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| **Lab No** | 05 | **Reg. No** | 224921 |
| **Student Name** | Muhammad Saad Tariq | **Section** | A |

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| Solution Task 1 |
| Code:  var db = require('mysql');  var con = db.createConnection({  host: "localhost",  user: "root",  password: "timelordscience16"  });  con.connect(function(err){  if(err)  throw err;  console.log("Connected!");  });  Output: |

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| Solution Task 2 |
| Write to DB  Code:  var db = require('mysql');  var con = db.createConnection({  host: "localhost",  user: "root",  password: "timelordscience16",  database: "mydb"  });  con.connect(function(err){  if(err)  throw err;  console.log("Connected!");  var sql = "INSERT INTO customers (name, address) VALUES?";  var val = [  ['Saad', 'Highway99'],  ['Umar', 'Park Road'],  ['Fahad', 'Main Road'],  ['Hannibal', 'Sideway']  ];  con.query(sql, [val], function(err, result){  if(err)  throw err;  console.log("Number of records inserted: " + result.affectedRows);  });  });  Output: |

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| Solution Task 3 |
| Code:  var db = require('mysql');  var con = db.createConnection({  host: "localhost",  user: "root",  password: "timelordscience16"  });  con.connect(function(err){  if(err)  throw err;  console.log("Connected!");  var sql = "CREATE DATABASE mydb";  con.query(sql, function(err, result){  if(err)  throw err;  console.log("Database Created");  });  });  Output: |

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| Solution Task 4 |
| Code:  var db = require('mysql');  var con = db.createConnection({  host: "localhost",  user: "root",  password: "timelordscience16",  database: "mydb"  });  con.connect(function(err){  if(err)  throw err;  console.log("Connected!");  var sql = "CREATE TABLE customers (name VARCHAR(255), address VARCHAR(255))";  con.query(sql, function(err, result){  if(err)  throw err;  console.log("Table Created");  });  });  Output: |

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| Solution Task 5 |
| Code:  var db = require('mysql');  var con = db.createConnection({  host: "localhost",  user: "root",  password: "timelordscience16",  database: "mydb"  });  con.connect(function(err){  if(err)  throw err;  console.log("Connected!");  var sql = "ALTER TABLE customers ADD COLUMN id INT AUTO\_INCREMENT PRIMARY KEY";  con.query(sql, function(err, result){  if(err)  throw err;  console.log("Table Altered");  });  });  Output: |

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| Solution Task 6 |
| Code:  db = require('mysql');  var con = db.createConnection({  host: "localhost",  user: "root",  password: "timelordscience16",  database: "mydb"  });  con.connect(function(err){  if(err)  throw err;  console.log("Connected!");  var sql = "INSERT INTO customers (name, address) VALUES ('ABC Sol','Highway 16')";  con.query(sql, function(err, result){  if(err)  throw err;  console.log("Record Inserted");  });  Output: |

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| Solution Task 7 |
| Code:  var db = require('mysql');  var con = db.createConnection({  host: "localhost",  user: "root",  password: "timelordscience16",  database: "mydb"  });  con.connect(function(err){  if(err)  throw err;  console.log("Connected!");  var sql = "INSERT INTO customers (name, address) VALUES?";  var val = [  ['Saad', 'Highway99'],  ['Umar', 'Park Road'],  ['Fahad', 'Main Road'],  ['Hannibal', 'Sideway']  ];  con.query(sql, [val], function(err, result){  if(err)  throw err;  console.log("Number of records inserted: " + result.affectedRows);  });  });  Output: |

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| Solution Task 8 |
| Code:  var db = require('mysql');  var con = db.createConnection({  host: "localhost",  user: "root",  password: "timelordscience16",  database: "mydb"  });  con.connect(function(err){  if(err)  throw err;  console.log("Connected!");  var sql = "SELECT \* FROM customers";  con.query(sql, function(err, result, fields){  if(err)  throw err;  console.log(result);  });  });  Output: |

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| Solution Task 9 |
| Code:  var db = require('mysql');  var con = db.createConnection({  host: "localhost",  user: "root",  password: "timelordscience16",  database: "mydb"  });  con.connect(function(err){  if(err)  throw err;  console.log("Connected!");  var sql = "SELECT name,address FROM customers";  con.query(sql, function(err, result, fields){  if(err)  throw err;  console.log(result);  });  });  Output: |

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| Solution Task 10 |
| Code:  var db = require('mysql');  var con = db.createConnection({  host: "localhost",  user: "root",  password: "timelordscience16",  database: "mydb"  });  con.connect(function(err){  if(err)  throw err;  console.log("Connected!");  var sql = "SELECT name,address FROM customers";  con.query(sql, function(err, result, fields){  if(err)  throw err;  console.log(fields);  });  });  Output: |

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| Solution Task 11 |
| Code:  var db = require('mysql');  var con = db.createConnection({  host: "localhost",  user: "root",  password: "timelordscience16",  database: "mydb"  });  con.connect(function(err){  if(err)  throw err;  console.log("Connected!");  var sql = "SELECT \* FROM customers WHERE address = 'Park Road'";  con.query(sql, function(err, result, fields){  if(err)  throw err;  console.log(result);  });  });  Output: |

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| Solution Task 12 |
| Code:  var db = require('mysql');  var con = db.createConnection({  host: "localhost",  user: "root",  password: "timelordscience16",  database: "mydb"  });  con.connect(function(err){  if(err)  throw err;  console.log("Connected!");  var sql = "SELECT \* FROM customers WHERE address LIKE 'S%'";  con.query(sql, function(err, result, fields){  if(err)  throw err;  console.log(result);  });  });  Output: |

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| Solution Task 13 |
| Code:  var db = require('mysql');  var con = db.createConnection({  host: "localhost",  user: "root",  password: "timelordscience16",  database: "mydb"  });  con.connect(function(err){  if(err)  throw err;  console.log("Connected!");  var sql = "SELECT \* FROM customers ORDER BY name";  con.query(sql, function(err, result, fields){  if(err)  throw err;  console.log(result);  });  });  Output: |

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| Solution Task 14 |
| Delete address = ‘Sideway’  Code:  var db = require('mysql');  var con = db.createConnection({  host: "localhost",  user: "root",  password: "timelordscience16",  database: "mydb"  });  con.connect(function(err){  if(err)  throw err;  console.log("Connected!");  var sql = "DELETE FROM customers WHERE address = 'Sideway'";  con.query(sql, function(err, result, fields){  if(err)  throw err;  console.log(result);  });  });  Output: |

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| Solution Task 15 |
| Code:  var db = require('mysql');  var con = db.createConnection({  host: "localhost",  user: "root",  password: "timelordscience16",  database: "mydb"  });  con.connect(function(err){  if(err)  throw err;  console.log("Connected!");  var sql = "DROP TABLE customers";  con.query(sql, function(err, result, fields){  if(err)  throw err;  console.log("Table Dropped");  });  });  Output: |

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| Solution Task 16 |
| Update ‘Highway99’ to ‘Canyon123’  Code:  var db = require('mysql');  var con = db.createConnection({  host: "localhost",  user: "root",  password: "timelordscience16",  database: "mydb"  });  con.connect(function(err){  if(err)  throw err;  console.log("Connected!");  var sql = "UPDATE customers SET address = 'Canyon 123' WHERE address = 'Highway99'";  con.query(sql, function(err, result, fields){  if(err)  throw err;  console.log(result.affectedRows+ " records updated");  });  });  Output: |

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| Solution Task 17 |
| First 5  Code:  var db = require('mysql');  var con = db.createConnection({  host: "localhost",  user: "root",  password: "timelordscience16",  database: "mydb"  });  con.connect(function(err){  if(err)  throw err;  console.log("Connected!");  var sql = "SELECT \* FROM customers LIMIT 5";  con.query(sql, function(err, result, fields){  if(err)  throw err;  console.log(result);  });  });  Output:    From 3  Code:  var db = require('mysql');  var con = db.createConnection({  host: "localhost",  user: "root",  password: "timelordscience16",  database: "mydb"  });  con.connect(function(err){  if(err)  throw err;  console.log("Connected!");  var sql = "SELECT \* FROM customers LIMIT 5 OFFSET 2";  con.query(sql, function(err, result, fields){  if(err)  throw err;  console.log(result);  });  });  Output: |

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| Solution Task 18 |
| SIMPLE JOIN  Code:  var db = require('mysql');  var con = db.createConnection({  host: "localhost",  user: "root",  password: "timelordscience16",  database: "mydb"  });  con.connect(function(err){  if(err)  throw err;  console.log("Connected!");  var sql = "SELECT users.name AS user\_name, products.name AS favourite\_product FROM users JOIN products ON users.favourite\_product = products.id";  con.query(sql,function(err, result){  if(err)  throw err;  console.log(result);  });  });  Output:    RIGHT JOIN  Code:  var db = require('mysql');  var con = db.createConnection({  host: "localhost",  user: "root",  password: "timelordscience16",  database: "mydb"  });  con.connect(function(err){  if(err)  throw err;  console.log("Connected!");  var sql = "SELECT users.name AS user\_name, products.name AS favourite\_product FROM users RIGHT JOIN products ON users.favourite\_product = products.id";  con.query(sql,function(err, result){  if(err)  throw err;  console.log(result);  });  });  Output:    LEFT JOIN  Code:  var db = require('mysql');  var con = db.createConnection({  host: "localhost",  user: "root",  password: "timelordscience16",  database: "mydb"  });  con.connect(function(err){  if(err)  throw err;  console.log("Connected!");  var sql = "SELECT users.name AS user\_name, products.name AS favourite\_product FROM users LEFT JOIN products ON users.favourite\_product = products.id";  con.query(sql,function(err, result){  if(err)  throw err;  console.log(result);  });  });  Output: |