



ONLINE TO-DO LIST

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Outline

- Introduction
- Topology
- Implementation
- Final Application

Web Service

- Is any piece of software that makes itself available over the internet and uses a standardized messaging system.
- Modern web browsers and servers implement all features in REST.

REST

REpresentational S tate T ransfer

- Rest is a software architecture style
- The Uniform interface is implemented by HTTP protocol
- REST is characterized by:
 - Stateless Server
 - Uniform Interface
 - Resource is send in the message Body

REST Features

- Resource: Any named concept.
- Resource identification: URI.
- Resource representation: Document, data.
- Messages: HTTP messages.
- Control data in messages: HTTP method (GET, POST, DELETE).
- Resource in message: Data in message body.

Components



MYSQL DATABASE



JAVASCRIPT SERVER



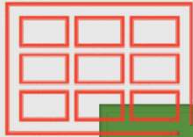
PYTHON CLIENT

MySQL Database



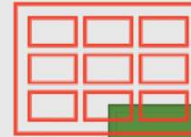
Table	Action
<input type="checkbox"/> tasks	Browse Structure Search Insert Empty Drop
<input type="checkbox"/> users	Browse Structure Search Insert Empty Drop
2 tables	Sum

MySQL Database



Users Table

- User ID
- User Unique Name



Tasks Table

- Unique ID
- Task Name
- Description
- Due Date
- Task Owner

MySQL Database

+ Options

		id	user_name
<input type="checkbox"/>	Edit	10	Masry
<input type="checkbox"/>	Edit	9	Karim4
<input type="checkbox"/>	Edit	17	Michael2
<input type="checkbox"/>	Edit	12	Abdelhameed
<input type="checkbox"/>	Edit	15	Michael
<input type="checkbox"/>	Edit	7	Abdelhameed Emad

Check all With selected: Edit Copy

+ Options

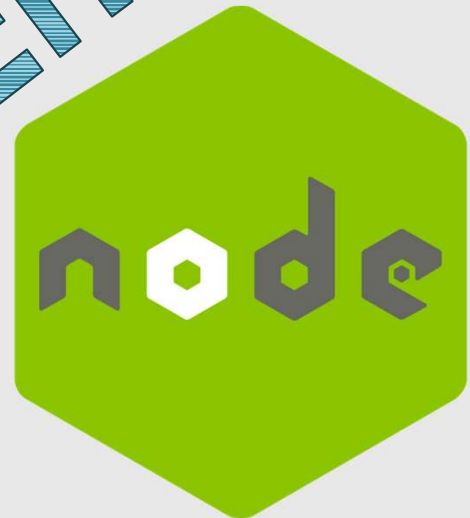
		id	name	due_date	description	user_id
<input type="checkbox"/>	Edit	57	Quiz	20191201	Lesson1&2&3	9
<input type="checkbox"/>	Edit	46	Doctor	20191210	20NewCairo01122336203	10
<input type="checkbox"/>	Edit	49	MomVisit	20191205	MomisComing	7
<input type="checkbox"/>	Edit	43	ServicesProject	20191207	Server_Database_Client	12
<input type="checkbox"/>	Edit	42	test	20200305	Test	15

Check all With selected: Edit Copy Delete Export

Server

Express JS

Back End



Server

Sign Up and
Authentication

Create or Add
Tasks

Delete or
Remove Tasks

Display all
Related Tasks

Database
Integrity

Server

```
// Delete task
app.delete('/deletetask', (req, res) => {
  // Get all the user's tasks
  app.get('/allmytasks', (req, res) => {
    const id = req.query.user_id
    let sql = `SELECT name, due_date, description, id FROM tasks WHERE user_id=${id}`;
    let query = db.query(sql, (err, results) => {
      if(err){
        console.log(err)
        throw err;
      }
      console.log(results);
      res.send(JSON.stringify(results));
    });
  });
});
```

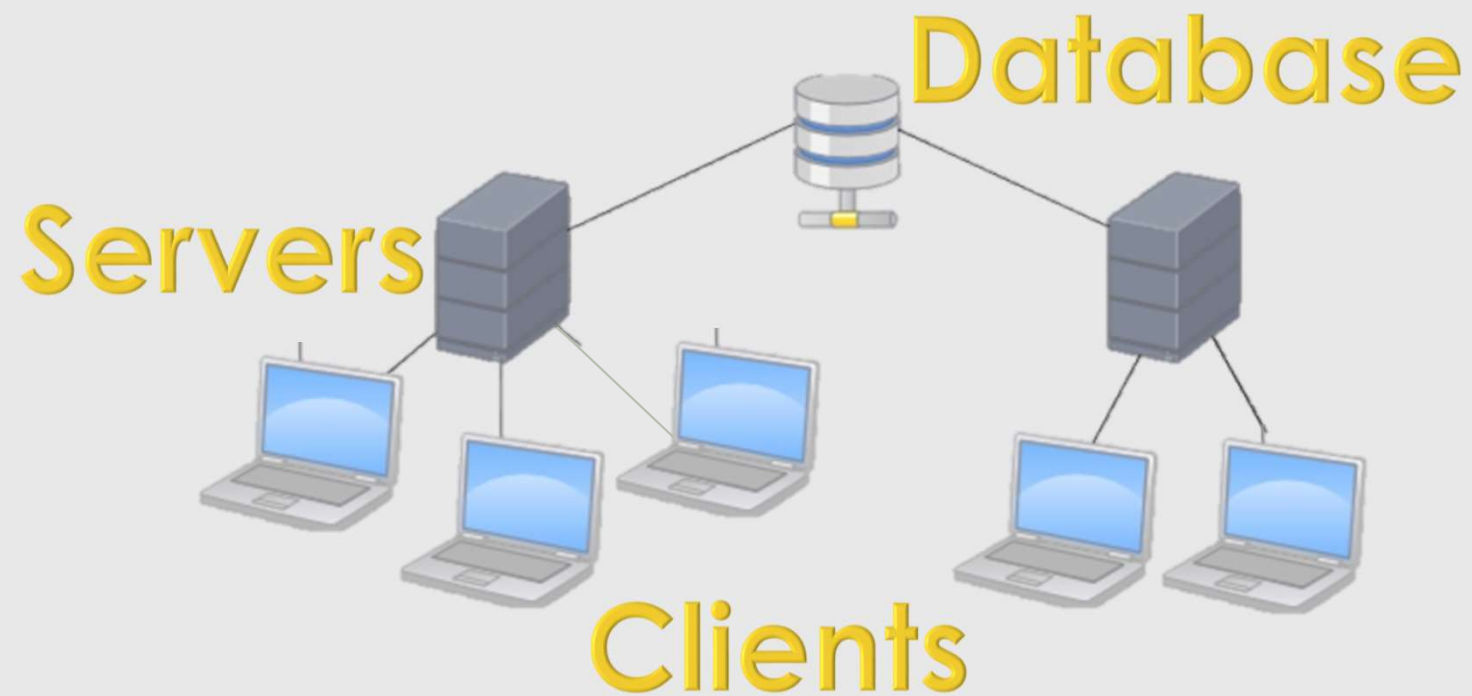
```
// Create task
app.post('/addnewtask', (req, res) => {
  const task_name = req.query.name
  const task_date = req.query.date
  const task_description = req.query.description
  const user_id = req.query.user_id
  let sql = `INSERT INTO tasks (name, due_date, description, user_id) VALUES ('${task_name}', '${task_date}', '${task_description}', ${user_id})`;
  db.query(sql, (err, results) => {
    if(err){
      console.log(err)
      throw err;
    }
    console.log(results);
    res.send('Task added successfully');
  });
});
```

Python Client



Python: Tkinter

Python Client



Python Client

The screenshot shows a Tkinter window titled "tk" with a standard macOS-style title bar (minimize, maximize, close buttons). The window contains a horizontal bar with four buttons: "QUIT" (red text), "ADD" (green text), "SHOW ALL" (blue text), and "REMOVE" (black text). Below this bar are three empty input fields. On the right side of the window is a text area containing the following text:

```
ID: 59  
Task Name: Services_Quiz  
Description: Chapter5  
Its time is: 20191207  
-----
```

Server & Client

<http://127.0.0.1:3000/signup?username=Michael>

REST ???

http://127.0.0.1:3000/allmytasks?user_id=8

<http://127.0.0.1:3000/deletetask?id=2>

http://127.0.0.1:3000/addnewtask?name=servicesHW&date=20191210&description=homework33&user_id=8