

Solutions :

```
CREATE TABLE ElectronicStore{  
    item_id INT AUTO_INCREMENT PRIMARY KEY,  
    item_name VARCHAR(20) NOT NULL  
    parent_id INT DEFAULT NULL  
};
```

Server: 127.0.0.1 » Database: evaluation2 » Table: electronic\_store

Browse Structure SQL Search Insert Export

☐ Show all | Number of rows: 25 | Filter rows: Search this table S

+ Options





		item_id	item_name	parent_id
<input type="checkbox"/>	Edit Copy Delete	1	Electronics	NULL
<input type="checkbox"/>	Edit Copy Delete	2	Laptops & PC	1
<input type="checkbox"/>	Edit Copy Delete	3	Laptops	2
<input type="checkbox"/>	Edit Copy Delete	4	PC	2
<input type="checkbox"/>	Edit Copy Delete	5	Cameras & photo	1
<input type="checkbox"/>	Edit Copy Delete	6	Cameras	5
<input type="checkbox"/>	Edit Copy Delete	7	Phones & Accessories	1
<input type="checkbox"/>	Edit Copy Delete	8	Smartphones	7
<input type="checkbox"/>	Edit Copy Delete	9	Android	8
<input type="checkbox"/>	Edit Copy Delete	10	IOS	8
<input type="checkbox"/>	Edit Copy Delete	11	Other Smartphones	8
<input type="checkbox"/>	Edit Copy Delete	12	Batteries	7
<input type="checkbox"/>	Edit Copy Delete	13	Headsets	7
<input type="checkbox"/>	Edit Copy Delete	14	Screen Protectors	7

☐ Check all
 With selected: Edit Copy Delete Export

Q1) Write a query to find the root node.

**SELECT \* FROM `electronic\_store` WHERE `parent\_id` IS NULL ;**

+ Options

		item_id	item_name	parent_id
<input type="checkbox"/>	 Edit	 Copy	 Delete	1 Electronics
				NULL

Q2) Write a query to find leaf node.

```
SELECT tbl1.item_name FROM
electronic_store AS tbl1 LEFT JOIN electronic_store as tbl2
ON tbl1.item_id = tbl2.parent_id
WHERE tbl2.item_id IS NULL;
```

+ Options

item_name
Laptops
PC
Cameras
Android
IOS
Other Smartphones
Batteries
Headsets
Screen Protectors

Q3) Write a query to find non-leaf node.

```
SELECT DISTINCT tbl1.item_name FROM
electronic_store AS tbl1 LEFT JOIN electronic_store as tbl2
ON tbl1.item_id = tbl2.parent_id
```

**WHERE tbl2.item\_id IS NOT NULL**

[+ Options](#)

**item\_name**

Electronics

Laptops & PC

Cameras & photo

Phones & Accessories

Smartphones

Q4) Write a query to find the path of each node.

**WITH RECURSIVE category\_path (id, title, path) AS**

**(**

**SELECT item\_id, item\_name, item\_name as path**

**FROM electronic\_store**

**WHERE parent\_id IS NULL**

**UNION ALL**

**SELECT c.item\_id, c.item\_name, CONCAT(cp.path, ' > ',  
c.item\_name)**











































**FROM category\_path AS cp JOIN electronic\_store AS c**

**ON cp.id = c.parent\_id**

**)**

**SELECT \* FROM category\_path**

**ORDER BY path**

<input type="checkbox"/>	 Edit  Copy  Delete	1	Electronics	Electronics
<input type="checkbox"/>	 Edit  Copy  Delete	5	Cameras & photo	Electronics > Cameras & photo
<input type="checkbox"/>	 Edit  Copy  Delete	6	Cameras	Electronics > Cameras & photo > Cameras
<input type="checkbox"/>	 Edit  Copy  Delete	2	Laptops & PC	Electronics > Laptops & PC
<input type="checkbox"/>	 Edit  Copy  Delete	3	Laptops	Electronics > Laptops & PC > Laptops
<input type="checkbox"/>	 Edit  Copy  Delete	4	PC	Electronics > Laptops & PC > PC
<input type="checkbox"/>	 Edit  Copy  Delete	7	Phones & Accessories	Electronics > Phones & Accessories
<input type="checkbox"/>	 Edit  Copy  Delete	12	Batteries	Electronics > Phones & Accessories > Batteries
<input type="checkbox"/>	 Edit  Copy  Delete	13	Headsets	Electronics > Phones & Accessories > Headsets
<input type="checkbox"/>	 Edit  Copy  Delete	14	Screen Protectors	Electronics > Phones & Accessories > Screen Protec
<input type="checkbox"/>	 Edit  Copy  Delete	8	Smartphones	Electronics > Phones & Accessories > Smartphones
<input type="checkbox"/>	 Edit  Copy  Delete	10	IOS	Electronics > Phones & Accessories > Smartphones >
<input type="checkbox"/>	 Edit  Copy  Delete	9	Android	Electronics > Phones & Accessories > Smartphones >
<input type="checkbox"/>	 Edit  Copy  Delete	11	Other Smartphones	Electronics > Phones & Accessories > Smartphones >

Q5)Write a function to calculate node level

**WITH RECURSIVE item\_level (id, title, lvl) AS**

**(**

**SELECT item\_id, item\_name, 0 lvl**

**FROM electronic\_store**

**WHERE parent\_id IS NULL**

**UNION ALL**

**SELECT c.item\_id, c.item\_name,cp.lvl + 1**





























**FROM item\_level AS cp JOIN electronic\_store AS c**

**ON cp.id = c.parent\_id**

**)**

**SELECT \* FROM item\_level**

**ORDER BY lvl**

						id	title	lvl
<input type="checkbox"/>	 Edit	 Copy	 Delete	1	Electronics	0		
<input type="checkbox"/>	 Edit	 Copy	 Delete	7	Phones & Accessories	1		
<input type="checkbox"/>	 Edit	 Copy	 Delete	5	Cameras & photo	1		
<input type="checkbox"/>	 Edit	 Copy	 Delete	2	Laptops & PC	1		
<input type="checkbox"/>	 Edit	 Copy	 Delete	6	Cameras	2		
<input type="checkbox"/>	 Edit	 Copy	 Delete	4	PC	2		
<input type="checkbox"/>	 Edit	 Copy	 Delete	3	Laptops	2		
<input type="checkbox"/>	 Edit	 Copy	 Delete	14	Screen Protectors	2		
<input type="checkbox"/>	 Edit	 Copy	 Delete	13	Headsets	2		
<input type="checkbox"/>	 Edit	 Copy	 Delete	12	Batteries	2		
<input type="checkbox"/>	 Edit	 Copy	 Delete	8	Smartphones	2		
<input type="checkbox"/>	 Edit	 Copy	 Delete	11	Other Smartphones	3		
<input type="checkbox"/>	 Edit	 Copy	 Delete	10	IOS	3		
<input type="checkbox"/>	 Edit	 Copy	 Delete	9	Android	3		

**Q6)** Write a procedure to get the immediate children.

**DELIMITER \$\$**

**CREATE PROCEDURE give\_child(IN itemID INT(100))**

**BEGIN**

```
SELECT t1.item_name FROM
electronic_store AS t1 LEFT JOIN electronic_store as t2
ON t1.parent_id = t2.item_id
WHERE t2.item_id = itemID ;

END $$

DELIMITER ;
```

call give\_child(7);

```
SET @p0='7'; CALL `give_child`(@p0);
```

Execution results of routine `give\_child`

item_name
-----------

Smartphones
-------------

Batteries
-----------

Headsets
----------

Screen Protectors
-------------------

