

GANPAT UNIVERSITY
U.V. PATEL COLLEGE OF ENGINEERING

B.Tech 5th Semester CE/IT

2CEIT5PE4: Software Packages








Practical: 6

Working with Node.js and MySQL

Que:1 Write a node.js code to establish connection with MySQL and create database “Node_test”.









```
var mysql = require('mysql');
var con = mysql.createConnection({
  host: 'localhost',
  user: 'root',
  password: ''
});
con.connect(function(err) {
  if(err)
  {
    console.log(err.message);
  }
  else{
    console.log("Connection Successful");
    con.query('CREATE DATABASE Node_test', function(err)
    {
      if(err)
      {
        console.log(err.message)
      }
      else{
        console.log("'Node_test' Database Created successful");
      }
    });
    con.end();
  }
});
```

Output:

	Database ▲	Collation	Action
<input type="checkbox"/>	demo	utf8mb4_general_ci	 Check privileges
<input type="checkbox"/>	form	latin1_swedish_ci	 Check privileges
<input type="checkbox"/>	information_schema	utf8_general_ci	 Check privileges
<input type="checkbox"/>	mydbdk	utf8mb4_general_ci	 Check privileges
<input type="checkbox"/>	mysql	utf8mb4_general_ci	 Check privileges
<input type="checkbox"/>	performance_schema	utf8_general_ci	 Check privileges
<input type="checkbox"/>	phpmyadmin	utf8_bin	 Check privileges

Total: 7

```
PS E:\B_Tech\SEM_5\SP\Practical\Code\Practical 6> node "e:\B_Tech\SEM_5\SP\Practical\Code\Practical 6\p6_1.js"
Connection Successful
'Node_test' Database Created successful
PS E:\B_Tech\SEM_5\SP\Practical\Code\Practical 6> []
```


	Database ▲	Collation	Action
<input type="checkbox"/>	demo	utf8mb4_general_ci	 Check privileges
<input type="checkbox"/>	form	latin1_swedish_ci	 Check privileges
<input type="checkbox"/>	information_schema	utf8_general_ci	 Check privileges
<input type="checkbox"/>	mydbdk	utf8mb4_general_ci	 Check privileges
<input type="checkbox"/>	mysql	utf8mb4_general_ci	 Check privileges
<input type="checkbox"/>	node_test	utf8mb4_general_ci	 Check privileges
<input type="checkbox"/>	performance_schema	utf8_general_ci	 Check privileges
<input type="checkbox"/>	phpmyadmin	utf8_bin	 Check privileges


Total: 8

Que:2 Write a node.js code to create a table „Product“ with Id, Name, Brand, Quantity and Price as fields.

```
var mysql = require('mysql');
var con = mysql.createConnection({
  host: 'localhost',
  user: 'root',
  password: '',
  database: 'Node_test'
});
con.connect(function(err) {
  if(err) {
    console.log(err.message);
  }
  else{
    console.log("Connection Successful");
    var sql = "CREATE TABLE product (id int AUTO_INCREMENT PRIMARY KEY,
name varchar(50), brand varchar(50), quantity int, price REAL)";
    con.query(sql, function(err)
    {
      if(err)
      {
        console.log(err.message)
      }
      else{
        console.log("'Product' Table Created successful");
      }
    });
    con.end();
  }
});
```

Output:

 No tables found in database.

 Create table

Name: Number of columns:

PS E:\B_Tech\SEM_5\SP\Practical\Code\Practical 6> node "e:\B_Tech\SEM_5\SP\Practical\Code\Practical 6\p6_2.js"
Connection Successful
'Product' Table Created successful
PS E:\B_Tech\SEM_5\SP\Practical\Code\Practical 6>

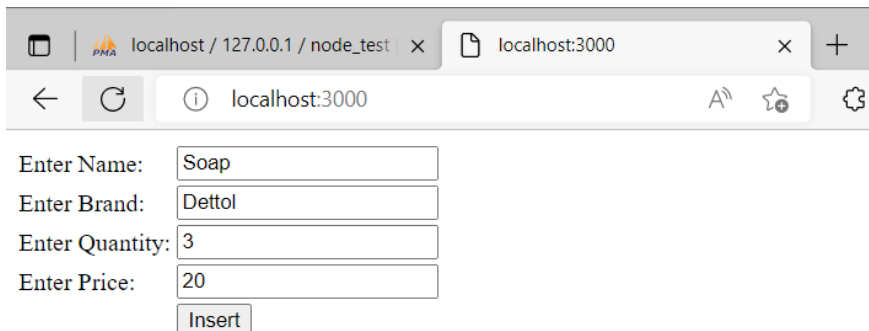
Table	Action	Rows	Type	Collation	Size	Overhead
<input type="checkbox"/> product	★ Browse Structure Search Insert Empty Drop	0	InnoDB	utf8mb4_general_ci	16.0 KiB	-
1 table	Sum	0	InnoDB	utf8mb4_general_ci	16.0 KiB	0 B

Que:3 Write a node.js program which takes product information like Name, Brand, Quantity and Price from the user using HTML form and stores it into the Product table.

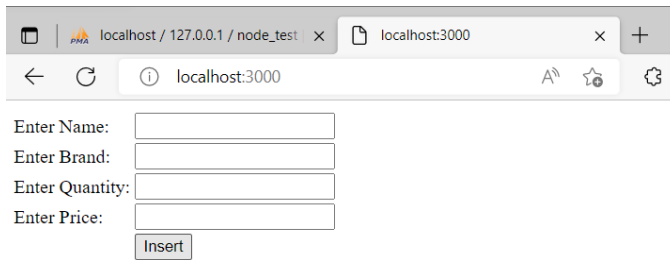
```
var mysql = require('mysql');
var http = require('http');
const qs = require('querystring');
const fs = require('fs');
http.createServer(function(req, res)
{
    var con = mysql.createConnection({
        host: 'localhost',
        user: 'root',
        password: '',
        database: 'Node_test'
    });
    con.connect(function(err) {
        if(err)
        {
            throw err
        }
        else{
            var myjs = fs.readFileSync('./p6_3_myjs.js');
            res.write('<html><head><script>' + myjs + '</script></head><body>' +
                '<table>' +
                    '<form action="/" method="post">' +
                        '<tr>' +
                            '<td>Enter Name:</td>' +
                            '<td><input type="text" name="uname"/></td>' +
                        '</tr>' +
                        '<tr>' +
                            '<td>Enter Brand: </td>' +
                            '<td><input type="text" name="bname"/></td>' +
                        '</tr>' +
                        '<tr>' +
                            '<td>Enter Quantity: </td>' +
                            '<td><input type="text" name="quantity"/></td>' +
                        '</tr>' +
                        '<tr>' +
                            '<td>Enter Price: </td>' +
                            '<td><input type="text" name="price"/></td>' +
                        '</tr>' +
                        '<tr>' +
                            '<td></td>' +
                            '<td><input type="submit" value="Insert"/></td>' +
                        '</tr>' +
                    '</form>' +
                '</table>');
        }
    });
}
```

```
if(req.method=='POST')
{
    var sdata="";
    req.on('data', (chunk)=>{
        sdata = sdata+chunk.toString();
    });
    req.on('end', ()=>{
        var d = qs.parse(sdata);
        var uname = d.uname;
        var bname = d.bname;
        var quan = d.quantity;
        var p =d.price;
        var sql = "INSERT INTO product (name, brand, quantity,
        price) values ('"+uname+"','"+bname+"','"+quan+"',
        '"+p+"')";
        con.query(sql,function(err){
            if(err)
            {
                console.log(err.message);
            }
            else{
                console.log("Record Inserted Successful");
                res.end('<br><br><div id="info_message">
                Record Inserted Successful</div></body></html>');
            }
        });
        con.end();
    });
}
else{
    res.end('</body></html>');
}
});
}).listen(3000);
```

Output:



The screenshot shows a web browser window with two tabs. The first tab is titled 'localhost / 127.0.0.1 / node_test' and the second is 'localhost:3000'. The address bar shows 'localhost:3000'. Below the address bar, there is a form with four input fields and one button. The first input field is labeled 'Enter Name:' and contains the text 'Soap'. The second input field is labeled 'Enter Brand:' and contains the text 'Dettol'. The third input field is labeled 'Enter Quantity:' and contains the text '3'. The fourth input field is labeled 'Enter Price:' and contains the text '20'. Below the input fields is a button labeled 'Insert'.



Enter Name:















Enter Brand:

Enter Quantity:

Enter Price:

Record Inserted Successful

+ Options

 				id	name	brand	quantity	price
<input type="checkbox"/>	 Edit	 Copy	 Delete	1	Soap	Dettol	3	20
<input type="checkbox"/>	 Edit	 Copy	 Delete	2	Shampoo	Loreal	5	100
<input type="checkbox"/>	 Edit	 Copy	 Delete	3	Toothpaste	Colgate	2	50
<input type="checkbox"/>	 Edit	 Copy	 Delete	4	Sanitizer	LifeBuoy	2	60

Que:4 Write a node.js program to retrieve all the details of the product and display in the browser.

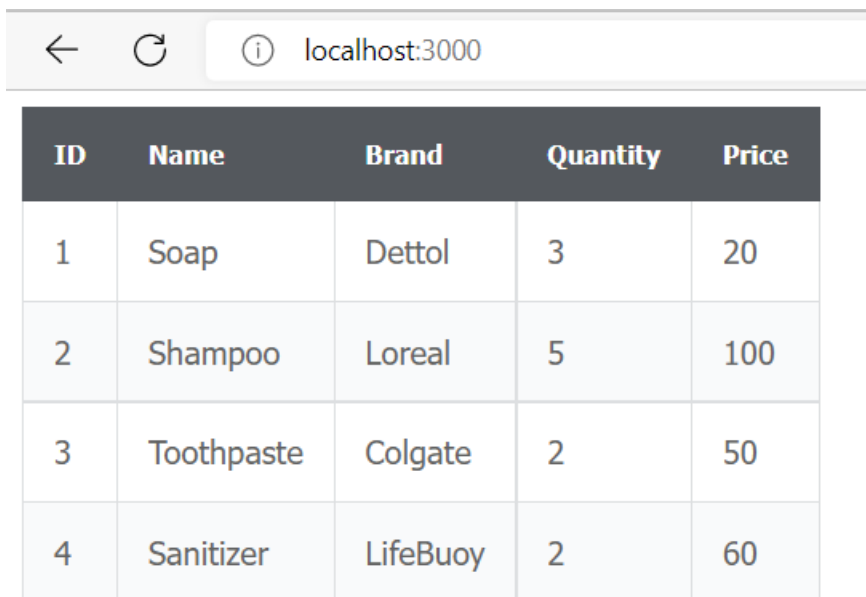
```
var mysql = require('mysql');
var http = require('http');
var fs = require('fs');

http.createServer(function(req, res) {
  var con = mysql.createConnection({
    host: 'localhost',
    user: 'root',
    password: '',
    database: 'Node_test'
  });

  var mystyle = fs.readFileSync('./p6_4_mystyle.css');
  res.write('<html><head><style>' + mystyle + '</style></head><body><table>
  <thead><tr><td>ID</td><td>Name</td><td>Brand</td><td>Quantity</td>
  <td>Price</td></tr></thead><tbody>');
  con.connect(function(err) {
    if(err) {
      console.log(err.message);
    } else {
      var sql = "SELECT * FROM product";
      con.query(sql, function(err, result) {
        if(err) {
          console.log(err.message);
        }
      });
    }
  });
});
```

```
        else{
            result.forEach(element => {
                res.write('<tr>'+
                    '<td>'+element.id+'</td>'+
                    '<td>'+element.name+'</td>'+
                    '<td>'+element.brand+'</td>'+
                    '<td>'+element.quantity+'</td>'+
                    '<td>'+element.price+'</td>'+
                    '</tr>');
            });
            res.end('</tbody></table></body></html>');
        }
        con.end();
    });
}
});
}).listen(3000);
```

Output:



The screenshot shows a web browser window with the address bar displaying 'localhost:3000'. The browser content area displays a table with five columns: ID, Name, Brand, Quantity, and Price. The table contains four rows of data representing different products.

ID	Name	Brand	Quantity	Price
1	Soap	Dettol	3	20
2	Shampoo	Loreal	5	100
3	Toothpaste	Colgate	2	50
4	Sanitizer	LifeBuoy	2	60

Que:5 Write a node.js program to search any product by Name or Brand.

```

var mysql = require('mysql');
var http = require('http');
const qs = require('querystring');
const fs = require('fs');
http.createServer(function(req, res)
{
    var con = mysql.createConnection({
        host:'localhost',
        user:'root',
        password:'',
        database:'Node_test'
    });
    con.connect(function(err) {
        if(err)
        {
            throw err
        }
        else{
            var mycss = fs.readFileSync('./p6_4_mystyle.css');
            res.write('<html><body><head><style>'+mycss+'</style></head>'+
            '<table>'+
                '<form action="/" method="post">'+
                    '<tr>'+
                        '<td>Search By Name Or Brand:</td>'+
                        '<td><input type="text" name="uname"/></td>'+
                    '</tr>'+
                    '<tr>'+
                        '<td></td>'+
                        '<td><input type="submit" value="Search"/></td>'+
                    '</tr>'+
                '</form>'+
            '</table>');
            if(req.method=='POST')
            {
                var sdata="";
                req.on('data', (chunk)=>{
                    sdata = sdata+chunk.toString();
                });
                req.on('end', ()=>{
                    var d = qs.parse(sdata);
                    var uname = d.uname;
                    var sql = "SELECT * FROM product WHERE
                    name='"+uname+"' or brand='"+uname+"'";
                    con.query(sql,function(err,results) {
                        if(err)
                        {
                            console.log(err.message);
                        }
                        else{
                            res.write('<br><br><table><thead><tr><td>ID</td>
                            <td>Name</td><td>Brand</td><td>Quantity</td>
                            <td>Price</td></tr></thead><tbody>');
                            results.forEach(element => {
                                res.write('<tr>'+

```



```

        '<td>' + element.id + '</td>' +
        '<td>' + element.name + '</td>' +
        '<td>' + element.brand + '</td>' +
        '<td>' + element.quantity + '</td>' +
        '<td>' + element.price + '</td>' +
        '</tr>');
    });
    res.end('</tbody></table></body></html>');
  }
  con.end();
});
}
else{
  res.end('</body></html>');
}
}
});
}).listen(3000);

```

Output:

The output shows four browser screenshots of the application running on localhost:3000. Each screenshot displays a search form and a table of results.

Top Left Screenshot: The search bar contains 'Soap'. The table below it is empty.

Top Right Screenshot: The search bar is empty. The table below it contains one row of data:

ID	Name	Brand	Quantity	Price
1	Soap	Dettol	3	20

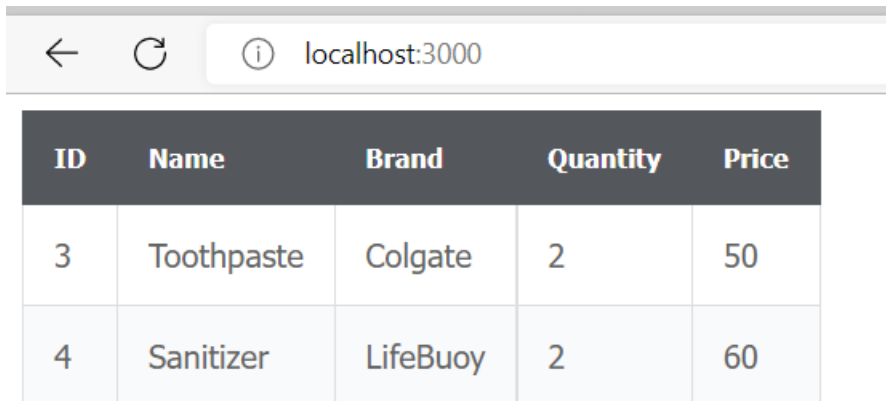
Bottom Left Screenshot: The search bar contains 'LifeBuoy'. The table below it is empty.

Bottom Right Screenshot: The search bar is empty. The table below it contains one row of data:

ID	Name	Brand	Quantity	Price
4	Sanitizer	LifeBuoy	2	60

Que:6 Write a node.js program to retrieve all the products whose quantity is less than 3.

```
var mysql = require('mysql');
var http = require('http');
const fs = require('fs');
http.createServer(function(req, res)
{
    var con = mysql.createConnection({
        host:'localhost',
        user:'root',
        password:'',
        database:'Node_test'
    });
    con.connect(function(err) {
        if(err)
        {
            throw err
        }
        else{
            var mycss = fs.readFileSync('./p6_4_mystyle.css');
            res.write('<html><head><style>'+mycss+'</style></head><body>
            <table><thead><tr><td>ID</td><td>Name</td>
            <td>Brand</td><td>Quantity</td>
            <td>Price</td></tr></thead><tbody>');
            var sql = "SELECT * FROM product WHERE quantity<3";
            con.query(sql, function(err, results)
            {
                if(err)
                {
                    throw err;
                }
                else{
                    results.forEach(element => {
                        res.write('<tr>'+
                            '<td>'+element.id+'</td>'+
                            '<td>'+element.name+'</td>'+
                            '<td>'+element.brand+'</td>'+
                            '<td>'+element.quantity+'</td>'+
                            '<td>'+element.price+'</td>'+
                            '</tr>');
                    });
                }
                res.end('</tbody></table></body></html>');
                con.end();
            });
        }
    });
}).listen(3000);
```

Output:


A screenshot of a web browser window. The address bar shows 'localhost:3000'. Below the address bar is a table with 5 columns: ID, Name, Brand, Quantity, and Price. The table contains two rows of data.

ID	Name	Brand	Quantity	Price
3	Toothpaste	Colgate	2	50
4	Sanitizer	LifeBuoy	2	60

Que:7 Write a node.js program to update the price of a specific item in the product table.

```
var mysql = require('mysql');
var http = require('http');
const qs = require('querystring');
const fs = require('fs');
http.createServer(function(req, res)
{
    var con = mysql.createConnection({
        host:'localhost',
        user:'root',
        password:'',
        database:'Node_test'
    });
    con.connect(function(err) {
        if(err)
        {
            throw err
        }
        else{
            var mycss = fs.readFileSync('./p6_4_mystyle.css');
            var myjs = fs.readFileSync('./p6_3_myjs.js');
            res.write('<html><head><script>'+myjs+'</script>
            <style>'+mycss+'</style></head><body><table>
            <thead><tr><td>ID</td><td>Name</td>
            <td>Brand</td><td>Quantity</td><td>Price</td>
            <td>Operation</td></tr></thead><tbody>');
            if(req.method=='POST')
            {
                var sdata="";
                req.on('data', (chunk)=>{
                    sdata = sdata+chunk.toString();
                });
                req.on('end', ()=>{
```

```

        var d = qs.parse(sdata);
        var id = d.id;
        var price = d.price;
        var sql = "UPDATE product SET price='"+price+"'
        WHERE id='"+id+"'";
        con.query(sql,function(err) {
            if(err)
            {
                console.log(err.message);
            }
            else{
                var sql1 = "SELECT * FROM product";
                con.query(sql1,function(err,results)
                {
                    if(err)
                    {
                        throw err;
                    }
                    else{
                        results.forEach(element => {
                            res.write('<tr>'+
                                '<form action="/" method="post">'+
                                '<td>'+element.id+'
                                <input type="hidden"
                                value="'+element.id+'
                                name="id"/></td>'+
                                '<td>'+element.name+'</td>'+
                                '<td>'+element.brand+'</td>'+
                                '<td>'+element.quantity+'</td>'+
                                '<td><input type="text"
                                name="price"
                                value="'+element.price+'"/></td>'+
                                '<td><input type="submit"
                                value="Update">'+
                                '</form>'+
                                '</tr>');
                        });
                        res.end('</tbody></table>
                        <div id="info_message">
                        Record Updated Successful
                        </div></body></html>');
                    }
                });
            }
        });
    }
    else{
        var sql = "SELECT * FROM product";
        con.query(sql,function(err,results)
        {
            if(err)
            {
                throw err;
            }
        })
    }
}

```

```

else{
    results.forEach(element => {
        res.write('<tr>' +
            '<form action="/" method="post">' +
            '<td>' + element.id + '<input type="hidden" ' +
            'value="' + element.id + '" name="id"/></td>' +
            '<td>' + element.name + '</td>' +
            '<td>' + element.brand + '</td>' +
            '<td>' + element.quantity + '</td>' +
            '<td><input type="text" name="price" ' +
            'value="' + element.price + '" /></td>' +
            '<td><input type="submit" value="Update">' +
            '</form>' +
            '</tr>');
    });
}
res.end('</tbody></table></body></html>');
con.end();
});
}
});
}).listen(3000);

```

Output:

← ↻ ⓘ localhost:3000

ID	Name	Brand	Quantity	Price	Operation
1	Soap	Dettol	3	<input type="text" value="20"/>	<input type="button" value="Update"/>
2	Shampoo	Loreal	5	<input type="text" value="100"/>	<input type="button" value="Update"/>
3	Toothpaste	Colgate	2	<input type="text" value="50"/>	<input type="button" value="Update"/>
4	Sanitizer	LifeBuoy	2	<input type="text" value="60"/>	<input type="button" value="Update"/>

← ↻ ⓘ localhost:3000

ID	Name	Brand	Quantity	Price	Operation
1	Soap	Dettol	3	<input type="text" value="20"/>	<input type="button" value="Update"/>
2	Shampoo	Loreal	5	<input type="text" value="50"/>	<input type="button" value="Update"/>
3	Toothpaste	Colgate	2	<input type="text" value="50"/>	<input type="button" value="Update"/>
4	Sanitizer	LifeBuoy	2	<input type="text" value="60"/>	<input type="button" value="Update"/>

Record Updated Successful

Que:8 Write a node.js program to delete specific products from the product table.

```

var mysql = require('mysql');
var http = require('http');
const qs = require('querystring');
const fs = require('fs');
http.createServer(function(req, res)
{
    var con = mysql.createConnection({
        host:'localhost',
        user:'root',
        password:'',
        database:'Node_test'
    });
    con.connect(function(err) {
        if(err)
        {
            throw err
        }
        else{
            var mycss = fs.readFileSync('./p6_4_mystyle.css');
            var myjs = fs.readFileSync('./p6_3_myjs.js');
            res.write('<html><head><script>'+myjs+'</script>
            <style>'+mycss+'</style></head><body><table>
            <thead><tr><td>ID</td><td>Name</td>
            <td>Brand</td><td>Quantity</td><td>Price</td>
            <td>Operation</td></tr></thead><tbody>');
            if(req.method=='POST')
            {
                var sdata="";
                req.on('data', (chunk)=>{
                    sdata = sdata+chunk.toString();
                });
                req.on('end', ()=>{
                    var d = qs.parse(sdata);
                    var id = d.id;
                    var sql = "DELETE FROM product WHERE id='"+id+"'";
                    con.query(sql,function(err) {
                        if(err)
                        {
                            console.log(err.message);
                        }
                        else{
                            var sql1 = "SELECT * FROM product";
                            con.query(sql1,function(err,results)
                            {
                                if(err)
                                {
                                    throw err;
                                }
                                else{
                                    results.forEach(element => {
                                        res.write('<tr>'+
                                        '<form action="/" method="post">'+




```

```




        '<td>'+element.id+'
        <input type="hidden"
        value="'+element.id+'"
        name="id"/></td>'+
        '<td>'+element.name+'</td>'+
        '<td>'+element.brand+'</td>'+
        '<td>'+element.quantity+'</td>'+
        '<td>'+element.price+'</td>'+
        '<td><input type="submit"
        value="Delete">'+
        '</form>'+
        '</tr>');
    });
    res.end('</tbody></table>
    <div id="info_message">
    Record DELETED Successful
    </div></body></html>');
    }
    });
    }
    con.end();
  });
}
else{
  var sql = "SELECT * FROM product";
  con.query(sql,function(err,results)
  {
    if(err)
    {
      throw err;
    }
    else{
      results.forEach(element => {
        res.write('<tr>'+
        '<form action="/" method="post">'+
        '<td>'+element.id+'<input type="hidden"
        value="'+element.id+'" name="id"/></td>'+
        '<td>'+element.name+'</td>'+
        '<td>'+element.brand+'</td>'+
        '<td>'+element.quantity+'</td>'+
        '<td>'+element.price+'</td>'+
        '<td><input type="submit" value="Delete">'+
        '</form>'+
        '</tr>');
      });
    }
    res.end('</tbody></table></body></html>');
    con.end();
  });
}
}
});
}).listen(3000);

```

Output:

   localhost:3000

ID	Name	Brand	Quantity	Price	Operation
1	Soap	Dettol	3	20	<button>Delete</button>
2	Shampoo	Loreal	5	50	<button>Delete</button>
3	Toothpaste	Colgate	2	50	<button>Delete</button>
4	Sanitizer	LifeBuoy	2	60	<button>Delete</button>

   localhost:3000

ID	Name	Brand	Quantity	Price	Operation
1	Soap	Dettol	3	20	<button>Delete</button>
3	Toothpaste	Colgate	2	50	<button>Delete</button>
4	Sanitizer	LifeBuoy	2	60	<button>Delete</button>

Record DELETED Successful