u>number of employees</u>
New York	2
Vancouver	5

Creating a View with UNION:

```
CREATE VIEW myView AS SELECT * FROM employee where id = 1 UNION SELECT * FROM employee where id = 2 UNION SELECT * FROM employee where id = 3;
```

```
select * from myView;
```

<u>id</u>	<u>first_name</u>	<u>last_name</u>	<u>start_date</u>	<u>end_date</u>	<u>salary</u>	<u>city</u>	<u>description</u>
1	Jason	Martin	1996-07-25	2006-07-25	1234.56	Toronto	Programmer
2	Alison	Mathews	1976-03-21	1986-02-21	6661.78	Vancouver	Tester
3	James	Smith	1978-12-12	1990-03-15	6544.78	Vancouver	Tester

```
drop view myView;
```

```
Create VIEW myView (id,first_name,city) AS SELECT id, first_name, city FROM employee;
```

<u>id</u>	<u>first_name</u>	<u>city</u>
1	Jason	Toronto
2	Alison	Vancouver
3	James	Vancouver
4	Celia	Vancouver
5	Robert	Vancouver
6	Linda	New York
7	David	New York
8	James	Vancouver

```
UPDATE myView SET first_name = 'David' WHERE `id`='2';
```

<u>id</u>	<u>first_name</u>	<u>city</u>
1	Jason	Toronto
2	David	Vancouver
3	James	Vancouver
4	Celia	Vancouver
5	Robert	Vancouver

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<u>id</u>	<u>first_name</u>	<u>city</u>
6	Linda	New York
7	David	New York
8	James	Vancouver

```
CREATE OR REPLACE VIEW myView AS SELECT id, first_name, city FROM employee
WHERE id = 1 WITH LOCAL CHECK OPTION
```

<u>id</u>	<u>first_name</u>	<u>city</u>
1	Jason	Toronto

```
UPDATE myView SET city = 'new' WHERE id = 1;
```

<u>id</u>	<u>first_name</u>	<u>city</u>
1	Jason	new

```
drop view myView;
```

Nested View:

```
CREATE OR REPLACE VIEW myView AS SELECT id, first_name, city FROM employee
WHERE id = 3 WITH LOCAL CHECK OPTION
```

<u>id</u>	<u>first_name</u>	<u>city</u>
3	James	Vancouver

```
CREATE OR REPLACE VIEW myView1 AS SELECT id, first_name FROM myView;
```

<u>id</u>	<u>first_name</u>
3	James

Explain keyword:

```
EXPLAIN SELECT * FROM myView WHERE id = 3 ;
```

id	select_type	table	type	possible_keys	key	key_len	ref	rows	Extra
1	SIMPLE	employee	ALL	NULL	NULL	NULL	NULL	8	Using where

WITH CHECK OPTION:

- A simple view is [updatable](#) therefore it is possible to [update](#) data which is not visible through the view. This update makes the view inconsistent.
- To ensure the consistency of the view, you use the `WITH CHECK OPTION` clause when you [create or modify the view](#).
- The `WITH CHECK OPTION` is an optional clause of the `CREATE VIEW` statement.

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- The `WITH CHECK OPTION` prevents a view from [updating](#) or [inserting](#) rows that are not visible through it.
- In other words, whenever you update or insert a row of the base tables through a view, MySQL ensures that the insert or update operation is conformed with the definition of the view.

Syntax:

```
CREATE [OR REPLACE VIEW] view_name
AS
    select_statement
WITH CHECK OPTION;
```

Example:

```
CREATE OR REPLACE VIEW vps AS SELECT
`id`,`first_name`,`last_name`,`salary`,`city` FROM employee WHERE salary
>2000
```

id	first_name	last_name	salary	city
2	David	Mathews	6661.78	Vancouver
3	James	Smith	6544.78	Vancouver
4	Celia	Rice	2344.78	Vancouver
5	Robert	Black	2334.78	Vancouver
6	Linda	Green	4322.78	New York
7	David	Larry	7897.78	New York

vps is a simple view, it is updatable.

[insert a row](#) into the employees table through the vps view:

```
INSERT INTO `vps`(`id`,`first_name`,`last_name`,`salary`,`city`) VALUES
('17','x','y','1000','ald');
```

id	first_name	last_name	salary	city
2	David	Mathews	6661.78	Vancouver

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<u>id</u>	<u>first_name</u>	<u>last_name</u>	<u>salary</u>	<u>city</u>
3	James	Smith	6544.78	Vancouver
4	Celia	Rice	2344.78	Vancouver
5	Robert	Black	2334.78	Vancouver
6	Linda	Green	4322.78	New York
7	David	Larry	7897.78	New York

Not view in the vps view table.

<u>id</u>	<u>first_name</u>	<u>last_name</u>	<u>start_date</u>	<u>end_date</u>	<u>salary</u>	<u>city</u>	<u>description</u>
1	Jason	Martin	1996-07-25	2006-07-25	1234.56	new	Programmer
2	David	Mathews	1976-03-21	1986-02-21	6661.78	Vancouver	Tester
3	James	Smith	1978-12-12	1990-03-15	6544.78	Vancouver	Tester
4	Celia	Rice	1982-10-24	1999-04-21	2344.78	Vancouver	Manager
5	Robert	Black	1984-01-15	1998-08-08	2334.78	Vancouver	Tester
6	Linda	Green	1987-07-30	1996-01-04	4322.78	New York	Tester
7	David	Larry	1990-12-31	1998-02-12	7897.78	New York	Manager
8	James	Cat	1996-09-17	2002-04-15	1232.78	Vancouver	Tester
17	x	y	NULL	NULL	1000.00	ald	NULL

Record is inserted into employee table.

[drop view](#) vps;

Now use check option for insert operation:

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```
CREATE OR REPLACE VIEW vps AS SELECT  
`id`,`first_name`,`last_name`,`salary`,`city` FROM employee WHERE salary  
>2000
```

```
WITH CHECK OPTION ;
```

```
INSERT INTO `vps`(`id`,`first_name`,`last_name`,`salary`,`city`) VALUES  
('18','P','Q','1000','ALLAHABAD');
```

ERROR: CHECK OPTION failed `sis`.`vps`

```
INSERT INTO `vps`(`id`,`first_name`,`last_name`,`salary`,`city`) VALUES  
('19','U','V','3000','ALLAHABAD');
```

<u>id</u>	<u>first_name</u>	<u>last_name</u>	<u>salary</u>	<u>city</u>
2	David	Mathews	6661.78	Vancouver
3	James	Smith	6544.78	Vancouver
4	Celia	Rice	2344.78	Vancouver
5	Robert	Black	2334.78	Vancouver
6	Linda	Green	4322.78	New York
7	David	Larry	7897.78	New York
19	U	V	3000.00	ALLAHABAD

Now record is appeared in vps table also.