

# Expense Tracker Backend API Documentation

**Base URL:** <http://localhost:4000/api/>

**Authentication:** FireBase Authentication – Email/Password

**Tech Stack:** Node.js, Express.js, MongoDB (Mongoose), FireBase Authentication

## 1. User Authentication

### 1.1 Register User

- **Endpoint:** /register
- **Method:** POST
- **Description:** Register a new user using Firebase Authentication
- **Authentication:** Not required
- **Request Body:**

```
{  
  "email": "test@gmail.com",  
  "password": "test123"  
}
```

#### Response Example:

```
{  
  "message": "User registered successfully",  
  "uid": "VPUK8RcQxEgaQD1qMkjGeDzT3T63"  
}
```

Status Code: 200 (OK)

#### -Error Responses:

##### Missing Fields

```
{  
  "email": "test@gmail.com",  
  "password": ""  
}
```

```
}
```

**Response:**

```
{  
  "message": "Email and password are required"  
}
```

Status Code: 400 (Required fields missing)

**Already Registered User:**

**Request:**

```
{  
  "email": "test@gmail.com",  
  "password": "test123"  
}
```

**Response:**

```
{  
  "message": "User already registered"  
}
```

Status Code: 400 (already registered)

## 1.2 Login User

- **Endpoint:** /login
- **Method:** POST
- **Description:** Login user and return Firebase token
- **Authentication:** Not required
- **Request Body:**

```
{  
  "email": "test@gmail.com",  
  "password": "test123"  
}
```

**Response:**

```
{  
  "token":  
"eyJhbGciOiJSUzI1NiIsImtpZCI6IjlkMjEzMjEzMGZlZjAyNTg3ZmQ0ODYxODg2OTgyMjc3NGVmbnNzZWhtMTExNjUiLCJ0eXAiOiJKV1QiLCJpc3MiOiJodHRwczovL3NlY3VyZXRVa2VuLmdvb2dsZS5jb20vZXhwZW5zZXRYWYNrZXItNDRIOTciLCJhdWQiOiJleHBlbmNldHJhY2tldCI00NGI5NyIsImF1dGhfdGltdSI6MTc2MDk3NDA2MywidXNlcl9pZCI6IlZQVUs4UmNRReEVnYVFE MXFNazphZUR6VDNUNjMiLCJzdWIiOiJWUFVLOFJjUXhfZ2FRRDFFxTWtqR2VEelQzVDYyZiwiiaWF0IjojXzYwOTc0MDYzLCJleHAiOjE3NjA5Nzc2NjMsImVtYWlsIjojdGVzdEBnbW FpbC5jb20iLCJlbWFpbF92ZXJpZmllZCI6ZmFsc2UsImZpcmVi YXNlIjp7ImklZW50aXRpZXMiOnsiZW1haWwiOlsidGVzdEB nbWFpbC5jb20iXX0sInNpZ25faW5fcHJvdmlkZXIiOiJwYXNz d29yZCJ9fQ.Mp1P_H7DpBLEbxV_akLCFkdTIAB0pepU5P7V kHjheVDc5kEebj6dG5_MQKrkSONisS27ad-mmKzStiLYz08ukofaWp0bTtb7YwEi_zMPflxZuOF86WAjdKiLJ 2bbrKJUHHALrbsE25hmeATFiqKRx8PjhSlqLV2PRjQIK-o0GZo3mpX4II2VxuWyY9x_- pXYvCEtwEXaMZmUZDSqdBlCDom_SlDXpYsbvyCRLPg1Eq 0nUk7Qpj_BVvSDm0tYSZ_m5oeQ0gSMvbNbKa6owJx3eH-Ua5zb-5iUEJuL0YOXszfbJCI-45rM1HKVQYdtzlriwpByf0nTcMJ3cm5GveBEGQ",  
  "message": "Login successful"  
}
```

Status Code: 200 (OK)

## Error Responses

## Missing Fields

### Request Body:

```
{
  "email": "test@gmail.com",
  "password": ""
}
```

**Response:**

```
{  
  "message": "Email and password are required"  
}
```

Status Code: 400 (Required field missing)

**Incorrect Credentials****Request Body:**

```
{  
  "email": "test@gmail.com",  
  "password": "test"  
}
```

**Response:**

```
{  
  "message": "INVALID_LOGIN_CREDENTIALS"  
}
```

Status Code: 401 (Unauthorized -Incorrect login credentials)

### 1.3 Logout

- **Endpoint:** /logout
- **Method:** POST
- **Description:** Logout the user
- **Authentication:** Required
- **Request Body:** None
- **Response:**

```
{  
  "message": "Logout successfully"  
}
```

Status Code: 200 (OK)

**Error Responses****Unauthorized: Missing Token****Response:**

```
{  
  "message": "No token provided"  
}
```

Status Code: 401 (Unauthorized- Missing token)

### **Invalid Token**

#### **Response:**

```
{  
  "message": "Invalid token"  
}
```

Status Code: 401 (Unauthorized- Invalid Token)

## **2. Expense Management Routes**

### **2.1 Add of Expense**

- **Endpoint:** /expenses
- **Method:** POST
- **Description:** Add a new expense to the user's list
- **Authentication:** Required
- **Request Body:**

```
{  
  "title": "Lunch",  
  "amount": 250,  
  "category": "Food",  
  "date": "2025-10-12"  
}
```

#### **Response:**

```
{  
  "message": "Expense added successfully",  
  "id": "68f65b7e8583de88c184a6c2"
```

```
}
```

Status Code: 200 (OK)

### **Error Response:**

#### **Missing Token**

#### **Request Body:**

```
{  
  "title": "Lunch",  
  "amount": 250,  
  "category": "Food",  
  "date": "2025-10-12"  
}
```

#### **Response:**

```
{  
  "message": "No token provided"  
}
```

Status Code: 401 (Unauthorized- No token provided)

### **Missing Field:**

#### **Request Body:**

```
{  
  "title": "Lunch",  
  "amount": 250,  
  "date": "2025-10-12"  
}
```

#### **Response Body:**

```
"errors": [  
  {
```

```
    "message": "Category is required"
  }
]
}
```

Status Code: 401 (Required field Missing)

## 2.2 Update in Expense by particular user

- **Endpoint:** /expenses/:id
- **Method:** PUT
- **Description:** Update an expense
- **Authentication:** Required
- **Request Body:**

```
{
  "title": "Lunch",
  "amount": 250,
  "category": "Food",
  "date": "2025-10-10"
}
```

Here the amount and date are changed

**Response:**

```
{
  "message": "Expense updated successfully"
}
```

Status Code: 200 (OK)

### Error Responses

**Missing token**

**Request Body:**

```
{  
  "title": "Lunch",  
  "amount": 250,  
  "category": "Food",  
  "date": "2025-10-10"  
}
```

**Response:**

```
{  
  "message": "No token provided"  
}
```

Status Code: 401 (Unauthorized – No token provided)

**Invalid token**

**Request Body:**

```
{  
  "title": "Lunch",  
  "amount": 250,  
  "category": "Food",  
  "date": "2025-10-10"  
}
```

**Response:**

```
{  
  "message": "Invalid token"  
}
```

Status Code: 401 (Unauthorized – Invalid token)

**Missing Field**

**Request Body:**



```
{
  "title": "Lunch",
  "amount": 500,
  "category": "Food"
}
```

**Response:**

```
{
  "errors": [
    {
      "message": "Date is required and it must be valid"
    }
  ]
}
```

Status Code: 400 (Required field missing)

**Invalid ID**

**Request Body:** None

**Response:**

```
{
  "message": "Internal server error"
}
```

Status Code: 500 (Internal server error)

## 2.3 Delete Expense

- **Endpoint:** /expenses/:id
- **Method:** DELETE
- **Description:** Delete an expense associated with userID
- **Authentication:** Required
- **Request Body:** None
- **Response:**

```
{
  "message": "Expense deleted successfully"
}
```

Status Code: 200 (OK)

## Error Responses

### Deleting missing expenses or already deleted expense

**Request Body:** None

**Response:**

```
{
  "message": "Expense not found"
}
```

Status Code: 400 (Expense not found)

### Invalid ID

**Request Body:** None

**Response:**

```
{
  "message": "Expense not found"
}
```

Status Code: 400 (Expense not found)

## 2.4 Expense by ID

- **Endpoint:** /expenses/:id
- **Method:** GET
- **Description:** Fetch a single expense by ID
- **Authentication:** Required
- **Request Body:** None (Since GET method)
- **Response:**

```
{
  "id": "68f663c48583de88c184a6c7",
  "title": "Lunch",
}
```

```
"amount": 250,  
"category": "Food",  
"date": "2025-10-12T00:00:00.000Z"  
}
```

Status Code: 200 (OK)

## **Error Response**

### **Missing token**

**Request Body:** None

**Response:**

```
{  
  "message": "No token provided"  
}
```

Status Code: 401 (Unauthorized – missing token)

### **Invalid token**

**Request Body:** None

**Response:**

```
{  
  "message": "Invalid token"  
}
```

Status Code: 401 (Unauthorized – invalid token)

### **Invalid ID**

**Request Body:** None

**Response:**

```
{  
  "message": "Internal server error"  
}
```

Status Code: 500 (Internal server error)

## 2.5 Get Expense

- **Endpoint:** /expenses
- **Method:** GET
- **Description:** Fetch all expenses for logged-in users
- **Authentication:** Required
- **Request Body:** None
- **Response:**

```
[
  {
    "id": "68f663c48583de88c184a6c7",
    "title": "Lunch",
    "amount": 250,
    "category": "Food",
    "date": "2025-10-12T00:00:00.000Z"
  },
  {
    "id": "68f6690b2af870673106c44d",
    "title": "Dinnerh",
    "amount": 550,
    "category": "Food",
    "date": "2025-10-20T00:00:00.000Z"
  }
]
```

Status Code: 200 (OK)

## Error Response

### Missing token

#### Response:

```
{
  "message": "No token provided"
}
```

Status Code: 401 (Unauthorized – No token provided)

### Invalid Token

### Response:

```
{
  "message": "Invalid token"
}
```

Status Code: 401 (Unauthorized – Invalid token)

### For No Expense

### Response:

```
{
  "message": "Expense not found"
}
```

Status Code: 400 (Expense not found)

## 3. Report Routes

### 3.1 Monthly Report

- **Endpoint:** /reports/monthly
- **Method:** POST
- **Description:** Get total and category-wise expense summary for a month
- **Authentication:** Required
- **Request Body:**  
Query Params (month=MM&&year=YYYY)  
<http://localhost:4000/api/reports/monthly/?month=10&&year=2025>

### Response:

```
{
  "total": 1550,
  "categories": {
    "Food": 900,
    "Snacks": 450,
    "Beverages": 200
  }
}
```

Status Code: 200 (OK)

### **For Empty Expense**

#### **Response:**

```
{  
  "message": "No expenses found for this month",  
  "total": 0,  
  "categories": {}  
}
```

Status Code: 200 (OK)

### **Error Response:**

#### **Invalid token**

#### **Response:**

```
{  
  "message": "Invalid token"  
}
```

Status Code: 401 (Unauthorized – Invalid token)

#### **Missing Token**

```
{  
  "message": "No token provided"  
}
```

Status Code: 401 (Unauthorized – No token provided)

### **Missing Year and Month**

#### **Response:**

```
{  
  "message": "Year and month are required"  
}
```

Status Code: 400 (Required field missing)

## **3.2 Category Report**

- **Endpoint:** /reports/category
- **Method:** GET
- **Description:** Get all expenses filtered by category
- **Authentication:** Required
- **Request Body:** Query Params (category=Food)
- **Response:**

```
[
  {
    "_id": "68f66f671d19ff298e40ae61",
    "title": "Dinnerh",
    "amount": 550,
    "date": "2025-10-20T00:00:00.000Z"
  },
  {
    "_id": "68f66fa51d19ff298e40ae63",
    "title": "Lunch",
    "amount": 350,
    "date": "2025-10-12T00:00:00.000Z"
  }
]
```

Status Code: 200 (OK)

### **No Expense in a Category**

#### **Response:**

```
{
  "message": "No expenses found for this category",
  "data": {}
}
```

Status Code: 200 (OK)

#### **Error Response:**

##### **Invalid token**

#### **Response:**

```
{
  "message": "Invalid token"
}
```

Status Code: 401 (Unauthorized – Invalid token)

##### **Missing token**

#### **Response:**

```
{
  "message": "No token provided"
}
```

Status Code: 401 (Unauthorized – No token provided)

##### **Missing Query Param**

**Response:**

```
{  
  "message": "category query param is required"  
}
```

Status Code: 400 (Required field missing)