

Mortgage Calculator Assessment

This project consists of a front-end application built with React and TypeScript and a back-end API built with Express. This README provides instructions on how to set up and run both parts of the project.

Prerequisites

Before you begin, ensure you have the following software installed on your machine:

- [Node.js](#) (includes npm)

Setting Up the Back-End

Navigate to the back-end directory:

bash

```
cd path/to/your/backend
```

Install the required dependencies:

bash

```
npm install
```

Start the back-end server:

bash

```
npm run dev
```

The server should start and listen on port 3001 by default. You can change the port by setting the `PORT` environment variable.

Test the back-end server:

bash

```
npm test
```

The server should run all the automated unit tests.

Setting Up the Front-End

Navigate to the front-end directory:

bash

```
cd path/to/your/frontend
```

Install the required dependencies:

bash

```
npm install
```

Start the front-end development server:

bash

```
npm start
```

The front-end server should start and be available at <http://localhost:3000> by default.

Endpoints

POST /calculate

Request Body:

json

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```
{
  "propertyPrice": 300000,
  "downPayment": 40000,
  "annualInterestRate": 3.5,
  "amortizationPeriod": 25,
  "paymentSchedule": "monthly"
}
```

Response:

json

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```
{
  "payment": 1360.5
}
```

Error Response:

json

Copy code

```
{
  "error": "Down payment must be at least 5% of the property price"
}
```