DIGINAMIC

FORMATION
Express JS

PLAN DE COURS

Chapitre 1 : Présentation Express JS

Chapitre 2 : CRUD SQL

Chapitre 3 : CRUD NoSQL

Chapitre 4 : Middlewares

Chapitre 5 : Authentification JWT

Chapitre 6 : JWT et cookies

Chapitre 7 : Open API

Chapitre 8 : Tester son code

Chapitre 1
Express JS

Le framework Express

Le framework Express JS

- Framework minimaliste (2010) pour la création d'API robustes

- npm install express
- npm init -y
- création d'un fichier app.js / index.js

Une première route

- http://localhost:3000/helloworld

Récupérer les url-params

- http://localhost:3000/url-params/test

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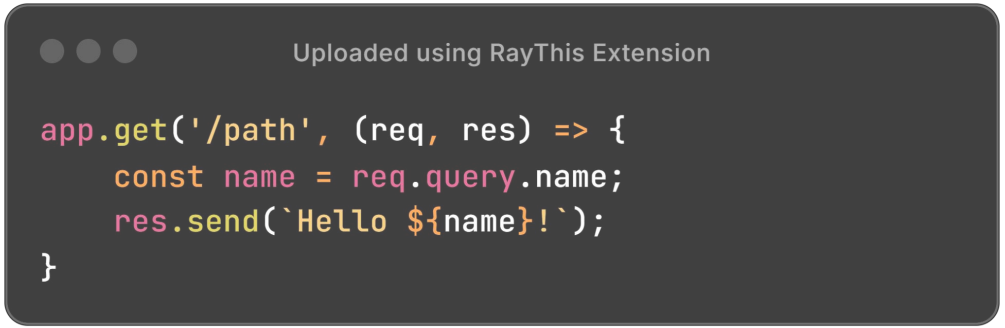
```
app.get('/url-params/:name', (req, res) => {
    const name = req.params.name;
    res.send(`Hello ${name}!`);
}
```

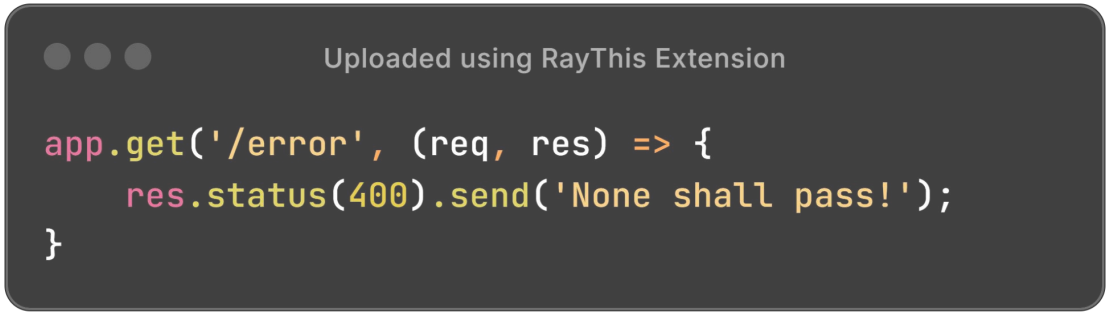
Récupérer les url-params

- http://localhost:3000/path?name=test

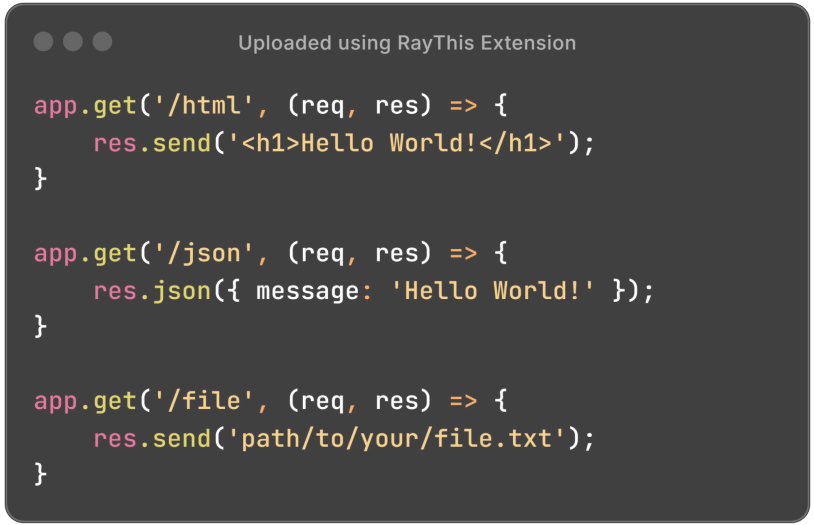


Code de retour

- http://localhost:3000/error



Les types de réponses



Exercices

Structurer en packages

app.js

```
const express = require("express")
const app = express()
const productRouter = require("./router/productRouter")

app.use("/product", productRouter)
app.listen(3000, () => {
    console.log("Server running on port 3000")
})
```

productRouter.js

```
const express = require("express")
const router = express.Router()
const controller = require("../controller/productController")

router.get("", controller.getAll)
router.get("/:id", controller.findById)
router.post("", controller.store)
router.put("/:id", controller.update)
router.delete("/:id", controller.destroy)

module.exports = router
```

productController.js

```
const controller = {
    getAll: (req, res) => {
        res.send("Get all resources")
    },
    findById: (req, res) => {
        res.send("Get resource by id")
    },
    store: (req, res) => {
        res.send("Create new resource")
    },
    update: (req, res) => {
        res.send("Update resource")
    },
    destroy: (req, res) => {
        res.send("Delete resource")
    }
}

module.exports = controller
```

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```
// app.js
const express = require("express")
const app = express()
app.listen(3000, () => {
    console.log("Server running on port 3000")
})

// router.js
const express = require("express")
const router = express.Router()

router.get("", controller.getAll)
router.get("/:id", controller.findById)
router.post("", controller.store)
router.put("/:id", controller.update)
router.delete("/:id", controller.destroy)

// controller.js
const controller = {
    getAll: (req, res) => {
        res.send("Get all resources")
    },
    findById: (req, res) => {
        res.send("Get resource by id")
    },
    store: (req, res) => {
        res.send("Create new resource")
    },
    update: (req, res) => {
        res.send("Update resource")
    },
    destroy: (req, res) => {
        res.send("Delete resource")
    }
}
```

Notion de middleware

- Gérer les requêtes de manière modulaire.
- Ajout de fonctionnalités (gestion d’erreurs par exemple)


```
const productRequest = (req, res, next) => {
    if(req.body.name != undefined && req.body.price != undefined) {
        return next();
    } else {
        res.status(403).send("Price or name is missing");
    }
}
router.post("/store", productRequest,controller.store);
```

Exercices

Chapitre 2
Gestion des données
Partie 1

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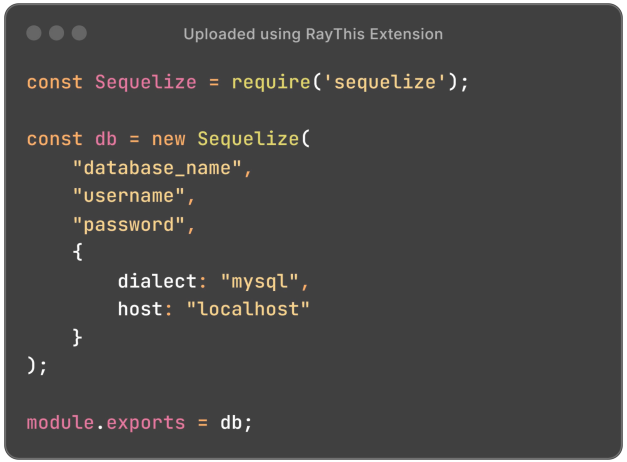
CRUD en SQL

Configuration avec Sequelize

- Object-Relational Mapping (ORM)
- Facilite les interactions avec les BDD relationnelles
- On travaille avec des objets JS au lieu d'effectuer des requêtes SQL



Définir un modèle

- La structure que l’on retrouvera en base de données

Faire des requêtes

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```
const express = require('express');
const router = express.Router();
const productController = require('../controllers/productController');

router.get('/:id', productController.getProductById);
router.get('/', productController.getAllProducts);
router.post('/', productController.createProduct);
router.put('/:id', productController.updateProduct);
router.delete('/:id', productController.deleteProduct);

module.exports = router;
```

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```
const { Product } = require('../models'); // Assure-toi d'avoir importé ton modèle Sequelize correctement

const getProductById = async (req, res) => {
    try {
        const product = await Product.findOne({ where: { id: req.params.id } });
        if (!product) { return res.status(404).json({ message: 'No product found with that id' }); }
        res.json(product);
    } catch (err) { res.status(500).json({ message: 'Error retrieving product', error: err });}
};

const getAllProducts = async (req, res) => {
    try {
        const products = await Product.findAll();
        res.json(products);
    } catch (err) { res.status(500).json({ message: 'Error retrieving products', error: err });}
};

const createProduct = async (req, res) => {
    try {
        const product = await Product.create(req.body);
        res.json(product);
    } catch (err) { res.status(500).json({ message: 'Error creating product', error: err }); }
};

const updateProduct = async (req, res) => {
    try {
        const [updatedRows] = await Product.update(req.body, { where: { id: req.params.id } });
        if (updatedRows === 0) { return res.status(404).json({ message: 'No product found with that id to update' }); }
        const updatedProduct = await Product.findOne({ where: { id: req.params.id } });
        res.json(updatedProduct);
    } catch (err) { res.status(500).json({ message: 'Error updating product', error: err });
}
};

const deleteProduct = async (req, res) => {
    try {
        const deletedRows = await Product.destroy({ where: { id: req.params.id } });
        if (deletedRows === 0) {  return res.status(404).json({ message: 'No product found with that id to delete' }); }
        res.json({ message: 'Product deleted successfully' });
    } catch (err) { res.status(500).json({ message: 'Error deleting product', error: err }); }
};

module.exports = { getProductById, getAllProducts, createProduct, updateProduct, deleteProduct };
```

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Exercices

TP 1 : Validation des acquis