

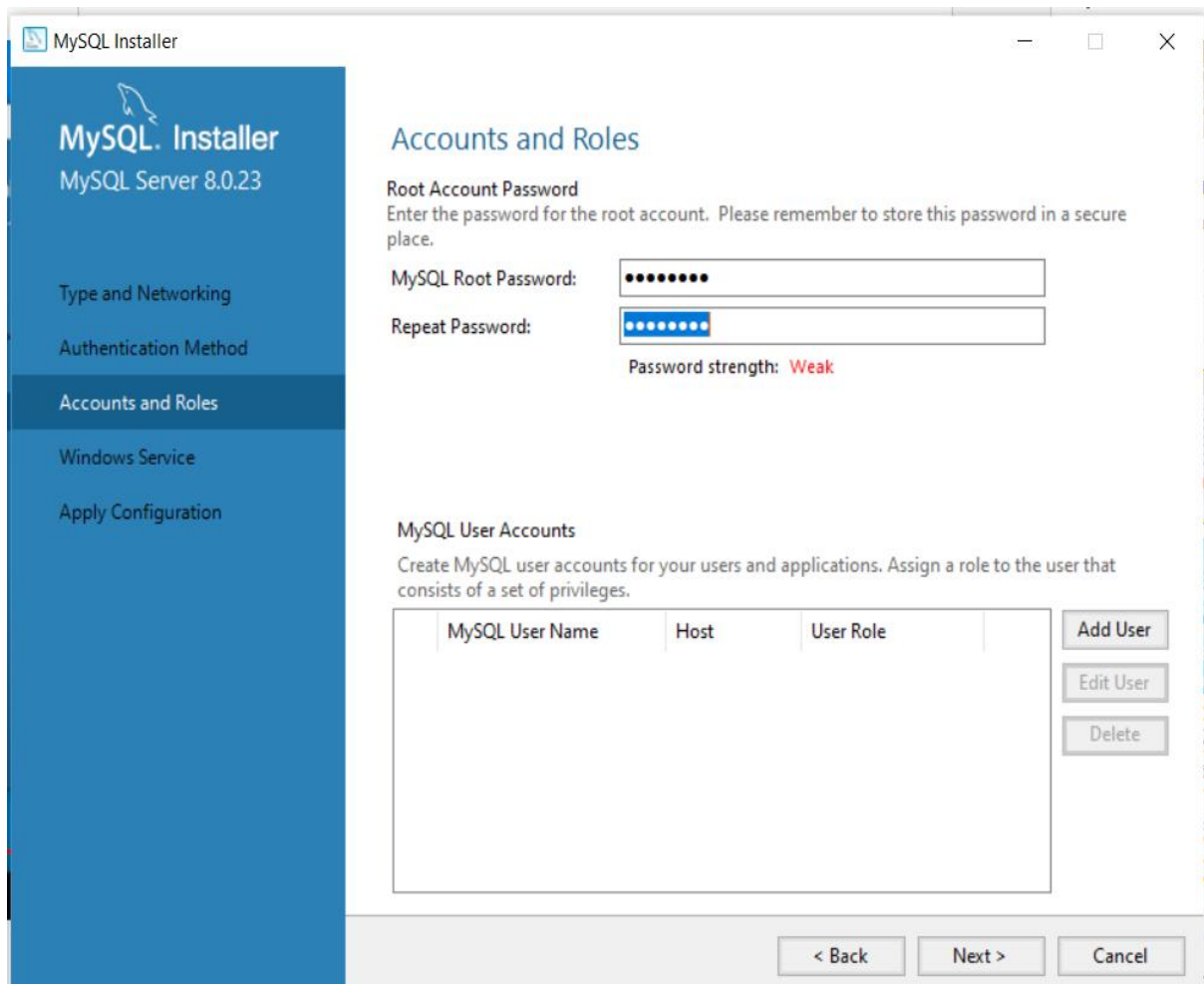
Practical No. 4

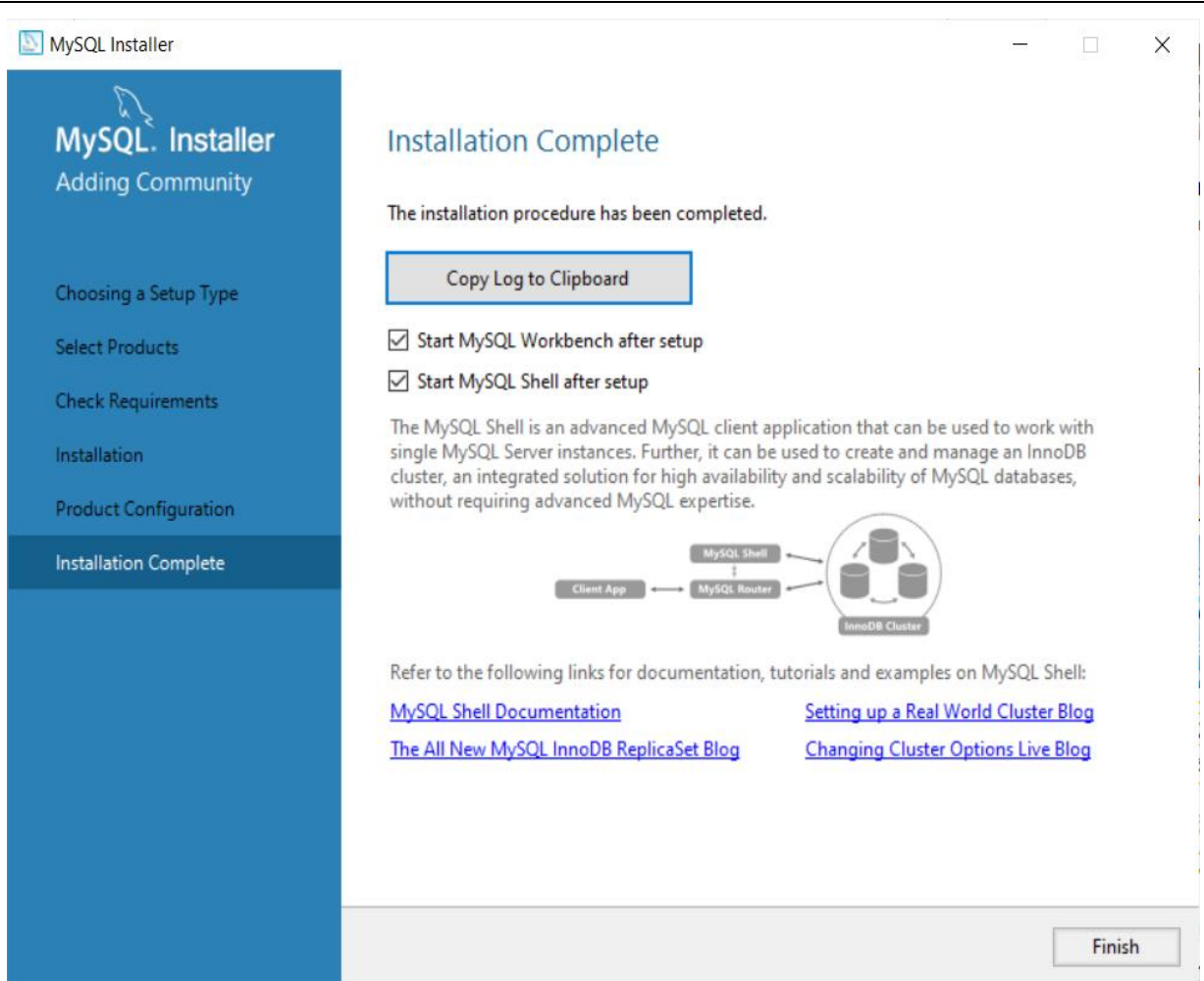
To connect and use database in Node.js Application.

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Problem Statement 1:

1. Install MySQL server on your machine by clicking and downloading the following link.
(<https://dev.mysql.com/downloads/mysql/>)





2. Configure and run MySQL server.

```
Command Prompt - mysql -u root -p

Microsoft Windows [Version 10.0.19042.867]
(c) 2020 Microsoft Corporation. All rights reserved.

C:\Users\hp>cd C:\Program Files\MySQL\MySQL Server 8.0\bin

C:\Program Files\MySQL\MySQL Server 8.0\bin>mysql -u root -p
Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 14
Server version: 8.0.23 MySQL Community Server - GPL

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql>
```

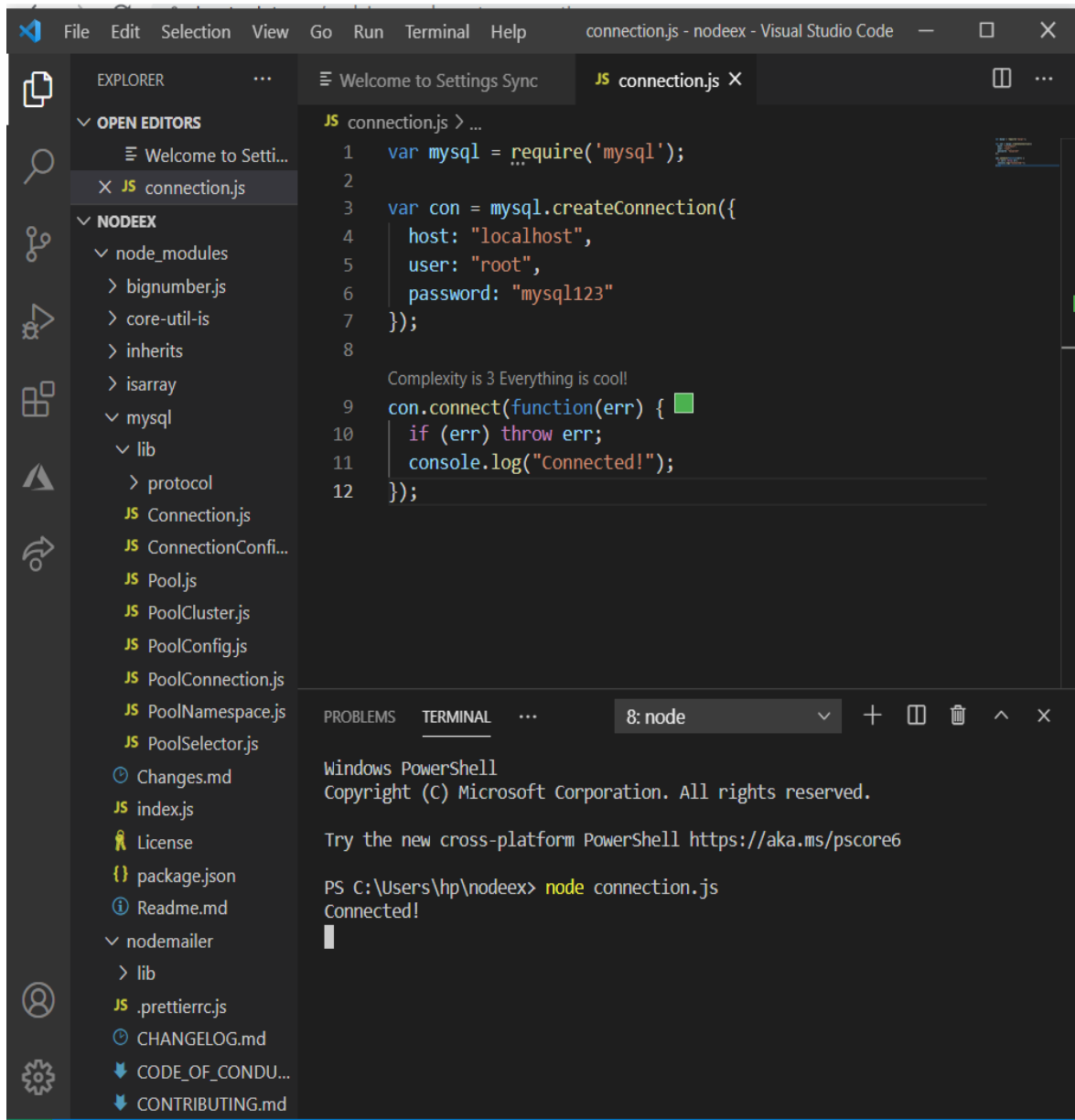
3. Install 'mysql' external module in your current working directory using npm.

```
Command Prompt
Microsoft Windows [Version 10.0.19042.867]
(c) 2020 Microsoft Corporation. All rights reserved.

C:\Users\hp>npm install mysql
npm WARN saveError ENOENT: no such file or directory, open 'C:\Users\hp\package.json'
npm WARN enoent ENOENT: no such file or directory, open 'C:\Users\hp\package.json'
npm WARN hp No description
npm WARN hp No repository field.
npm WARN hp No README data
npm WARN hp No license field.

+ mysql@2.18.1
added 11 packages from 15 contributors and audited 12 packages in 4.588s
found 0 vulnerabilities

C:\Users\hp>
```



The screenshot shows the Visual Studio Code interface. On the left, the Explorer sidebar displays the file structure of a project named 'NODEEX'. The 'mysql' module is listed under the 'node_modules' directory. The main editor window shows the 'connection.js' file with the following code:

```
1 var mysql = require('mysql');
2
3 var con = mysql.createConnection({
4   host: "localhost",
5   user: "root",
6   password: "mysql123"
7 });
8
9 con.connect(function(err) {
10   if (err) throw err;
11   console.log("Connected!");
12 });
```

Below the editor, the TERMINAL panel shows the command prompt output for running the script:

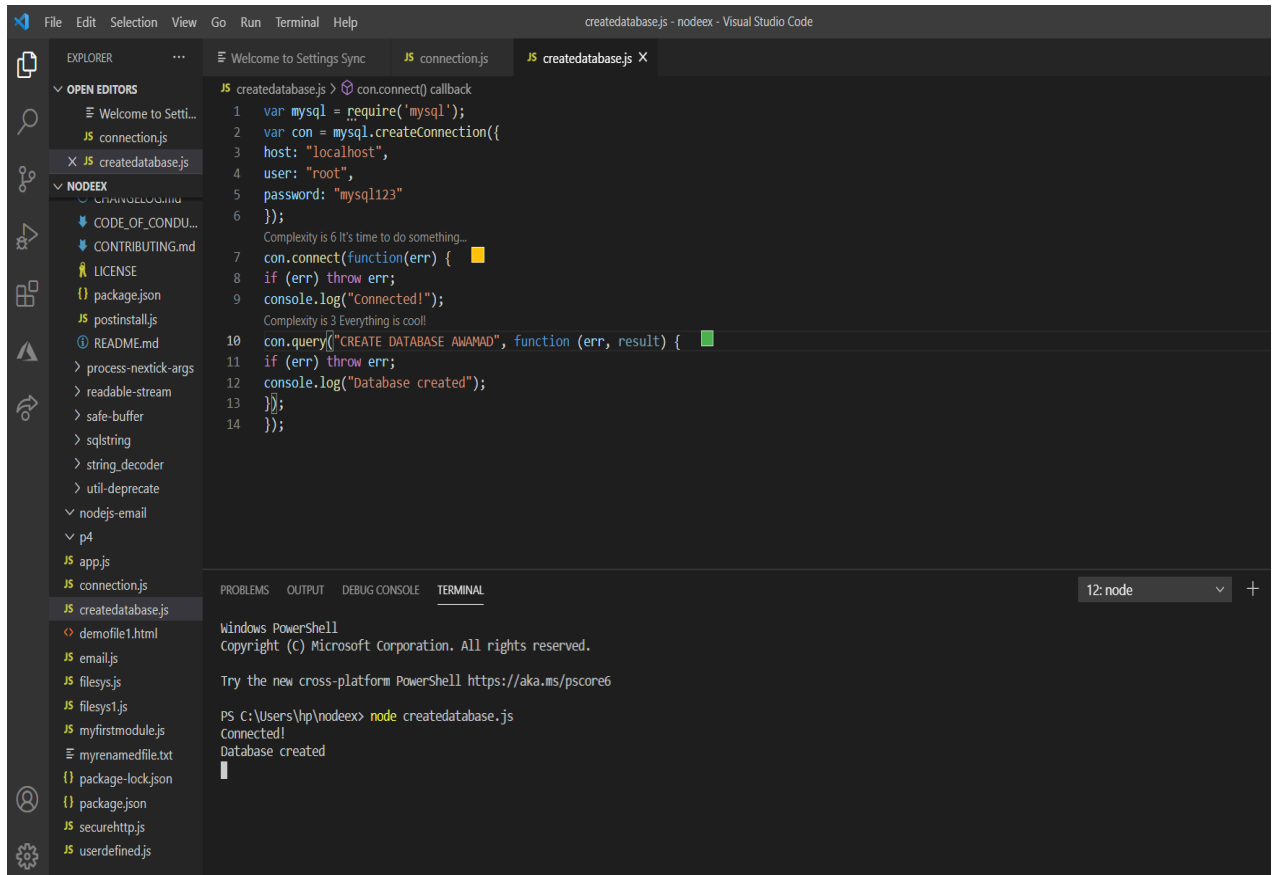
```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\hp\nodeex> node connection.js
Connected!
```

Problem Statement 2:

1. Write a Node.js Application to create a database named 'AWAMAD' by connecting to MySQL server.



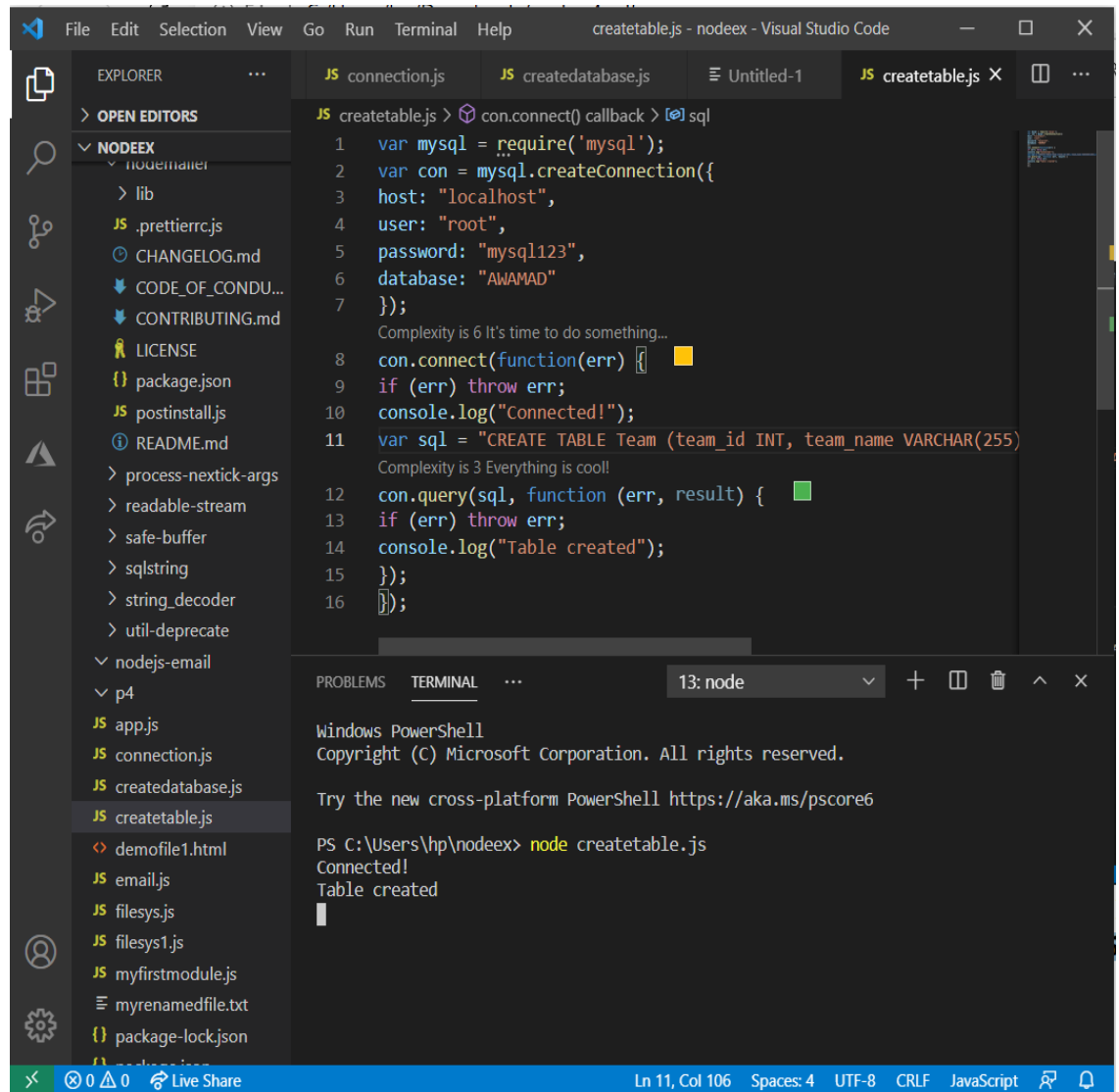
The screenshot shows the Visual Studio Code interface with a Node.js application open. The Explorer sidebar on the left shows the file structure, including 'createdatabase.js'. The main editor displays the code for 'createdatabase.js', which uses the 'mysql' module to connect to a MySQL server and create a database named 'AWAMAD'. The code is as follows:

```
1 var mysql = require('mysql');
2 var con = mysql.createConnection({
3   host: "localhost",
4   user: "root",
5   password: "mysql123"
6 });
7 con.connect(function(err) {
8   if (err) throw err;
9   console.log("Connected!");
10  con.query("CREATE DATABASE AWAMAD", function (err, result) {
11    if (err) throw err;
12    console.log("Database created");
13  });
14 });
```

The TERMINAL panel at the bottom shows the command prompt output, confirming the successful connection and database creation:

```
PS C:\Users\hp\nodeex> node createdatabase.js
Connected!
Database created
```

2. Write a Node.js Application to create a table named
 - a. **Batch T8** – 'Team' with columns 'team_id', 'team_name', 'team_lead', and 'team_count'.



- Write a Node.js application to insert the data in the appropriate table.

The screenshot shows a Visual Studio Code editor with the file 'insertrecord.js' open. The code defines a MySQL connection and inserts four records into a table named 'Team'. The terminal output shows the command 'node insertrecord.js' being executed, resulting in a successful connection and the insertion of 4 records.

```
1 var mysql = require('mysql');
2 var con = mysql.createConnection({
3   host: "localhost",
4   user: "root",
5   password: "mysql123",
6   database: "AWAMAD"
7 });
8
9 console.log("Connected!");
10
11 var sql = "INSERT INTO Team (team_id, team_name, team_lead, team_count) VALUES?";
12 var values=[
13   ['1', 'team1', 'Pooja shinde', '2'],
14   ['2', 'team2', 'payal Yadav', '3'],
15   ['3', 'team3', 'Tulsi Galande', '2'],
16   ['4', 'team4', 'Shivani Awasare', '4']
17 ];
18
19 con.query(sql,[values], function (err, result) {
20   if (err) throw err;
21   console.log("Number of records inserted : "+result.affectedRows);
22 });
```

Terminal Output:

```
PS C:\Users\hp\nodeex> node insertrecord.js
Connected!
Number of records inserted : 4
```

- Write a Node.js Application to retrieve the data from the selected table and display it on the console. (Use different queries to retrieve the data from the table.)

#1

The screenshot shows a Visual Studio Code editor with the file 'retrieve1.js' open. The code defines a MySQL connection and retrieves data from the 'Team' table using a SQL query. The terminal output shows the command 'node retrieve1.js' being executed, resulting in a successful connection and the retrieval of data from the table.

```
1 var mysql = require('mysql');
2
3 var con = mysql.createConnection({
4   host: "localhost",
5   user: "root",
6   password: "mysql123",
7   database: "AWAMAD"
8 });
9
10 con.connect(function(err) {
11   if (err) throw err;
12   console.log("Connected!");
13
14   con.query("SELECT * FROM Team", function (err, result, fields) {
15     if (err) throw err;
16     console.log(result);
17   });
18 });
```

Terminal Output:

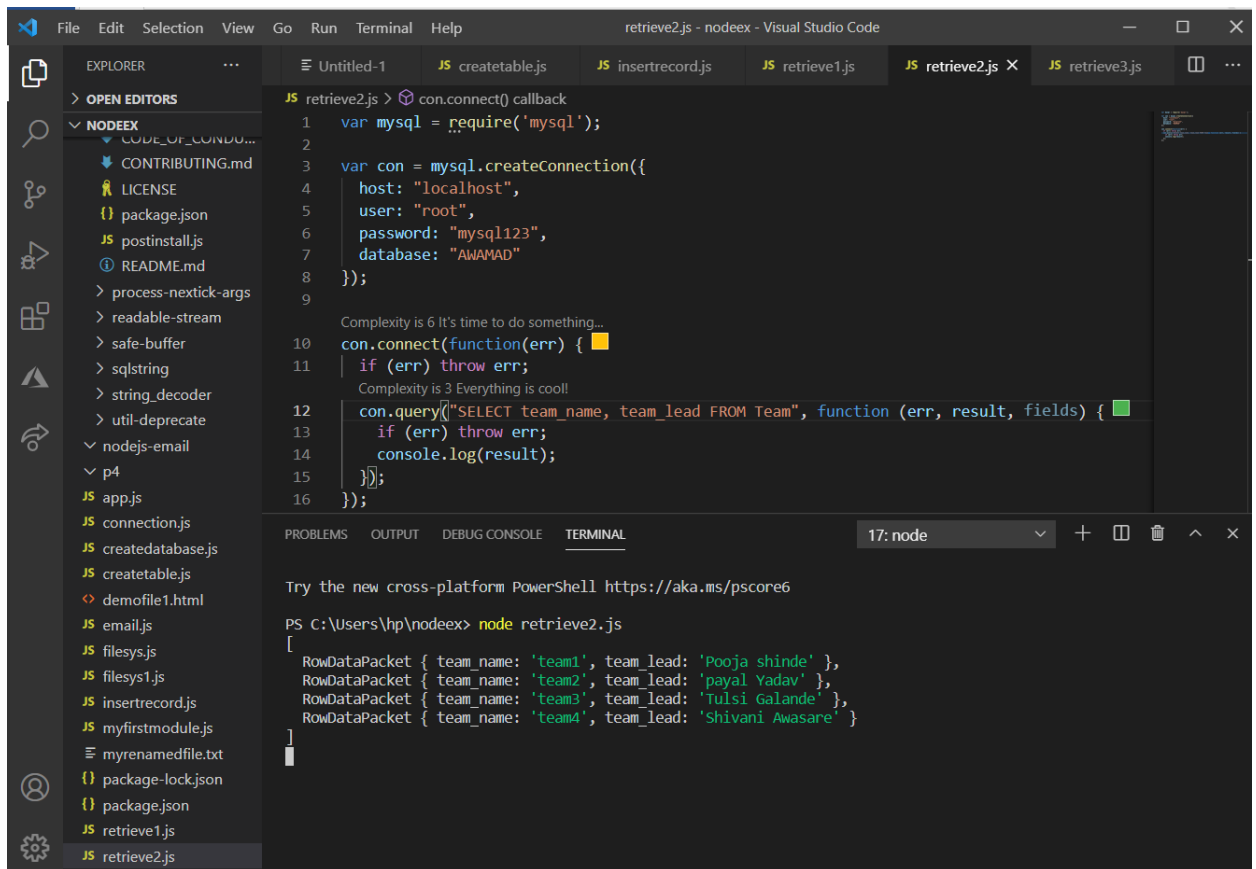
```
PS C:\Users\hp\nodeex> node retrieve1.js
[
  RowDataPacket {
    team_id: 1,
    team_name: 'team1',
    team_lead: 'Pooja shinde',
    team_count: 2
  },
  RowDataPacket {
    team_id: 2,
    team_name: 'team2',
    team_lead: 'payal Yadav',
    team_count: 3
  },
  RowDataPacket {
    team_id: 3,
    team_name: 'team3',
    team_lead: 'Tulsi Galande',
    team_count: 2
  },
  RowDataPacket {
    team_id: 4,
    team_name: 'team4',
    team_lead: 'Shivani Awasare',
    team_count: 4
  }
]
```

Output:

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL

PS C:\Users\hp\nodeex> node retrieve1.js
[
  RowDataPacket {
    team_id: 1,
    team_name: 'team1',
    team_lead: 'Pooja shinde',
    team_count: 2
  },
  RowDataPacket {
    team_id: 2,
    team_name: 'team2',
    team_lead: 'payal Yadav',
    team_count: 3
  },
  RowDataPacket {
    team_id: 3,
    team_name: 'team3',
    team_lead: 'Tulsi Galande',
    team_count: 2
  },
  RowDataPacket {
    team_id: 4,
    team_name: 'team4',
    team_lead: 'Shivani Awasare',
    team_count: 4
  }
]

```



Visual Studio Code interface showing a Node.js application with MySQL database connectivity. The Explorer sidebar shows a project named 'NODEEX' with various files. The main editor shows 'retrieve2.js' with code for connecting to a MySQL database and querying for team data. The terminal shows the command 'node retrieve2.js' and its output, which lists team names and leads.

```
1 var mysql = require('mysql');
2
3 var con = mysql.createConnection({
4   host: "localhost",
5   user: "root",
6   password: "mysql123",
7   database: "AWAMAD"
8 });
9
10 con.connect(function(err) {
11   if (err) throw err;
12   console.log("Connected to MySQL database");
13   con.query("SELECT team_name, team_lead FROM Team", function (err, result, fields) {
14     if (err) throw err;
15     console.log(result);
16   });
17 });
```

Terminal Output:

```
PS C:\Users\hp\nodeex> node retrieve2.js
[
  RowDataPacket { team_name: 'team1', team_lead: 'Pooja shinde' },
  RowDataPacket { team_name: 'team2', team_lead: 'payal Yadav' },
  RowDataPacket { team_name: 'team3', team_lead: 'Tulsi Galande' },
  RowDataPacket { team_name: 'team4', team_lead: 'Shivani Awasare' }
]
```