

CSE3055 Database Systems

Step 5 Application Development

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The user interface is builded by Flutter, Flutter is a cross platform application development framework.

The backend is written in NodeJS framework.

In the API, there are few methods and routers for building paths for HTTP requests. The NodeJS server is responsible for communicating with the database, the client (application) would send the HTTP requests and the server would connect to the database and retrieve the according data.

```
function req (query, callback) {  
  mssql.connect(dbConfig, function(err){  
    let req = new mssql.Request()  
    req.query(query, function(err,result) {  
      if(err)  
        console.dir(err)  
      else  
        console.dir(result)  
      callback(result)  
    })  
  })  
}
```

In the above figure, you can see the core function for sending a query to the database.

```
app.get('/company/get_all', (req, res,err) => {  
  db.request("SELECT * FROM Company",  
    function(results) {  
      res.send(JSON.stringify(results['recordset']))  
    })  
})
```

The second figure is showing the router function to get all companies in the database. The result is a JSON string.

```
app.post('/employee/get_by_companyid', (req, res, err) => {
  db.request("SELECT * FROM Employee where Employee_CompanyID=" + req.body
    .companyId,
    function(results) {
      res.send(JSON.stringify(results)['recordset'][0])
    })
})

app.get('/employee/get_all', (req, res, err) => {
  db.request("SELECT * FROM Employee",
    function(results) {
      res.send(JSON.stringify(results['recordset']))
    })
})
```

Above figure is showing 2 functions that are responsible for routing the API path and send the query to the database. The return types are MappedList.

UI

We have 2 pages in the UI part. First page is for getting the all Employees, the second one is getting all Companies.

“Get Employees” button will send an HTTP request to the server, the server will connect to the database, getting the data and sending the data to the client (application).

