

## Backend Project Setup with TypeScript, Express, Mongoose, CORS, dotenv

### Step-by-Step Guide

#### 1. Create Project Folder

- আপনার প্রজেক্টের জন্য একটি নতুন ফোল্ডার তৈরি করুন।

#### 2. Open in VS Code

- ফোল্ডারটি Visual Studio Code-এ ওপেন করুন।

#### 3. Initialize package.json

```
npm init -y
```

#### 4. Install Dependencies

```
npm install express mongoose cors dotenv
```

```
npm install -D typescript @types/node @types/express
```

#### 5. Initialize TypeScript Configuration

```
tsc --init
```

#### 6. Configure tsconfig.json

```
{
```

```
"rootDir": "./src",  
"outDir": "./dist"  
}
```

## 7. Create Main Application File

- src নামে একটি ফোল্ডার তৈরি করুন ও তার ভিতরে app.ts ফাইল তৈরি করুন।

## 8. Setup Basic Express Server

- Express এর অফিসিয়াল “Hello World” সার্ভার কোড যোগ করুন app.ts-এ।

## 9. Add Build Script

```
"scripts": { "build": "tsc" }
```

## 10. Compile TypeScript

```
npm run build
```

## 11. Run & Test the Project

```
node dist/app.js
```

## 12. Create server.ts File

- src ফোল্ডারে server.ts ফাইল তৈরি করুন।

13. Move `app.listen()` to `server.ts`

14. Setup Mongoose Connection

```
const mongoose = require('mongoose');

async function main() {
  await mongoose.connect('mongodb://127.0.0.1:27017/test');
}
```

15. Create MongoDB Atlas Database

16. Create `.env` File

```
PORT=5000
```

```
DATABASE_URL=mongodb+srv://<username>:<password>@cluster.mongodb.net/<dbname>
```

17. Use `process.env` for Configs

18. Replace `require` with `import`

19. Install Type Definitions

```
npm install -D @types/cors @types/mongoose
```

20. Use TS Types in app.ts

```
import { Application, Request, Response } from 'express';

const app: Application = express();

app.get('/', (req: Request, res: Response) => {

    res.send('Hello World');

});
```

21. Export app from app.ts and Import in server.ts

22. Move app.listen() inside main() in server.ts

23. Wrap main() in Try-Catch

```
main().catch(err => console.log(err));
```

24. Add JSON Body Parser in app.ts

```
app.use(express.json());
```

25. Add CORS Middleware in app.ts

```
import cors from 'cors';

app.use(cors());
```

## 26. Load Environment Variables Using dotenv

```
import dotenv from 'dotenv';  
  
dotenv.config();
```