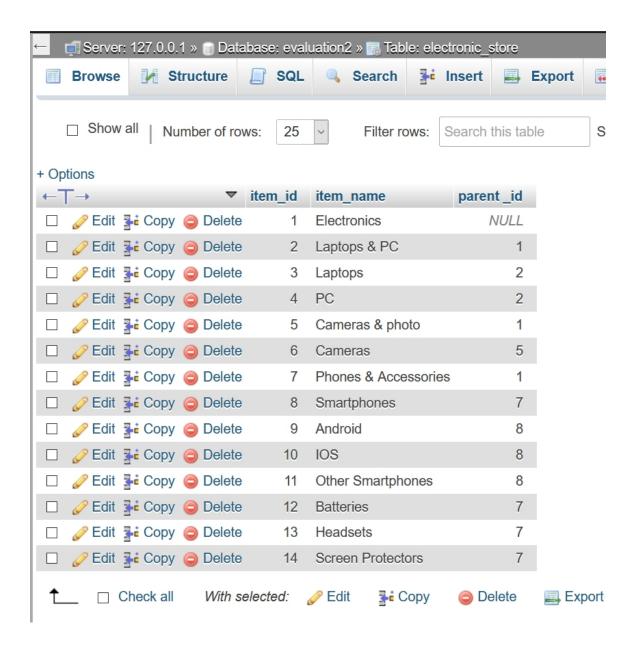
Solutions:

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



Q1) Write a query to find the root node.

SELECT * FROM `electronic_store` WHERE `parent_id` IS 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



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

```
<u>⊦ Options</u>
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
```

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					Para.	
	Edit	≩ € Copy	Delete	9 1	Electronics	Electronics
		≩≟ Copy	Delete	5	Cameras & photo	Electronics > Cameras & photo
		≩ Copy	Delete	6	Cameras	Electronics > Cameras & photo > Cameras
		≟ Copy	Delete	2	Laptops & PC	Electronics > Laptops & PC
		3 -€ Copy	Delete	3	Laptops	Electronics > Laptops & PC > Laptops
		Copy	Delete	9 4	PC	Electronics > Laptops & PC > PC
	Edit	≩ Сору	Delete	e 7	Phones & Accessories	Electronics > Phones & Accessories
		3 - сору	Delete	12	Batteries	Electronics > Phones & Accessories > Batteries
	Edit	≩ Сору	Delete	13	Headsets	Electronics > Phones & Accessories > Headsets
	Edit	≩ € Copy	Delete	14	Screen Protectors	Electronics > Phones & Accessories > Screen Protec
		≩ Copy	Delete	8	Smartphones	Electronics > Phones & Accessories > Smartphones
	Edit	≩ € Copy	Delete	10	IOS	Electronics > Phones & Accessories > Smartphones >
		≩ Copy	Delete	9	Android	Electronics > Phones & Accessories > Smartphones >
	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 Ivi



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 $$
DELIMETER;
```

call give_child(7);

