Portfolio Assignment: Final Project

CS 493: Cloud Application Development

Spring 2022

Oregon State University

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GCP URL:

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Change log

Version	Change	Date
1.0	Initial version.	June 6, 2022

Data Model

The app stores Users, Projects, Clients, Team_Members entities.

Users

Property	Data Type	Notes
id	Integer	The id of the boat. Datastore automatically generates it. Don't add it yourself as a property of the entity.
email	String	email address is obtained automatically from the JWT.
name	String	Name is obtained from the valid JWT provided by the logged-in User.
admin	Boolean	If the user has admin access, the value is True. Otherwise, the value will be False. • **Admin access is required to edit and delete non-user entities Client and Team_Members.** • Admin cannot edit/delete a specific users Project entity. Project's can only be deleted by the Project owner. • For Client or Team_Member entity, only a user with "Admin" as "True" will be able to edit/delete these Clients and Team_Members, which may result in the Project entity indirectly being edited. **Note: Only 1 user can have admin access at a time** **Admin Assignment Example:** 1. If user 2 has admin = True in DataStore, a DELETE request must be made with user 2's valid JWT to /admin in order to set admin = False. 2. After user 2's admin access is "deleted", user 1 or any other registered user can send a POST request to /admin to set themselves as admin.
sub	String	Automatically generated value from validated JWT

Notes:

• User must be authenticated and registered via log-in portal on have a valid JWT to create a user profile via /users POST request.

Projects

Property	Data Type	Notes
id	Integer	The id of the boat. Datastore automatically generates it. Don't add it yourself as a property of the entity.
name	String	Name of the boat. • Minimum of 3 to maximum of 30 characters.

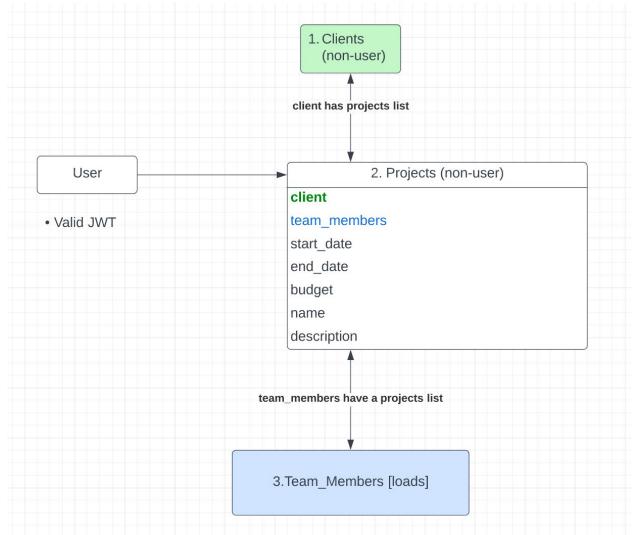|		
		• Must be a combination of alphanumeric characters. • Cannot have leading or trailing spaces.
budget	Integer	Dollar amount of the project cost. • Minimum of 1 to maximum of 10 digits. • budget values must be greater than or equal to 1.
description	String	Name of the boat. • Minimum of 3 to maximum of 50 characters. • Must be a combination of alphanumeric characters • Cannot have leading or trailing spaces.

start_date	String	Starting date of the project.
		• Must be in the format "yyyy-mm-dd"
		    ○ yyyy is the 4 digit year
		    ○ mm is the numeric 2 digit month e.g. 03 for March
		    ○ dd is the numeric 2 digit day e.g. 05
		    ○ For example, "2022-03-05"
		        ▪ Year is 2022
		        ▪ Month is 03
		        ▪ Day is 05
		• Must be a valid date. E.g. 2022-01-67 is not a valid date.
		Note: the start date must be before the end_date and vice versa.

end_date	String	Ending date of the project.
		• Must be in the format "yyyy-mm-dd"
		    ○ yyyy is the 4 digit year
		    ○ mm is the numeric 2 digit month e.g. 03 for March
		    ○ dd is the numeric 2 digit day e.g. 05
		    ○ For example, "2022-05-10"
		        ▪ Year is 2022
		        ▪ Month is 05
		        ▪ Day is 10
		• Must be a valid date. E.g. 2022-01-67 is not a valid date.
		Note: the start date must be before the end_date and vice versa.

client	Dictionary (key, value pairs)	Client ID of the client entity that is assigned to this project • Initial value will be None • Client ID must match the client id in DataStore • A project can have only 1 client assigned at a time. An existing client must first be deleted in order to assign a different client to the project.
team_members	Array of key, value pairs	**team_members = [ ]** Contains an array of team_member entities with their entity ID's. • For PUT and PATCH requests, the team_member's "id" attribute value must exist in DataStore.
project_owner	String	Project owner's unique sub ID obtained from a valid JWT
self	String	URL/Address of the resource's location

Team_members

Property	Data Type	Notes
id	Integer	The id of the boat. Datastore automatically generates it. Don't add it yourself as a property of the entity.
name	String	• Name of the team member. · Minimum of 3 to maximum of 30 characters. · Must be a combination of alphanumeric characters. · Cannot have leading or trailing spaces.

join_date	String	• Join date of the member.
		• Must be in the format "yyyy-mm-dd"
		o yyyy is the 4 digit year
		o mm is the numeric 2 digit month e.g. 03 for March
		o dd is the numeric 2 digit day e.g. 05
		o For example, "2022-05-10"
		  ▪ Year is 2022
		  ▪ Month is 05
		  ▪ Day is 10
		• Must be a valid date. E.g. 2022-01-67 is not a valid date.

specialty	String	Name of the team members specialized skillset. • Minimum of 3 to maximum of 20 characters. • Must be a combination of alphanumeric characters. • Cannot have leading or trailing spaces.
project	Dictionary (key, value pairs)	Contains the "id" and "name" attribute of the assigned Projects entity. • For PUT and PATCH requests, the projects "id" attribute value must exist in DataStore.
self	String	URL/Address of the resource's location

Clients

Property	Data Type	Notes
id	Integer	The id of the Client entity. Datastore automatically generates it. Don't add it yourself as a property of the entity.
name	String	Name of the Client. • Minimum of 3 to maximum of 30 characters. • Must be a combination of alphanumeric characters. • Cannot have leading or trailing spaces.
Industry	String	Must be one of the following: • Information Technology • Health Care • Financials • Consumer Discretionary • Communication Services • Industrials • Consumer Staples • Energy

		• Utilities • Real Estate • Materials **Spelling and case must be exactly as shown above.**
description	String	Name of the boat. • Minimum of 3 to maximum of 50 characters. • Must be a combination of alphanumeric characters • Cannot have leading or trailing spaces.

join_date	String	Join date of the project.
		• Must be in the format "yyyy-mm-dd"
		    o yyyy is the 4 digit year
		    o mm is the numeric 2 digit month e.g. 03 for March
		    o dd is the numeric 2 digit day e.g. 05
		    o For example, "2022-03-05"
		        ▪ Year is 2022
		        ▪ Month is 03
		        ▪ Day is 05
		• Must be a valid date. E.g. 2022-01-67 is not a valid date.
		Note: the start date must be before the end_date and vice versa.

project	Dictionary (key, value pairs)	Contains the "id" and "name" attribute of the assigned Projects entity. For PUT and PATCH requests, the projects "id" attribute value must exist in DataStore.
self	String	URL/Address of the resource's location

Data Model / Entity Relationship Overview

Notes on Entity PATCH, PUT Requirements and Admin Access:

Clients and Team_Members

- Only Users that are registered with the attribute "admin" as "True" can PUT, PATCH, DELETE Client and Team_Member entities on the following routes:
  - /clients/:client_id [PUT, PATCH, DELETE]
  - /team_members/:team_member_id [PUT, PATCH, DELETE]
- **Any User entity can become an admin via POST request on the /admin route.**

Examples of valid data

- A valid Project **name**, Client **name**, Team_Member **name**, Project **description**, and Team_Member **specialty** cannot be just digits such as "1234" but can be "J1234". A name must contain a combination of digits and letters. A valid Project, Client, Team_Member entity **name** cannot be "hello123!" because "!" is a non-alphanumeric character.

- A valid Project **name**, Client **name**, Team_Member **name**, Project **description**, and Team_Member **specialty** cannot have a space as the first or last character such as " hello" and "hello " but can be "hello".
- A valid Project **start_date, end_date** or Team_Member, Client **join_date** must be "yyyy-mm-dd" such as "2022-05-04" and not "2022-5-4" and not "2022-05-4"
- A valid boat **budget** cannot be "23.5" a because it is not an integer. If we call the int function via int("23.5") in Python, it will throw an error.
- A valid boat **budget** cannot be "0" because it is not greater than or equal to 1.

Incorrect Endpoints / URL Addresses

Accessing an incorrect URL that does not exist will result in a return code of **404 Not Found**.

Failure

```
Request to an unsupported endpoint such as /projects/helloWorld

Status: 404 Not Found
{
    "error": "404 Not Found: The requested URL was not found on the server. If
you entered the URL manually please check your spelling and try again."
}↵
```

Unsupported Methods by Endpoints

Accessing an endpoint with an unsupported request type will result in a return code of **405 Method Not Allowed**. The MIME type for the response body will be text/html.

Endpoint	Response Code	Notes
/projects	405 Method Not Allowed	Failure code will be returned for PUT, PATCH, DELETE methods.
/users	405 Method Not Allowed	Failure code will be returned for POST, PUT, PATCH, DELETE methods. • Users are automatically saved in DataStore when the User logs into the website
/team_members	405 Method Not Allowed	Failure code will be returned for PUT, PATCH, DELETE methods.
/clients	405 Method Not Allowed	Failure code will be returned for PUT, PATCH, DELETE methods.
/ projects /:project_id	405 Method Not Allowed	Failure code will be returned for a POST method.

/ team_members /:team_member_id	405 Method Not Allowed	Failure code will be returned for a POST method.
/ clients/:client_id	405 Method Not Allowed	Failure code will be returned for a POST method.
/admin	405 Method Not Allowed	Failure code will be returned for PUT, PATCH methods.

ACCOUNT CREATION / LOGIN A USER

Home/Index URL: https://portfolio-kimd3.uc.r.appspot.com/

Registration/Login URL: https://portfolio-kimd3.uc.r.appspot.com/

- Registration/Login Route: "/" same as index.
- User is stored in DataStore when a User registers through the login/register portal via Auth0 in the provided URL above.

Welcome! This is Portfolio Assignment: Final Project

Created by: Daniel Kim

Welcome: homer simpson!

Logout

jwt1 or jwt2

JWT id_token:

eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCIsImtpZCI6ImRWOGdMX0lveFNwemtsLU1lY2E4dSJ9.ey
JuaWNrbmFtZSI6InRlc3QiLCJuYW1lIjoiaG9tZXIgc2ltcHNvbiIsInBpY3R1cmUiOiJodHRwczovL3M
uZ3JhdmF0YXIuY29tL2F2YXRhci9iNjQyYjQyMTdiMzRiMWU4ZDNiZDkxNWZjNjVjNDQ1Mj9zPT
Q4MCZyPXBnJmQ9aHR0cHMlM0ElMkYlMkZjZG4uYXV0aDAuY29tJTJGYXZhdGFycyUyRnRlLln
BuZyIsInVwZGF0ZWRfYXQiOiIyMDIyLTA2LTA2VDA2OjQ2OjU3Ljc0NFoiLCJlbWFpbCI6InRlc3RA
dGVzdC5jb20iLCJlbWFpbF92ZXJpZmllZCI6dHJ1ZSwiaXNzIjoiaHR0cHM6Ly9odzca2ltZDMudX
MuYXV0aDAuY29tLyIsInN1YiI6ImF1dGgwfDYyNzk1ODRjNTEyZjM5MDA2OTdkNWVlZCIsImF1Z
CI6InB4NUFmmUHR0VEQ1V3E5eEhvZWVVMDJTN0ZWOGJ5QnFFIiwiaWF0IjoxNjU0NDk4MDE4
LCJleHAiOjE2NTQ1MzQwMTgsIm5vbmNlIjoicW9zSnhRU0R0ajRsb1pCSHZ0YTEifQ.LWrqg42lP
qElluSqEqMhO9KDnpJ6U3KkwoTa_SFRgvjWB75RvpnR4DJIMyFyXEHPZKIJy0Wls7rLabxATKh
Xqh1XlnIHdtke0DxkENpLyPRxiLatucj4_kOeslCcllqrrgRps5TlgGbS9uSloL6ilDAXOUygpYeAG_q8
6jAfnNmhXYKaBSImOm_vZNPqT23Pqd1dreoZkkuxa-
mqNXhlz2lZdJFey4_y3PC8QJD85zoWNAOZkc-
xQ34VWawMfqKN5DfSvffXu4WEBLLSNgy7vI8fCJkCcgs04fUPlJwnHEC1eBjZO0SFrEIYBqq0Wlh
J6FGOUZkxbhEoxeEjjV_zQ

user_id1
or
user_id2

Unique ID (SUB VALUE):
auth0|6279584c512f3900697d5eed

DataStore ID:
5696630124707840

Logging in via Auth0 Portal

Registering/logging in via Auth0 portal is required so that the user will be created/saved in Data Store.

Welcome! This is Portfolio Assignment: Final Project

Created by: Daniel Kim

Welcome Guest

Please click on "Login" to log into your account.

1 Login

2

Welcome

Log in to hw7-kimd3 to continue to portfolio-app.

Email address

Password 👁

Forgot password?

Continue

Don't have an account? **Sign up**

OR

G Continue with Google

Welcome! This is Portfolio Assignment: Final Project

3

Created by: Daniel Kim

Welcome: homer simpson!

Logout

JWT id_token:

eyJhbGciOiJSUzI1NiIsInR5cCI6IkpXVCIsImtpZCI6ImRWOGdMX0IveFNwemtsLU1lY2E4dSJ9.eyJuaWNrbmFtZSI6InRlc3QiLCJuY
W1lIjoiaG9tZXIgc2ltcHNvbiIsInBpY3R1cmUiOiJodHRwczovL3MuZ3JhdmF0YXIuY29tL2F2YXRhci9iNjQyYjQyMTdiMzRiMWU4ZD
NiZDkxNWZjNjVjNDQ1Mj9zPTQ4MCZyPXBnJmQ9aHR0cHMIM0ElMkYlMkZjZG4uYXV0aDAuY29tJTJGYXZhdGFycyUyRnRILnBu
ZyIsInVwZGF0ZWRfYXQiOiIyMDIyLTA2LTAzVDA0OjIzOjE3LjY3MVoiLCJlbWFpbCI6InRlc3RAdGVzdC5jb20iLCJlbWFpbF92ZXJp
ZmllZCI6dHJ1ZSwiaXNzIjoiaHR0cHM6Ly9odzcta2ltZDMudXMuYXV0aDAuY29tLyIsInN1YiI6ImF1dGgwfDYyNzk1ODRjNTEyZjM5
MDA2OTdkNWVlZCIsImF1ZCI6InB4NUFmUHR0VEQ1V3E5eEhvZWVUMDJTN0ZWOGJ5QnFKIiwiaWF0IjoxNjU0MjMwMjAxLCJl
eHAiOjE2NTQyNjYyMDEsIm5vbmNlIjoiT1dJejZ4TVZHeTFQdjhOa1pUR00ifQ.kirwvG5vkGpKVY2SOEbmfWaavP1gJh6IYgo3d_fU
FniHEq1uXYACNw91pa6AGiRDkdy6vD97JDikGSZUK-
onM8m0ZG34MOQfMR2NyLJGcVbD5ElrerjSg9T2t05b6Sl1PI7mi5psRG2ATDw9oCdzuFQeqtgdQ7HE_DR48cmvS_hR5DYg_w7v9
B5oowYQt-
dk5Bhsbp4qUthDIKQYz8K93TAU8857QUUQx8jYhn3CRbq7wYlAZvmKU0e5o31Sql5iFlrijq7T1JbyEl5lm8SglteTSGvxWyGNJUThH
VXL_PhPNSKgOtHmfvcdQl6BhKN58WqYYboAq7ozNbWUVgstYw

Unique ID (SUB VALUE):
auth0|6279584c512f3900697d5eed

DataStore ID:
5696630124707840

USERS ENTITY

Get All Registered Users

Allows you to get a response of registered users

GET /users

Request

Path Parameters

None

Request Headers

Accept headers must be "application/json".

Request Header	MIME Type	Required?
Content-Type	application/ JSON	No
Accept	application/JSON	Yes

Authentication

- Not Required

Request Body

None

Request Header Example

```
Accept: application/JSON
```

Request Body Example

None

Response

Response Body Format

- MIME Type: application/JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	A list of registered users that have logged-in via Auth0 Log-in portal.
Failure	405 Method Not Allowed	Only GET requests are allowed for the URL /users . Allow header will have values of methods that are allowed. POST, PUT, PATCH, DELETE are not allowed supported in the URL /users.
Failure	406 Not Acceptable	The client requests "Accept" header is not application/JSON

Response Examples

- Datastore will automatically generate an ID and store it with the entity being created.

Success

Request Header with Accept: application/JSON

Status: 200 OK
```
{
    "users": [
        {
            "admin": false,
            "email": "nemo@finding.com",
            "id": 5668756323827712,
            "name": "Nemo",
            "sub": "auth0|627b466fa9bfde006fedaf90"
        },
        {
            "admin": false,
            "email": "test@test.com",
            "id": 5696630124707840,
            "name": "homer simpson",
            "sub": "auth0|6279584c512f3900697d5eed"
        }
    ]
}
```

Failure

Status: 405 Method Not Allowed

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2 Final//EN">
<title>405 Method Not Allowed</title>
<h1>Method Not Allowed</h1>
<p>The method is not allowed for the requested URL.</p>
```

Request Header with Accept: text/html

Status: 406 Not Acceptable

ADMIN ACCESS

1. Get current Admins

Allows you see the Users that have admin attribute set to True.

GET /admin

Request

Path Parameters

None

Request Headers

Accept headers must be "application/json".

Request Header	MIME Type	Required?
Content-Type	application/ JSON	No
Accept	application/JSON	Yes

Authentication

- Required: Bearer Token (Valid JWT necessary)

Request Body

None

Request Header Example

```
Accept: application/JSON
```

Request Body Example

None

Response

Response Body Format

- MIME Type: application/JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	If there are Users with the admin attribute set to True, the Users will be in the response body.
Failure	401 Unauthorized	Client (end-user) sent an invalid JWT or did not provide a JWT.
Failure	405 Method Not Allowed	Only GET, POST, DELETE methods are allowed for the URL /admin . Allow header will have values of methods that are allowed. PUT, PATCH are not allowed supported in the URL /admin.
Failure	406 Not Acceptable	The client requests "Accept" header is not application/JSON

Response Examples

Success

Request Header with Accept: application/JSON

Status: 200 OK

```json
{
    "admins": [
        {
            "name": "Nemo",
            "sub": "auth0|627b466fa9bfde006fedaf90",
            "admin": true,
            "email": "nemo@finding.com",
            "id": 5668756323827712
        },
        {

            "email": "test@test.com",
            "name": "homer simpson",
            "sub": "auth0|6279584c512f3900697d5eed",
            "admin": true,
            "id": 5696630124707840
        }
    ]
}
```

Failure

Invalid JWT, no JWT provided, or User is not registered via Auth0 log-in portal.
Status: 401 Unauthorized

```json
{
    "code": "no auth header",
    "description": "Authorization header is missing"
}
```

Request with unsupported method such as PUT, PATCH for endpoint

Status: 405 Method Not Allowed

```
Response Headers
Content-Type: text/html; charset=utf-8
Allow: OPTIONS, GET, DELETE, POST
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2 Final//EN">
<title>405 Method Not Allowed</title>
<h1>Method Not Allowed</h1>
<p>The method is not allowed for the requested URL.</p>
```

Request Header with Accept: text/html

Status: 406 Not Acceptable

2. Assign a User as Admin

Allows you to assign a registered User with admin access. The User must have registered/logged-in via Auth0 registration/log-in portal.

POST /admin

Request

Path Parameters

None

Request Headers

Accept headers must be "application/json".

Request Header	MIME Type	Required?
Content-Type	application/ JSON	No
Accept	application/JSON	Yes

Authentication

- Required: Bearer Token (Valid JWT necessary)

Request Body

None

Request Header Example

```
Accept: application/JSON
```

Request Body Example

None

Response

Response Body Format

- MIME Type: application/JSON

Response Statuses

Outcome	Status Code	Notes
Success	201 Created	User will be assigned admin access.
Failure	400 Bad Request	The current User is already admin.
Failure	401 Unauthorized	Client (end-user) sent an invalid JWT or did not provide a JWT.
Failure	405 Method Not Allowed	Only GET, POST, DELETE methods are allowed for the URL /admin . Allow header will have values of methods that are allowed. PUT, PATCH are not allowed supported in the URL /admin.
Failure	406 Not Acceptable	The client requests "Accept" header is not application/JSON

Response Examples

- Datastore will automatically generate an ID and store it with the entity being created.

Request Header with Accept: application/JSON

Status: 201 Created

```
{
    "sub": "auth0|6279584c512f3900697d5eed",
    "admin": true,
    "name": "homer simpson",
    "projects": [],
    "email": "test@test.com",
    "id": 5642368648740864
}
```

Failure

Current User is already assigned admin access.
Status: 400 Bad Request

```
{
    "Error": "User is already an admin."
}
```

Invalid JWT or no JWT provided.
Status: 401 Unauthorized

```
{
    "code": "no auth header",
    "description": "Authorization header is missing"
}
```

Request with unsupported method such as PUT, PATCH for endpoint

Status: 405 Method Not Allowed

```
Response Headers
Content-Type: text/html; charset=utf-8
Allow: OPTIONS, GET, DELETE, POST
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2 Final//EN">
<title>405 Method Not Allowed</title>
<h1>Method Not Allowed</h1>
<p>The method is not allowed for the requested URL.</p>
```

Request Header with Accept: text/html

Status: 406 Not Acceptable

3. Remove User from Admin

Allows you to revoke admin access from registered User that has admin access. The User must have registered/logged-in via Auth0 registration/log-in portal. The user who is sending the request must be the current "admin".

DELETE /admin

Request

Path Parameters

None

Request Headers

Accept headers must be "application/json".

Request Header	MIME Type	Required?
Content-Type	application/ JSON	No
Accept	application/JSON	No

Authentication

- Required: Bearer Token (Valid JWT necessary)

Request Body

None

Request Header Example

```
Accept: application/JSON
```

Request Body Example

None

Response

Response Body Format

- MIME Type: application/JSON

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	If User is currently admin and sends the request with the valid JWT, the User will be deleted from admin access.
Failure	401 Unauthorized	Client (end-user) sent an invalid JWT or did not provide a JWT.
Failure	403 Forbidden	User sending the request is not an admin.
Failure	405 Method Not Allowed	Only GET, POST, DELETE methods are allowed for the URL /admin . Allow header will have values of methods that are allowed. PUT, PATCH are not allowed supported in the URL /admin.

Response Examples

- Datastore will automatically generate an ID and store it with the entity being created.

> *Delete request successful*
>
> Status: 204 No Content

> *Invalid JWT or no JWT provided.*
> Status: 401 Unauthorized
>
> ```json
> {
>     "code": "no auth header",
>     "description": "Authorization header is missing"
> }
> ```

> *User sending the request is not an admin.*
> Status: 403 Forbidden
> ```json
> {
>     "Error": "User is not an admin."
> }
> ```

> *Request with unsupported method such as PUT, PATCH for endpoint*
>
> Status: 405 Method Not Allowed
>
> ```
> Response Headers
> Content-Type: text/html; charset=utf-8
> Allow: OPTIONS, GET, DELETE, POST
> ```
> ```html
> <!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2 Final//EN">
> <title>405 Method Not Allowed</title>
> <h1>Method Not Allowed</h1>
> <p>The method is not allowed for the requested URL.</p>
> ```

asdfasdf

PROJECTS ENTITY

1. Create a Project

Allows you to create a new Project.

POST /projects

Request

Path Parameters

None

Request Headers

Both Content-Type and Accept headers must be "application/json".

Request Header	MIME Type	Required?
Content-Type	application/ JSON	Yes
Accept	application/JSON	Yes

Authentication

- Required: Bearer Token (Valid JWT necessary)

Request Body

Required

MIME Types for Request Body:

- application/ JSON

Request Body Format

JSON

Request JSON Attributes

Name	Data Type	Description	Required?	Notes on valid data
name	String	The name of the project.	Yes	- Minimum of 3 to maximum of 30 alpha numeric characters. - Must be a combination of alphanumeric characters. - Cannot have leading or trailing spaces.
description	String	The description of the project	Yes	- Minimum of 3 to maximum of 50 alpha numeric characters. - Must be a combination of alphanumeric characters. - Cannot have leading or trailing spaces.
budget	Integer	Numerical budget	Yes	Minimum of 1 to maximum of 10 digits.

		allocated for the project		• Value must be greater than or equal to 1.

start_date	String	Start date of the project	Yes	Starting date of the project.
				• Must be in the format "yyyy-mm-dd"
				     o yyyy is the 4 digit year
				     o mm is the numeric 2 digit month e.g. 03 for March
				     o dd is the numeric 2 digit day e.g. 05
				     o For example, "2022-03-05"
				        ▪ Year is 2022
				        ▪ Month is 03
				        ▪ Day is 05
				• Must be a valid date. E.g. 2022-01-67 is not a valid date.
				Note: the start date must be before the end_date and vice versa.

end_date	String	End date of the project	Yes	Ending date of the project.
				• Must be in the format "yyyy-mm-dd"
				     o yyyy is the 4 digit year
				     o mm is the numeric 2 digit month e.g. 03 for March
				     o dd is the numeric 2 digit day e.g. 05
				     o For example, "2022-05-10"
				        ▪ Year is 2022
				        ▪ Month is 05
				        ▪ Day is 10
				• Must be a valid date. E.g. 2022-01-67 is not a valid date.
				Note: the start date must be before the end_date and vice versa.

Request Header Example

```
Content-Type: application/ JSON
Accept: application/JSON
```

Request Body Example

```
{
    "name": "Build a Racing King Boat",
    "budget": 10900500,
    "description": "We are building a next gen racing boat",
    "start_date": "2020-03-05",
    "end_date": "2022-04-07"


}
```

Response

Response Body Format

- MIME Type: application/JSON

Response Statuses

Outcome	Status Code	Notes
Success	201 Created	
Failure	400 Bad Request	If there is no request body, 400 status code will be returned. If the request is missing any of the 5 required attributes, the project is not created, and 400 status code must be returned. If the request body has invalid data in one of the project attributes, then a 400 status code will be returned. Causes of invalid data could be a result of not following the following rules: • Name must have a minimum of 3 to maximum of 30 alpha numeric characters. Must be a combination of alphanumeric characters. Cannot have leading or trailing spaces. • Description must have a minimum of 3 to maximum of 50 alpha numeric characters. Must be a combination of alphanumeric characters. Cannot have leading or trailing spaces. • Budget must be an integer with minimum of 1 to maximum of 10 digits. Value must be greater than or equal to 1. • Start_date and end_date must be in the format "yyyy-mm-dd". • **Request body with the attribute ID or any other additional attributes.**
Failure	401 Unauthorized	Client (end-user) sent an invalid JWT or did not provide a JWT.
Failure	406 Not Acceptable	The client requests "Accept" header is not application/JSON
Failure	415 Unsupported Media Type	The client requests "Content-Type" header is not application/JSON
Failure	405 Method Not Allowed	Only POST, GET method is allowed for the URL /projects. Allow header will have values of methods that are allowed. DELETE, PUT, PATCH are not allowed supported in the URL /projects.

Response Examples

- Datastore will automatically generate an ID and store it with the entity being created. Your app must send back this value in the response body as shown in the example.

Success

Request Header with Content-Type: application/JSON, Accept: application/JSON

Status: 201 Created

```
{
    "team_members": [],
    "name": "Build a Racing King Boat",
    "project_owner": "auth0|6279584c512f3900697d5eed",
    "end_date": "2022-04-07",
    "budget": 10900500,
    "client": null,
    "start_date": "2020-03-05",
    "description": "We are building a next gen racing boat",
    "id": 5738709764800512,
    "self": "https://127.0.0.1:8000/projects/5738709764800512"
}
```

Failure

Status: 400 Bad Request

```
{
    "Error": "The request object is missing at least one of the required
attributes"
}
```

Invalid JWT or no JWT provided.
Status: 401 Unauthorized

```
{
    "code": "no auth header",
    "description": "Authorization header is missing"
}
```

Request Header with Accept: text/html

Status: 406 Not Acceptable

Request Header with Content-Type: text/html

Status: 415 Unsupported Media Type

Request with unsupported method such as PUT, PATCH, DELETE for endpoint

Status: 405 Method Not Allowed

Response Headers

```
Content-Type: text/html; charset=utf-8
Allow: OPTIONS, GET, POST
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2 Final//EN">
<title>405 Method Not Allowed</title>
<h1>Method Not Allowed</h1>
<p>The method is not allowed for the requested URL.</p>
```

2. View All of User's Projects

Allows you to view a user's posted projects.

GET /projects

Request

Path Parameters

None

Request Headers

Accept headers must be "application/json".

Request Header	MIME Type	Required?
Content-Type	application/ JSON	No
Accept	application/JSON	Yes

Authentication

- Required: Bearer Token (Valid JWT necessary)

Request Body

None

Request Body Format

None

Request JSON Attributes

None

Request Header Example

```
Accept: application/JSON
```

Response

Response Body Format

- MIME Type: application/JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	401 Unauthorized	Client (end-user) sent an invalid JWT or did not provide a JWT.
Failure	406 Not Acceptable	The client requests "Accept" header is not application/JSON
Failure	405 Method Not Allowed	Only POST, GET methods is allowed for the URL /projects. Allow header will have values of methods that are allowed. DELETE, PUT, PATCH are not allowed supported in the URL /projects.

Response Examples

Success

Request Header with Accept: application/JSON

Status: 200 OK
{
    "next": "https://127.0.0.1:8000/projects?limit=0&offset=5",
    "projects": [
        {
            "budget": 12345,
            "client": null,
            "description": "The third next google cloud",
            "end_date": "2022-06-07",
            "id": 5644523313037312,
            "name": "Data Center 3",
            "project_owner": "auth0|6279584c512f3900697d5eed",
            "self": "https://127.0.0.1:8000/projects/5644523313037312",
            "start_date": "2020-07-05",
            "team_members": []
        },
        {

            "budget": 777,
            "client": null,
            "description": "The best project",
            "end_date": "2022-06-07",
            "id": 5655374346584064,
            "name": "User1 Project7",
            "project_owner": "auth0|6279584c512f3900697d5eed",
            "self": "https://127.0.0.1:8000/projects/5655374346584064",
            "start_date": "2020-07-05",
            "team_members": []
        },
        {
            "budget": 99999,
            "client": null,
            "description": "The fourth google cloud",
            "end_date": "2022-06-07",
            "id": 5700433016258560,
            "name": "Data Center 4",
            "project_owner": "auth0|6279584c512f3900697d5eed",
            "self": "https://127.0.0.1:8000/projects/5700433016258560",
            "start_date": "2020-07-05",
            "team_members": []
        },
        {

```json
        "budget": 1111,
        "client": {
            "id": 5657818854064128
        },
        "description": "We are building a next gen racing boat",
        "end_date": "2022-04-07",
        "id": 5707651547660288,
        "name": "Build a Racing King Boat",
        "project_owner": "auth0|6279584c512f3900697d5eed",
        "self": "https://127.0.0.1:8000/projects/5707651547660288",
        "start_date": "2020-03-05",
        "team_members": [
            {
                "id": 5671636300726272,
                "self":
"https://127.0.0.1:8000/team_members/5671636300726272"
            }
        ]
    },
    {
        "budget": 2999751,
        "client": null,
        "description": "The 2nd next google cloud",
        "end_date": "2022-06-07",
        "id": 5735810494103552,
        "name": "Data Center 2",
        "project_owner": "auth0|6279584c512f3900697d5eed",
        "self": "https://127.0.0.1:8000/projects/5735810494103552",
        "start_date": "2020-07-05",
        "team_members": []
    }
    ]
}
```

Failure

Invalid JWT or no JWT provided.
Status: 401 Unauthorized

```json
{
    "code": "no auth header",
    "description": "Authorization header is missing"
}
```

Request Header with Accept: text/html

Status: 406 Not Acceptable

Request with unsupported method such as PUT, PATCH, DELETE for endpoint

Status: 405 Method Not Allowed

```
Response Headers
Content-Type: text/html; charset=utf-8
Allow: OPTIONS, GET, POST
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2 Final//EN">
<title>405 Method Not Allowed</title>
<h1>Method Not Allowed</h1>
<p>The method is not allowed for the requested URL.</p>
```

3. View a specific Project for a User

Allows you to view a user's posted project.

GET /projects/:project_id

Request

Path Parameters

Name	Description
project_id	ID of the project

Request Headers

Both Content-Type and Accept headers must be "application/json".

Request Header	MIME Type	Required?
Content-Type	application/ JSON	No
Accept	application/JSON	Yes

Authentication

- Required: Bearer Token (Valid JWT necessary)

Request Body

None

Request Body Format

None

Request JSON Attributes

None

Request Header Example

```
Accept: application/JSON
```

Response

Response Body Format

- MIME Type: application/JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	401 Unauthorized	Client (end-user) sent an invalid JWT or did not provide a JWT.
Failure	403 Forbidden	User provided a valid project_id but is not the owner of that project (sub values are different).
Failure	404 Not Found	User provided an invalid project_id.
Failure	406 Not Acceptable	The client requests "Accept" header is not application/JSON
Failure	405 Method Not Allowed	Only GET, PUT, PATCH, DELETE methods is allowed for the URL /projects/:project_id. Allow header will have values of methods that are allowed. POST method is not allowed supported in the URL /projects/:project_id.

Response Examples

Success

Request Header with Accept: application/JSON
Status: 200 OK
```json
{
    "budget": 10900500,
    "client": null,
    "description": "We are building a next gen racing boat",
    "end_date": "2022-04-07",
    "id": 5738709764800512,
    "name": "Build a Racing King Boat",
    "project_owner": "auth0|6279584c512f3900697d5eed",
    "self": "https://127.0.0.1:8000/projects/5738709764800512",
    "start_date": "2020-03-05",
    "team_members": []
}
```

Failure

Invalid JWT or no JWT provided.
Status: 401 Unauthorized

```json
{
    "code": "no auth header",
    "description": "Authorization header is missing"
}
```

Valid project_id but not the owner of the project
Status: 403 Forbidden

```json
{
    "Error": "Invalid project_owner for this project_id"
}
```

Invalid project_id
Status: 403 Forbidden

```json
{
    "Error": "No project with this project_id exists"
}
```

Request Header with Accept: text/html

Status: 406 Not Acceptable

Request with unsupported method such as POST for endpoint

Status: 405 Method Not Allowed

```
Response Headers
Content-Type: text/html; charset=utf-8
Allow: OPTIONS, GET, PUT, PATCH, DELETE
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2 Final//EN">
<title>405 Method Not Allowed</title>
<h1>Method Not Allowed</h1>
<p>The method is not allowed for the requested URL.</p>
```

4. Edit a User's Project (All, PUT)

Allows you to edit a Project

PUT /projects/:project_id

Request

Path Parameters

Name	Description
project_id	ID of the project

Request Headers

Both Content-Type and Accept headers must be "application/json".

Request Header	MIME Type	Required?
Content-Type	application/ JSON	Yes
Accept	application/JSON	Yes

Authentication

- Required: Bearer Token (Valid JWT necessary)

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

Requires all seven attributes in the request body.

Name	Description	Required?
name	The name of the project.	Yes
budget	The budget of the project.	Yes
description	The description of the project	Yes
start_date	Starting date of the project	Yes
end_date	Ending date of the project	Yes
team_members	Array of key-value pairs of the team_member's "id" attribute and id value	Yes
client	Key-value pairs of the Clients's "id" attribute and id value	Yes

Request Header Example

```
Content-Type: application/JSON

Accept: application/JSON
```

Request Body Example

```
{
    "name": "Build a Speed Boat",
    "budget": 1111,
```

```
    "description": "Build the best boat put",
    "start_date": "2020-03-05",
    "end_date": "2022-04-07",
    "team_members": [
        {
            "id": 5664022732996608
        },
        {
            "id": 5671636300726272
        }
    ],
    "client": {
        "id": 5657818854064128
    }
}
```

Response

Response Body Format

Response body MIME Types

- JSON (application/JSON)

Response Statuses

Outcome	Status Code	Notes
Success	201 Created	
Failure	400 Bad Request	• If the request is missing any of the 7 required attributes, the project will not be created, and 400 status code will be returned. • If the request body has invalid data in one of the project attributes, then a 400 status code will be returned • If there is no request body, 400 status code will be returned. Causes of invalid data could be a result of not following the following rules: • Name must have a minimum of 3 to maximum of 30 alpha numeric characters. Must be a combination of alphanumeric characters. Cannot have leading or trailing spaces. • Description must have a minimum of 3 to maximum of 50 alpha numeric characters. Must be a combination of alphanumeric characters. Cannot have leading or trailing spaces. • Budget must be an integer with minimum of 1 to maximum of 10 digits. Value must be greater than or equal to 1.

		• Start_date and end_date must be in the format "yyyy-mm-dd". • **Team_member's id is not found in DataStore** • **Client's id is not found in DataStore** • **Request body with the attribute ID or any other additional attributes.**
Failure	401 Unauthorized	Client (end-user) sent an invalid JWT or did not provide a JWT.
Failure	403 Forbidden	User provided a valid project_id but is not the owner of that project (sub values are different).
Failure	404 Not Found	User provided an invalid project_id.
Failure	406 Not Acceptable	The client requests "Accept" header is not application/JSON
Failure	415 Unsupported Media Type	The client requests "Content-Type" header is not application/JSON
Failure	405 Method Not Allowed	Only GET, PUT, PATCH, DELETE methods is allowed for the URL /projects/:project_id. Allow header will have values of methods that are allowed. POST method is not allowed supported in the URL /projects/:project_id.

Response Examples

Success

Request Header with Content-Type: application/json, Accept: application/json
Status: 201 Created

```
{
    "budget": 1111,
    "client": {
        "id": 5657818854064128
    },
    "description": "Build the best boat put",
    "end_date": "2022-04-07",
    "id": 5738709764800512,
    "name": "Build a Speed Boat",
    "project_owner": "auth0|6279584c512f3900697d5eed",
    "self": "https://127.0.0.1:8000/projects/5738709764800512",
    "start_date": "2020-03-05",
    "team_members": [
        {
            "id": 5664022732996608
        },
        {
            "id": 5671636300726272
        }
    ]
}
```

Failure

Status: 400 Bad Request

```
{
    "Error": "The request object is missing at least one of the required
attributes"
}
```

Invalid JWT or no JWT provided.

Status: 401 Unauthorized

```
{
    "code": "no auth header",
    "description": "Authorization header is missing"
}
```

Status: 403 Forbidden

```
{
    "Error": "Invalid project_owner for this project_id"
}
```

Status: 404 Not Found

```
{
    "Error": "No project with this project_id exists"
}
```

Request Header with Accept: application/pdf

Status: 406 Not Acceptable

Request Header with Content-Type: application/pdf

Status: 415 Unsupported Media Type

Request with unsupported method such as POST for endpoint

Status: 405 Method Not Allowed

```
Response Headers
Content-Type: text/html
Allow: PATCH, OPTIONS, GET, PUT, DELETE, HEAD
```

▶ **Response Body**

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2 Final//EN">
<title>405 Method Not Allowed</title>
<h1>Method Not Allowed</h1>
<p>The method is not allowed for the requested URL.</p>↵
```

5. Edit a User's Project (Partially, PATCH)

Allows you to edit an attribute of a Project

PATCH /projects/:project_id

Request

Path Parameters

Name	Description
project_id	ID of the project

Request Headers

Content-Type must be "application/json".

Request Header	MIME Type	Required?
Content-Type	application/ JSON	Yes
Accept	application/JSON	No

Authentication

- Required: Bearer Token (Valid JWT necessary)

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

At least one of the seven attributes below are required in the request body.

Name	Description	Required?
name	The name of the project.	Yes
budget	The budget of the project.	Yes
description	The description of the project	Yes
start_date	Starting date of the project	Yes
end_date	Ending date of the project	Yes
team_members	Array of key-value pairs of the team_member's "id" attribute and id value	Yes
client	Key-value pairs of the Clients's "id" attribute and id value	Yes

Request Header Example

```
Content-Type: application/JSON
```

Request Body Example

```
{
    "team_members": [
        {
            "id": 5664022732996608
        },
        {
            "id": 5671636300726272
        }
    ]
}
```

Response

Response Body Format

Response body MIME Types

- JSON (application/JSON)

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	
Failure	400 Bad Request	• If the request does not have at least one of the 7 required attributes, the project will not be created, and 400 status code will be returned. • If the request body has invalid data in one of the project attributes, then a 400 status code will be returned • If there is no request body, 400 status code will be returned. Causes of invalid data could be a result of not following the following rules: • Name must have a minimum of 3 to maximum of 30 alpha numeric characters. Must be a combination of alphanumeric characters. Cannot have leading or trailing spaces. • Description must have a minimum of 3 to maximum of 50 alpha numeric characters. Must be a combination of alphanumeric characters. Cannot have leading or trailing spaces. • Budget must be an integer with minimum of 1 to maximum of 10 digits. Value must be greater than or equal to 1. • Start_date and end_date must be in the format "yyyy-mm-dd". • **Team_member's id is not found in DataStore**

		• **Client's id is not found in DataStore** • **Request body with the attribute ID or any other additional attributes.**
Failure	401 Unauthorized	Client (end-user) sent an invalid JWT or did not provide a JWT.
Failure	403 Forbidden	User provided a valid project_id but is not the owner of that project (sub values are different).
Failure	404 Not Found	User provided an invalid project_id.
Failure	415 Unsupported Media Type	The client requests "Content-Type" header is not application/JSON
Failure	405 Method Not Allowed	Only GET, PUT, PATCH, DELETE methods is allowed for the URL /projects/:project_id. Allow header will have values of methods that are allowed. POST method is not allowed supported in the URL /projects/:project_id.

Response Examples

Success

```
Request Header with Content-Type: application/json
Status: 204 No Content

```

Failure

```
Status: 400 Bad Request
{
    "Error": "The request object is missing at least one of the required
attributes"
}
```

```
Invalid JWT or no JWT provided.
Status: 401 Unauthorized
{
    "code": "no auth header",
    "description": "Authorization header is missing"
}
```

```
Status: 403 Forbidden
{
    "Error": "Invalid project_owner for this project_id"
}
```

```
Status: 404 Not Found
{
    "Error": "No project with this project_id exists"
}
```

```
Request Header with Content-Type: application/pdf
```

Status: 415 Unsupported Media Type

Request with unsupported method such as POST for endpoint

Status: 405 Method Not Allowed

```
Response Headers
Content-Type: text/html
```
Allow: PATCH, OPTIONS, GET, PUT, DELETE, HEAD

▶ **Response Body**

```html
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2 Final//EN">
<title>405 Method Not Allowed</title>
<h1>Method Not Allowed</h1>
<p>The method is not allowed for the requested URL.</p>
```

6. Delete a User's Project

Allows you to delete a User's Project

DELETE /projects/:project_id

Request

Path Parameters

Name	Description
project_id	ID of the project

Request Headers

Request Header	MIME Type	Required?
Content-Type	application/ JSON	No
Accept	application/JSON	No

Authentication

- Required: Bearer Token (Valid JWT necessary)

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

None

Request Header Example

None

Request Body Example

None

Response

Response Body Format

Response body MIME Types

- JSON (application/JSON)

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	
Failure	401 Unauthorized	Client (end-user) sent an invalid JWT or did not provide a JWT.
Failure	403 Forbidden	User provided a valid project_id but is not the owner of that project (sub values are different).
Failure	404 Not Found	User provided an invalid project_id.

Failure	405 Method Not Allowed	Only GET, PUT, PATCH, DELETE methods is allowed for the URL /projects/:project_id. Allow header will have values of methods that are allowed. POST method is not allowed supported in the URL /projects/:project_id.

Response Examples

Success

Status: 204 No Content Created

Failure

Invalid JWT or no JWT provided.
Status: 401 Unauthorized
| ```
{
    "code": "no auth header",
    "description": "Authorization header is missing"
}
``` |

Status: 403 Forbidden
| ```
{
    "Error": "Invalid project_owner for this project_id"
}
``` |

Status: 404 Not Found
| ```
{
    "Error": "No project with this project_id exists"
}
``` |

Request with unsupported method such as POST for endpoint
Status: 405 Method Not Allowed
Response Headers
Content-Type: text/html
Allow: PATCH, OPTIONS, GET, PUT, DELETE, HEAD
▶ **Response Body**
| ```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2 Final//EN">
<title>405 Method Not Allowed</title>
<h1>Method Not Allowed</h1>
<p>The method is not allowed for the requested URL.</p>↵
``` |

CLIENTS ENTITY

1. Create a Client

Allows you to create a new Client.

POST /clients

Request

Path Parameters

None

Request Headers

Both Content-Type and Accept headers must be "application/json".

Request Header	MIME Type	Required?
Content-Type	application/ JSON	Yes
Accept	application/JSON	Yes

Authentication

- Not required

Request Body

Required

MIME Types for Request Body:

- application/ JSON

Request Body Format

JSON

Request JSON Attributes

Name	Data Type	Description	Required?	Notes on valid data
name	String	The name of the Client.	Yes	- Minimum of 3 to maximum of 30 alpha numeric characters. - Must be a combination of alphanumeric characters. - Cannot have leading or trailing spaces.
industry	String	Industry that the Client's business belongs to.	Yes	Must be one of the following: - Information Technology - Health Care - Financials - Consumer Discretionary - Communication Services - Industrials - Consumer Staples

				• Energy • Utilities • Real Estate • Materials **Spelling and case must be exactly as shown above.** •

join_date	String	Join date of the Client	Yes	Join date of the Client.
				• Must be in the format "yyyy-mm-dd"
				   o yyyy is the 4 digit year
				   o mm is the numeric 2 digit month e.g. 03 for March
				   o dd is the numeric 2 digit day e.g. 05
				   o For example, "2022-03-05"
				      ▪ Year is 2022
				      ▪ Month is 03
				      ▪ Day is 05
				• Must be a valid date. E.g. 2022-01-67 is not a valid date.

Request Header Example

```
Content-Type: application/ JSON
Accept: application/JSON
```

Request Body Example

```
{
    "name": "The Simpsons Company",
    "join_date": "2020-07-05",
    "industry": "Financials"
}
```

Response

Response Body Format

• MIME Type: application/JSON

Response Statuses

Outcome	Status Code	Notes
Success	201 Created	
Failure	400 Bad Request	• If the request is missing any of the 3 required attributes, the Client is not created, and 400 status code must be returned. • If the request body has invalid data in one of the Client attributes, then a 400 status code will be returned. • If there is no request body, 400 status code will be returned. Causes of invalid data could be a result of not following the

		following rules:
		• Name must have a minimum of 3 to maximum of 30 alpha numeric characters. Must be a combination of alphanumeric characters. Cannot have leading or trailing spaces.
		• Industry is case-sensitive and must match exactly the industry list provided.
		• Join_date must be in the format "yyyy-mm-dd".
		• **Request body with the attribute ID or any other additional attributes.**
Failure	406 Not Acceptable	The client requests "Accept" header is not application/JSON
Failure	415 Unsupported Media Type	The client requests "Content-Type" header is not application/JSON
Failure	405 Method Not Allowed	Only POST, GET method is allowed for the URL /clients. Allow header will have values of methods that are allowed. DELETE, PUT, PATCH are not allowed supported in the URL /clients.

Response Examples

- Datastore will automatically generate an ID and store it with the entity being created. Your app must send back this value in the response body as shown in the example.

Success

```
Request Header with Content-Type: application/JSON, Accept: application/JSON

Status: 201 Created

{
    "name": "The Simpsons Company",
    "projects": null,
    "join_date": "2020-07-05",
    "industry": "Financials",
    "id": 5694034018304000,
    "self": "https://127.0.0.1:8000/clients/5694034018304000"
}
```

Failure

```
Status: 400 Bad Request

{
    "Error": "The request object is missing at least one of the required
attributes"
}
```

```
Request Header with Accept: text/html

Status: 406 Not Acceptable
```

Request Header with Content-Type: text/html

Status: 415 Unsupported Media Type

Request with unsupported method such as PUT, PATCH, DELETE for endpoint

Status: 405 Method Not Allowed

```
Response Headers
Content-Type: text/html; charset=utf-8
Allow: OPTIONS, GET, POST
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2 Final//EN">
<title>405 Method Not Allowed</title>
<h1>Method Not Allowed</h1>
<p>The method is not allowed for the requested URL.</p>
```

2. View all Clients

Allows you to view all created Clients.

GET /clients

Request

Path Parameters

None

Request Headers

Both Content-Type and Accept headers must be "application/json".

Request Header	MIME Type	Required?
Content-Type	application/ JSON	No
Accept	application/JSON	Yes

Authentication

- None

Request Body

None

Request Body Format

None

Request JSON Attributes

None

Request Header Example

```
Accept: application/JSON
```

Response

Response Body Format

- MIME Type: application/JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	406 Not Acceptable	The client requests "Accept" header is not application/JSON
Failure	405 Method Not Allowed	Only POST, GET method is allowed for the URL /clients. Allow header will have values of methods that are allowed. DELETE, PUT, PATCH are not allowed supported in the URL /clients.

Response Examples

- Datastore will automatically generate an ID and store it with the entity being created. Your app must send back this value in the response body as shown in the example.

```
Request Header with Accept: application/JSON

Status: 200 OK
{
    "clients": [
        {
            "id": 5104575795167232,
            "industry": "Consumer Discretionary",
            "join_date": "2020-06-05",
            "name": "Logitech",
            "projects": null,
            "self": "https://127.0.0.1:8000/clients/5104575795167232"
        },
        {
            "id": 5634601401712640,
            "industry": "Information Technology",
            "join_date": "2019-06-05",
            "name": "Joogle",
            "projects": null,
            "self": "https://127.0.0.1:8000/clients/5634601401712640"
        },
        {
            "id": 5657818854064128,
            "industry": "Consumer Staples",
            "join_date": "2020-07-05",
            "name": "The Avengers Ltd",
            "projects": null,
            "self": "https://127.0.0.1:8000/clients/5657818854064128"
        },
        {
            "id": 5694034018304000,
            "industry": "Financials",
            "join_date": "2020-07-05",
            "name": "The Simpsons Company",
            "projects": null,
            "self": "https://127.0.0.1:8000/clients/5694034018304000"
        },
        {
            "id": 5704134103662592,
            "industry": "Real Estate",
            "join_date": "2021-07-05",
            "name": "Monopoly Game",
            "projects": null,
            "self": "https://127.0.0.1:8000/clients/5704134103662592"
```

```
        }
    ],
    "next": "https://127.0.0.1:8000/clients?limit=0&offset=5"
}
```

Failure

Request Header with Accept: text/html

Status: 406 Not Acceptable

Request with unsupported method such as PUT, PATCH, DELETE for endpoint

Status: 405 Method Not Allowed

Response Headers
Content-Type: text/html; charset=utf-8
Allow: OPTIONS, GET, POST
```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2 Final//EN">
<title>405 Method Not Allowed</title>
<h1>Method Not Allowed</h1>
<p>The method is not allowed for the requested URL.</p>
```

3. View a specific Client

Allows you to view a specific Client.

GET /client/:client_id

Request

Path Parameters

Name	Description
client_id	ID of the Client

Request Headers

Both Content-Type and Accept headers must be "application/json".

Request Header	MIME Type	Required?
Content-Type	application/ JSON	No
Accept	application/JSON	Yes

Authentication

- None

Request Body

None

Request Body Format

None

Request JSON Attributes

None

Request Header Example

```
Accept: application/JSON
```

Response

Response Body Format

- MIME Type: application/JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	404 Not Found	User provided an invalid client_id.
Failure	406 Not Acceptable	The client sent requests "Accept" header is not application/JSON
Failure	405 Method Not Allowed	Only GET, PUT, PATCH, DELETE methods is allowed for the URL /clients/:client_id. Allow header will have values of methods that are allowed. POST method is not allowed supported in the URL /clients/:client_id.

Response Examples

- Datastore will automatically generate an ID and store it with the entity being created. Your app must send back this value in the response body as shown in the example.

Success

```
Request Header with Accept: application/JSON
Status: 200 OK

{
    "id": 5694034018304000,
    "industry": "Financials",
    "join_date": "2020-07-05",
    "name": "The Simpsons Company",
    "projects": null,
    "self": "https://127.0.0.1:8000/clients/5694034018304000"
}
```

Failure

```
Invalid client_id
Status: 404 Not Found


{
    "Error": "No client with this client_id exists"
}
```

```
Request Header with Accept: text/html

Status: 406 Not Acceptable
```

```
Request with unsupported method such as POST for endpoint

Status: 405 Method Not Allowed

Response Headers
Content-Type: text/html; charset=utf-8
Allow: OPTIONS, GET, PUT, PATCH, DELETE
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2 Final//EN">
<title>405 Method Not Allowed</title>
<h1>Method Not Allowed</h1>
<p>The method is not allowed for the requested URL.</p>
```

4. Edit a Client (All, PUT)

Allows you to edit a Client entity.

PUT /clients/:client_id

Request

Path Parameters

Name	Description
client_id	ID of the client

Request Headers

Both Content-Type and Accept headers must be "application/json".

Request Header	MIME Type	Required?
Content-Type	application/ JSON	Yes
Accept	application/JSON	Yes

Authentication

- **Required: Bearer Token (Valid JWT necessary)**

Authorization

- **Required: User's "admin" attribute must be set to "True".**

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

Requires all 4 attributes in the request body.

Name	Description	Required?
name	The name of the Client.	Yes
Industry	The industry of the Client	Yes
join_date	Join date of the Client	Yes
projects	Array of key-value pairs of the projects "id" attribute and id value, project's "name" and name value.	Yes

Request Header Example

```
Content-Type: application/JSON

Accept: application/JSON
```

Request Body Example

```
  {
    "projects": {
        "id": 5744149642870784,
        "name": "Building Renovation"
    },
    "join_date": "2020-07-05",
    "name": "The Simpsons Company",
    "industry": "Financials"
}
```

Response

Response Body Format

Response body MIME Types

- JSON (application/JSON)

Response Statuses

Outcome	Status Code	Notes
Success	201 Created	
Failure	400 Bad Request	• If the request is missing any of the 4 required attributes, the Client is not updated/created, and 400 status code must be returned. • If the request body has invalid data in one of the Client attributes, then a 400 status code will be returned. • If there is no request body, 400 status code will be returned. Causes of invalid data could be a result of not following the following rules: • Name must have a minimum of 3 to maximum of 30 alpha numeric characters. Must be a combination of alphanumeric characters. Cannot have leading or trailing spaces. • Industry is case-sensitive and must match exactly the industry list provided. • Join_date must be in the format "yyyy-mm-dd". • Projects attribute has an invalid Project id value that is not found in DataStore or has an invalid Project name value that does not follow the Project name attribute requirements (see Project's Data Model). **Request body with the attribute ID or any other additional attributes.**
Failure	401 Unauthorized	402 Client (end-user) sent an invalid JWT or did not provide a JWT.

Failure	403 Forbidden	User is not an admin.
Failure	404 Not Found	User provided an invalid client_id.
Failure	406 Not Acceptable	The client requests "Accept" header is not application/JSON
Failure	415 Unsupported Media Type	The client requests "Content-Type" header is not application/JSON
Failure	405 Method Not Allowed	Only GET, PUT, PATCH, DELETE methods is allowed for the URL /clients/:client_id. Allow header will have values of methods that are allowed. POST method is not allowed supported in the URL /clients/:client_id.

Response Examples

Success

```
Request Header with Content-Type: application/json, Accept: application/json

Status: 201 Created

{
    "id": 5766155109138432,
    "industry": "Financials",
    "join_date": "2020-07-05",
    "name": "The Simpsons Company",
    "projects": {
      "id": 5744149642870784,
      "name": "Building Renovation"
    },
    "self": "https://127.0.0.1:8000/clients/5766155109138432"
  }↵
```

Failure

```
Status: 400 Bad Request

{
    "Error": "The request object is missing at least one of the required
attributes"
}
```

Invalid JWT or no JWT provided.
```
Status: 401 Unauthorized

{
    "code": "no auth header",
    "description": "Authorization header is missing"
}
```

Status: 403 Forbidden
```
{
    "Error": "User is not an admin."
}
```

Status: 404 Not Found
```
{
    "Error": "No client with this client_id exists"
}
```

Request Header with Accept: application/pdf

Status: 406 Not Acceptable

Request Header with Content-Type: application/pdf

Status: 415 Unsupported Media Type

Request with unsupported method such as POST for endpoint

Status: 405 Method Not Allowed

Response Headers
Content-Type: text/html
Allow: PATCH, OPTIONS, GET, PUT, DELETE, HEAD

▶ **Response Body**

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2 Final//EN">
<title>405 Method Not Allowed</title>
<h1>Method Not Allowed</h1>
<p>The method is not allowed for the requested URL.</p>↵
```

5. Edit a Client (Partially, PATCH)

Allows you to edit attributes of a Client entity.

PATCH /clients/:client_id

Request

Path Parameters

Name	Description
client_id	ID of the client

Request Headers

Content-Type must be "application/json".

Request Header	MIME Type	Required?
Content-Type	application/ JSON	Yes
Accept	application/JSON	No

Authentication

- **Required: Bearer Token (Valid JWT necessary)**

Authorization

- **Required: User's "admin" attribute must be set to "True".**

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

Requires at least one of 4 attributes in the request body.

Name	Description	Required?
name	The name of the Client.	Yes
Industry	The industry of the Client	Yes
join_date	Join date of the Client	Yes
projects	Array of key-value pairs of the projects "id" attribute and id value, project's "name" and name value.	Yes

Request Header Example

```
Content-Type: application/JSON

Accept: application/JSON
```

Request Body Example

```
{
    "name": "The Simpsons Company",
    "industry": "Financials"
}
```

Response

Response Body Format

Response body MIME Types

- JSON (application/JSON)

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	
Failure	400 Bad Request	- If the request does not have at least one of the 4 required attributes, the Client is not updated/created, and 400 status code must be returned. - If the request body has invalid data in one of the Client attributes, then a 400 status code will be returned. - If there is no request body, 400 status code will be returned. Causes of invalid data could be a result of not following the following rules: - Name must have a minimum of 3 to maximum of 30 alpha numeric characters. Must be a combination of alphanumeric characters. Cannot have leading or trailing spaces. - Industry is case-sensitive and must match exactly the industry list provided. - Join_date must be in the format "yyyy-mm-dd". - Projects attribute has an invalid Project id value that is not found in DataStore or has an invalid Project name value that does not follow the Project name attribute requirements (see Project's Data Model). **Request body with the attribute ID or any other additional attributes.**
Failure	401 Unauthorized	Client (end-user) sent an invalid JWT or did not provide a JWT.
Failure	403 Forbidden	User is not an admin.
Failure	404 Not Found	User provided an invalid client_id.
Failure	415 Unsupported Media Type	The client requests "Content-Type" header is not application/JSON
Failure	405 Method Not Allowed	Only GET, PUT, PATCH, DELETE methods is allowed for the URL /clients/:client_id. Allow header will have values of methods that are allowed. POST method is not allowed supported in the URL /clients/:client_id.

Response Examples

Success

Request Header with Content-Type: application/json

Status: 204 No Content

Status: 400 Bad Request

```json
{
    "Error": "The request object is missing at least one of the required attributes"
}
```

Invalid JWT or no JWT provided.
Status: 401 Unauthorized

```json
{
    "code": "no auth header",
    "description": "Authorization header is missing"
}
```

Status: 403 Forbidden

```json
{
    "Error": "User is not an admin."
}
```

Status: 404 Not Found

```json
{
    "Error": "No client with this client_id exists"
}
```

Request Header with Content-Type: application/pdf

Status: 415 Unsupported Media Type

Request with unsupported method such as POST for endpoint

Status: 405 Method Not Allowed

Response Headers
Content-Type: text/html
Allow: PATCH, OPTIONS, GET, PUT, DELETE, HEAD

▶ **Response Body**

```html
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2 Final//EN">
<title>405 Method Not Allowed</title>
<h1>Method Not Allowed</h1>
<p>The method is not allowed for the requested URL.</p>↵
```

6. Delete a Client

Allows you to delete a specific Client entity.

DELETE /clients/:client_id

Request

Path Parameters

Name	Description
client_id	ID of the client

Request Headers

Request Header	MIME Type	Required?
Content-Type	application/ JSON	No
Accept	application/JSON	No

Authentication

- **Required: Bearer Token (Valid JWT necessary)**

Authorization

- **Required: User's "admin" attribute must be set to "True".**

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

None

Request Header Example

None

Request Body Example

None

Response

Response Body Format

None

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	
Failure	401 Unauthorized	Client (end-user) sent an invalid JWT or did not provide a JWT.
Failure	403 Forbidden	User is not an admin.
Failure	404 Not Found	User provided an invalid client_id.

Failure	405 Method Not Allowed	Only GET, PUT, PATCH, DELETE methods is allowed for the URL /clients/:client_id. Allow header will have values of methods that are allowed. POST method is not allowed supported in the URL /clients/:client_id.

Response Examples

Success

Status: 204 No Content

Failure

Invalid JWT or no JWT provided.
Status: 401 Unauthorized

```
{
    "code": "no auth header",
    "description": "Authorization header is missing"
}
```

Status: 403 Forbidden

```
{
    "Error": "User is not an admin."
}
```

Status: 404 Not Found

```
{
    "Error": "No client with this client_id exists"
}
```

Request with unsupported method such as POST for endpoint
Status: 405 Method Not Allowed

Response Headers
Content-Type: text/html
Allow: PATCH, OPTIONS, GET, PUT, DELETE, HEAD

▶ **Response Body**

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2 Final//EN">
<title>405 Method Not Allowed</title>
<h1>Method Not Allowed</h1>
<p>The method is not allowed for the requested URL.</p>↵
```

TEAM MEMBERS ENTITY

1. Create a Team_Member

Allows you to create a new team member.

POST /team_members

Request

Path Parameters

None

Request Headers

Both Content-Type and Accept headers must be "application/json".

Request Header	MIME Type	Required?
Content-Type	application/ JSON	Yes
Accept	application/JSON	Yes

Authentication

- Not required

Request Body

Required

MIME Types for Request Body:

- application/ JSON

Request Body Format

JSON

Request JSON Attributes

Name	Data Type	Description	Required?	Notes on valid data
name	String	The name of the Team Member.	Yes	- Minimum of 3 to maximum of 30 alpha numeric characters. - Must be a combination of alphanumeric characters. - Cannot have leading or trailing spaces.
specialty	String	Specialty/area of expertise of the Team Member	Yes	- Minimum of 3 to maximum of 20 alpha numeric characters. - Must be a combination of alphanumeric characters. - Cannot have leading or trailing spaces
join_date	String	Join date of the Team Member	Yes	Join date of the Team Member. - Must be in the format "yyyy-mm-dd" - yyyy is the 4 digit year

| | | | | o   mm is the numeric 2 digit month e.g. 03 for March
o   dd is the numeric 2 digit day e.g. 05
o   For example, "2022-03-05"
   ▪   Year is 2022
   ▪   Month is 03
   ▪   Day is 05
•   Must be a valid date. E.g. 2022-01-67 is not a valid date. |

Request Header Example

```
Content-Type: application/ JSON
Accept: application/JSON
```

Request Body Example

```
{
    "name": "Stewie Griffin",
    "join_date": "2020-07-05",
    "specialty": "Master Intelligence"
}
```

Response

Response Body Format

- MIME Type: application/JSON

Response Statuses

Outcome	Status Code	Notes
Success	201 Created	
Failure	400 Bad Request	• If the request is missing any of the 3 required attributes, the Team Member is not created, and 400 status code must be returned. • If the request body has invalid data in one of the Team Member attributes, then a 400 status code will be returned. • If there is no request body, 400 status code will be returned. Causes of invalid data could be a result of not following the following rules: 403 Name must have a minimum of 3 to maximum of 30 alpha numeric characters. Must be a combination of alphanumeric characters. Cannot have leading or trailing spaces. 404 Specialty must have a minimum of 3 to maximum of 20 alpha numeric characters. Must be a combination of alphanumeric characters. Cannot have leading or trailing

		spaces.
		405 Join_date must be in the format "yyyy-mm-dd".
		406 Request body with the attribute ID or any other additional attributes.
Failure	406 Not Acceptable	The client requests "Accept" header is not application/JSON
Failure	415 Unsupported Media Type	The client requests "Content-Type" header is not application/JSON
Failure	405 Method Not Allowed	Only POST, GET method is allowed for the URL /team_members. Allow header will have values of methods that are allowed. DELETE, PUT, PATCH are not allowed supported in the URL /team_members.

Response Examples

- Datastore will automatically generate an ID and store it with the entity being created. Your app must send back this value in the response body as shown in the example.

Success

```
Request Header with Content-Type: application/JSON, Accept: application/JSON

Status: 201 Created

{
    "specialty": "Master Intelligence",
    "join_date": "2020-07-05",
    "name": "Stewie Griffin",
    "projects": null,
    "id": 5634900908572672,
    "self": "https://127.0.0.1:8000/team_members/5634900908572672"
}
```

Failure

```
Status: 400 Bad Request

{
    "Error": "The request object is missing at least one of the required
attributes"
}
```

```
Request Header with Accept: text/html

Status: 406 Not Acceptable
```

```
Request Header with Content-Type: text/html

Status: 415 Unsupported Media Type
```

Request with unsupported method such as PUT, PATCH, DELETE for endpoint

Status: 405 Method Not Allowed

```
Response Headers
Content-Type: text/html; charset=utf-8
Allow: OPTIONS, GET, POST
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2 Final//EN">
<title>405 Method Not Allowed</title>
<h1>Method Not Allowed</h1>
<p>The method is not allowed for the requested URL.</p>
```

2. View all Team Members

Allows you to view all created Team Members.

GET /team_members

Request

Path Parameters

None

Request Headers

Accept headers must be "application/json".

Request Header	MIME Type	Required?
Content-Type	application/ JSON	No
Accept	application/JSON	Yes

Authentication

- None

Request Body

None

Request Body Format

None

Request JSON Attributes

None

Request Header Example

```
Accept: application/JSON
```

Response

Response Body Format

- MIME Type: application/JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	406 Not Acceptable	The client requests "Accept" header is not application/JSON
Failure	405 Method Not Allowed	Only POST, GET method is allowed for the URL /team_members. Allow header will have values of methods that are allowed. DELETE, PUT, PATCH are not allowed supported in the URL /team_members.

Response Examples

- Datastore will automatically generate an ID and store it with the entity being created. Your app must send back this value in the response body as shown in the example.

Success

```
Request Header with Accept: application/JSON

Status: 200 OK
{
    "next": "https://127.0.0.1:8000/team_members?limit=0&offset=5",
    "team_members": [
        {
            "id": 5634900908572672,
            "join_date": "2020-07-05",
            "name": "Stewie Griffin",
            "projects": null,
            "self": "https://127.0.0.1:8000/team_member/5634900908572672",
            "specialty": "Master Intelligence"
        },
        {
            "id": 5639601012080640,
            "join_date": "2020-07-05",
            "name": "Batman",
            "projects": null,
            "self": "https://127.0.0.1:8000/team_member/5639601012080640",
            "specialty": "Fighting Crime"
        },
        {
            "id": 5664022732996608,
            "join_date": "2020-07-05",
            "name": "Bart Simpson",
            "projects": {
                "id": 5738709764800512,
                "name": "Build a Racing King Boat",
                "self": "https://127.0.0.1:8000/projects/5738709764800512"
            },
            "self": "https://127.0.0.1:8000/team_member/5664022732996608",
            "specialty": "Chaos"
        },
        {
            "id": 5671636300726272,
            "join_date": "2020-07-05",
            "name": "Lisa Simpson",
            "projects": {
                "id": 5738709764800512,
```

```
            "name": "Build a Racing King Boat",
            "self": "https://127.0.0.1:8000/projects/5738709764800512"
        },
        "self": "https://127.0.0.1:8000/team_member/5671636300726272",
        "specialty": "Science"
    },
    {

        "id": 5681556802764800,
        "join_date": "2020-07-05",
        "name": "Garfield",
        "projects": null,
        "self": "https://127.0.0.1:8000/team_member/5681556802764800",
        "specialty": "Lasagna"
    }
    ]
}
```

Failure

Request Header with Accept: text/html

Status: 406 Not Acceptable

Request with unsupported method such as PUT, PATCH, DELETE for endpoint

Status: 405 Method Not Allowed

Response Headers
Content-Type: text/html; charset=utf-8
Allow: OPTIONS, GET, POST
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2 Final//EN">
<title>405 Method Not Allowed</title>
<h1>Method Not Allowed</h1>
<p>The method is not allowed for the requested URL.</p>↵

3. View a specific Team Member

Allows you to view a specific Team Member.

GET /team_members/:team_member_id

Request

Path Parameters

Name	Description
team_member_id	ID of the Team Member

Request Headers

Both Content-Type and Accept headers must be "application/json".

Request Header	MIME Type	Required?
Content-Type	application/ JSON	No
Accept	application/JSON	Yes

Authentication

- None

Request Body

None

Request Body Format

None

Request JSON Attributes

None

Request Header Example

```
Accept: application/JSON
```

Response

Response Body Format

- MIME Type: application/JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	404 Not Found	User provided an invalid team_member_id.
Failure	406 Not Acceptable	The client sent requests "Accept" header is not application/JSON
Failure	405 Method Not Allowed	Only GET, PUT, PATCH, DELETE methods is allowed for the URL /team_members/:team_member_id. Allow header will have values of methods that are allowed. POST method is not allowed supported in the URL /team_members/:team_member_id.

Response Examples

- Datastore will automatically generate an ID and store it with the entity being created. Your app must send back this value in the response body as shown in the example.

Success

```
Request Header with Accept: application/JSON
Status: 200 OK
{
    "id": 5664022732996608,
    "join_date": "2020-07-05",
    "name": "Bart Simpson",
    "projects": {
        "id": 5738709764800512,
        "name": "Build a Racing King Boat",
        "self": "https://127.0.0.1:8000/projects/5738709764800512"
    },
    "self": "https://127.0.0.1:8000/team_members/5664022732996608",
    "specialty": "Chaos"
}
```

Failure

```
Invalid team_member_id
Status: 404 Not Found


{
    "Error": "No team_member with this team_member_id exists"
}
```

```
Request Header with Accept: text/html

Status: 406 Not Acceptable
```

```
Request with unsupported method such as POST for endpoint

Status: 405 Method Not Allowed

Response Headers
Content-Type: text/html; charset=utf-8
Allow: OPTIONS, GET, PUT, PATCH, DELETE
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2 Final//EN">
<title>405 Method Not Allowed</title>
<h1>Method Not Allowed</h1>
<p>The method is not allowed for the requested URL.</p>
```

4. Edit a Team Member (All, PUT)

Allows you to edit a Team Member entity.

PUT /team_members/:team_member_id

Request

Path Parameters

Name	Description
client_id	ID of the client

Request Headers

Both Content-Type and Accept headers must be "application/json".

Request Header	MIME Type	Required?
Content-Type	application/ JSON	Yes
Accept	application/JSON	Yes

Authentication

- **Required: Bearer Token (Valid JWT necessary)**

Authorization

- **Required: User's "admin" attribute must be set to "True".**

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

Requires all 4 attributes in the request body.

Name	Description	Required?
name	The name of the Team Member.	Yes
specialty	The specialty of the Team Member	Yes
join_date	Join date of the Team Member	Yes
projects	Array of key-value pairs of the projects "id" attribute and id value, project's "name" and name value.	Yes

Request Header Example

```
Content-Type: application/JSON

Accept: application/JSON
```

Request Body Example

```json
{
    "projects": {
        "id": 5744149642870784,
        "name": "Building Renovation"
    },
    "join_date": "2020-07-05",
    "name": "Bart Simpson",
    "specialty": "Chaos"
}
```

Response

Response Body Format

Response body MIME Types

- JSON (application/JSON)

Response Statuses

Outcome	Status Code	Notes
Success	201 Created	
Failure	400 Bad Request	- If the request is missing any of the 4 required attributes, the Team Member is not updated/created, and 400 status code must be returned. - If the request body has invalid data in one of the Team Member attributes, then a 400 status code will be returned. - If there is no request body, 400 status code will be returned. Causes of invalid data could be a result of not following the following rules: - Name must have a minimum of 3 to maximum of 30 alpha numeric characters. Must be a combination of alphanumeric characters. Cannot have leading or trailing spaces. - Specialty must have a minimum of 3 to maximum of 20 alpha numeric characters. Must be a combination of alphanumeric characters. Cannot have leading or trailing spaces. - Join_date must be in the format "yyyy-mm-dd". - Projects attribute has an invalid Project id value that is not found in DataStore or has an invalid Project name value that does not follow the Project name attribute requirements (see Project's Data Model). **Request body with the attribute ID or any other additional attributes.**

Failure	401 Unauthorized	Client (end-user) sent an invalid JWT or did not provide a JWT.
Failure	403 Forbidden	User is not an admin.
Failure	404 Not Found	User provided an invalid team_member_id.
Failure	406 Not Acceptable	The client requests "Accept" header is not application/JSON
Failure	415 Unsupported Media Type	The client requests "Content-Type" header is not application/JSON
Failure	405 Method Not Allowed	Only GET, PUT, PATCH, DELETE methods is allowed for the URL /team_members/:team_member_id. Allow header will have values of methods that are allowed. POST method is not allowed supported in the URL /team_members/:team_member_id.

Response Examples

Success

Request Header with Content-Type: application/json, Accept: application/json

Status: 201 Created

```
{
    "id": 5664022732996608,
    "join_date": "2020-07-05",
    "name": "Bart Simpson",
    "projects": {
      "id": 5744149642870784,
      "name": "Building Renovation"
    },
    "self": "https://127.0.0.1:8000/team_members/5664022732996608",
    "specialty": "Chaos"
  }↵
```

Failure

Status: 400 Bad Request
```
{
    "Error": "The request object is missing at least one of the required
attributes"
}
```

Invalid JWT or no JWT provided.
Status: 401 Unauthorized
```
{
    "code": "no auth header",
    "description": "Authorization header is missing"
}
```

Status: 403 Forbidden

```
{
    "Error": "User is not an admin."
}
```

Status: 404 Not Found

```
{
    "Error": "No team_member with this team_member_id exists"
}
```

Request Header with Accept: application/pdf

Status: 406 Not Acceptable

Request Header with Content-Type: application/pdf

Status: 415 Unsupported Media Type

Request with unsupported method such as POST for endpoint

Status: 405 Method Not Allowed

```
Response Headers
Content-Type: text/html
Allow: PATCH, OPTIONS, GET, PUT, DELETE, HEAD
```

▶ **Response Body**

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2 Final//EN">
<title>405 Method Not Allowed</title>
<h1>Method Not Allowed</h1>
<p>The method is not allowed for the requested URL.</p>↵
```

5. Edit a Team Member (Partially, PATCH)

Allows you to edit attributes of a Team Member entity.

PATCH /team_members/:team_member_id

Request

Path Parameters

Name	Description
team_member_id	ID of the Team Member

Request Headers

Content-Type header must be "application/json".

Request Header	MIME Type	Required?
Content-Type	application/ JSON	Yes
Accept	application/JSON	No

Authentication
- **Required: Bearer Token (Valid JWT necessary)**

Authorization
- **Required: User's "admin" attribute must be set to "True".**

Request Body
Required

Request Body Format
JSON

Request JSON Attributes

Requires at least one of 4 attributes in the request body.

Name	Description	Required?
name	The name of the Team Member.	Yes
specialty	The specialty of the Team Member	Yes
join_date	Join date of the Team Member	Yes
projects	Array of key-value pairs of the projects "id" attribute and id value, project's "name" and name value.	Yes

Request Header Example

Content-Type: application/JSON

Request Body Example

{

```
    "projects": null
}
```

Response

Response Body Format

Response body MIME Types

- JSON (application/JSON)

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	
Failure	400 Bad Request	- If the request is missing at least one of the 4 attributes, the Team Member is not updated/created, and 400 status code must be returned. - If the request body has invalid data in one of the Team Member attributes, then a 400 status code will be returned. - If there is no request body, 400 status code will be returned. Causes of invalid data could be a result of not following the following rules: - Name must have a minimum of 3 to maximum of 30 alpha numeric characters. Must be a combination of alphanumeric characters. Cannot have leading or trailing spaces. - Specialty must have a minimum of 3 to maximum of 20 alpha numeric characters. Must be a combination of alphanumeric characters. Cannot have leading or trailing spaces. - Join_date must be in the format "yyyy-mm-dd". - Projects attribute has an invalid Project id value that is not found in DataStore or has an invalid Project name value that does not follow the Project name attribute requirements (see Project's Data Model). **Request body with the attribute ID or any other additional attributes.**
Failure	401 Unauthorized	Client (end-user) sent an invalid JWT or did not provide a JWT.
Failure	403 Forbidden	User is not an admin.
Failure	404 Not Found	User provided an invalid team_member_id.
Failure	415 Unsupported Media Type	The client requests "Content-Type" header is not application/JSON
Failure	405 Method Not Allowed	Only GET, PUT, PATCH, DELETE methods is allowed for the URL /team_members/:team_member_id. Allow header will have values of methods that are allowed. POST method is not

		allowed supported in the URL /team_members/:team_member_id.

Response Examples

Success

Request Header with Content-Type: application/json   Status: 204 No Content

Failure

Status: 400 Bad Request   ``` {   "Error": "The request object is missing at least one of the required attributes"   } ```

Invalid JWT or no JWT provided.
 Status: 401 Unauthorized
 `` {
     "code": "no auth header",
     "description": "Authorization header is missing"
 } ```

Status: 403 Forbidden   ``` {   "Error": "User is not an admin."   } ```
Status: 404 Not Found   ``` {   "Error": "No team_member with this team_member_id exists"   } ```
Request Header with Content-Type: application/pdf   Status: 415 Unsupported Media Type
Request with unsupported method such as POST for endpoint   Status: 405 Method Not Allowed   Response Headers   Content-Type: text/html   **Allow: PATCH, OPTIONS, GET, PUT, DELETE, HEAD**

▶ Response Body

```html
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2 Final//EN">
<title>405 Method Not Allowed</title>
<h1>Method Not Allowed</h1>
<p>The method is not allowed for the requested URL.</p>
```

6. Delete a Team Member

Allows you to delete a specific Team Member entity.

DELETE /team_members/:team_member_id

Request

Path Parameters

Name	Description
team_member_id	ID of the Team Member

Request Headers

Request Header	MIME Type	Required?
Content-Type	application/ JSON	No
Accept	application/JSON	No

Authentication

- **Required: Bearer Token (Valid JWT necessary)**

Authorization

- **Required: User's "admin" attribute must be set to "True".**

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

None

Request Header Example

None

Request Body Example

None

Response

Response Body Format

None

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	

Failure	401 Unauthorized	Client (end-user) sent an invalid JWT or did not provide a JWT.
Failure	403 Forbidden	User is not an admin.
Failure	404 Not Found	User provided an invalid team_member_id.
Failure	405 Method Not Allowed	Only GET, PUT, PATCH, DELETE methods is allowed for the URL /team_members/:team_member_id. Allow header will have values of methods that are allowed. POST method is not allowed supported in the URL /team_members/:team_member_id.

Response Examples

Success

Status: 204 No Content

Failure

Invalid JWT or no JWT provided.
Status: 401 Unauthorized
| ```json
{
    "code": "no auth header",
    "description": "Authorization header is missing"
}
``` |

Status: 403 Forbidden
| ```json
{
    "Error": "User is not an admin."
}
``` |

Status: 404 Not Found
| ```json
{
    "Error": "No team_member with this team_member_id exists"
}
``` |

Request with unsupported method such as POST for endpoint
Status: 405 Method Not Allowed
Response Headers
Content-Type: text/html
Allow: PATCH, OPTIONS, GET, PUT, DELETE, HEAD
▶ **Response Body**
| ```html
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2 Final//EN">
<title>405 Method Not Allowed</title>
<h1>Method Not Allowed</h1>
<p>The method is not allowed for the requested URL.</p>
``` |

PROJECTS and CLIENTS

1. Assign a Client to a User's Project (All, PUT)

Allows you to assign a Client to a Project.

PUT /projects/:project_id/clients/:client_id

Request

Path Parameters

Name	Description
project_id	ID of the project
client_id	ID of the client

Request Headers

Request Header	MIME Type	Required?
Content-Type	application/ JSON	No
Accept	application/JSON	No

Authentication

- **Required: Bearer Token (Valid JWT necessary)**

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

None

Request Header Example

None

Request Body Example

None

Response

Response Body Format

Response body MIME Types

- JSON (application/JSON)

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	
Failure	401 Unauthorized	Client (end-user) sent an invalid JWT or did not provide a

		JWT.
Failure	403 Forbidden	• User provided a valid project_id and client_id but another Client is assigned to this project. • User is not the project owner. • Client with client_id is already assigned to another project.
Failure	404 Not Found	User provided an invalid project_id or client_id
Failure	405 Method Not Allowed	Only PUT, DELETE methods is allowed for the URL /projects/:project_id/clients/:client_id. Allow header will have values of methods that are allowed. POST, GET, PATCH methods are not allowed supported in the URL /projects/:project_id/clients/:client_id..

Response Examples

Success

Status: 204 No Content

Failure

Invalid JWT or no JWT provided.

Status: 401 Unauthorized
| ```
{
    "code": "no auth header",
    "description": "Authorization header is missing"
}
``` |
| Status: 403 Forbidden |
| ```
{
    "Error": "Invalid project_owner for this project_id"
}
``` |
| Status: 403 Forbidden |
| ```
{
    "Error": "The client is already assigned to a project"
}
``` |
| Status: 403 Forbidden |
| ```
{
    "Error": "There is already another client that is assigned to this project"
}
``` |
| Status: 404 Not Found |
| ```
{
    "Error": "The specified project and/or client does not exist"
}
``` |
| *Request with unsupported method such as POST, PATCH, GET for endpoint* |
| |

Status: 405 Method Not Allowed

```
Response Headers
Content-Type: text/html
Allow: OPTIONS, PUT, DELETE, HEAD
```

▶Response Body

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2 Final//EN">
<title>405 Method Not Allowed</title>
<h1>Method Not Allowed</h1>
<p>The method is not allowed for the requested URL.</p>↵
```

2. Remove a Client from a User's Project

Allows you to delete a Client from a User's Project

DELETE /projects/:project_id/clients/:client_id

Request

Path Parameters

Name	Description
project_id	ID of the project
client_id	ID of the client

Request Headers

Request Header	MIME Type	Required?
Content-Type	application/ JSON	No
Accept	application/JSON	No

Authentication

- Required: Bearer Token (Valid JWT necessary)

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

None

Request Header Example

None

Request Body Example

None

Response

Response Body Format

Response body MIME Types

- JSON (application/JSON)

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	
Failure	401 Unauthorized	Client (end-user) sent an invalid JWT or did not provide a JWT.
Failure	403 Forbidden	- Client is not assigned to a project. - User is not the project owner. - Client with client_id's assigned project does not match the project with project_id and vice versa.
Failure	404 Not Found	User provided an invalid project_id or client_id
Failure	405 Method Not Allowed	Only PUT, DELETE methods is allowed for the URL /projects/:project_id/clients/:client_id. Allow header will have values of methods that are allowed. POST, GET, PATCH methods are not allowed supported in the URL /projects/:project_id/clients/:client_id..

Response Examples

Success

Status: 204 No Content

Failure

Invalid JWT or no JWT provided.

Status: 401 Unauthorized

```json
{
    "code": "no auth header",
    "description": "Authorization header is missing"
}
```

Status: 403 Forbidden

```json
{
    "Error": "Invalid project_owner for this project_id"
}
```

Status: 403 Forbidden

```json
{
    "Error": "Client is not assigned to a project"
}
```

Status: 403 Forbidden

```json
{
    "Error": "Client is not assigned to project with project_id"
}
```

Status: 404 Not Found

```json
{
    "Error": "No project with project_id has a client with client_id"
}
```

Request with unsupported method such as POST, PATCH, GET for endpoint

Status: 405 Method Not Allowed

Response Headers
Content-Type: text/html
Allow: OPTIONS, PUT, DELETE, HEAD

▶ **Response Body**

```html
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2 Final//EN">
<title>405 Method Not Allowed</title>
<h1>Method Not Allowed</h1>
<p>The method is not allowed for the requested URL.</p>
```

PROJECTS and TEAM MEMBERS

1. Assign a Team Member to a User's Project (All, PUT)

Allows you to assign a Team Member to a Project.

PUT /projects/:project_id/team_members/:team_member_id

Request

Path Parameters

Name	Description
project_id	ID of the project
team_member_id	ID of the team_member

Request Headers

Request Header	MIME Type	Required?
Content-Type	application/ JSON	No
Accept	application/JSON	No

Authentication

- Required: Bearer Token (Valid JWT necessary)

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

None

Request Header Example

None

Request Body Example

None

Response

Response Body Format

Response body MIME Types

- JSON (application/JSON)

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	
Failure	401 Unauthorized	Client (end-user) sent an invalid JWT or did not provide a JWT.
Failure	403 Forbidden	- User is not the project owner. - Team Member with team_member_id is already assigned to another project or is already assigned to the Project with project_id.
Failure	404 Not Found	User provided an invalid project_id or team_member_id
Failure	405 Method Not Allowed	Only PUT, DELETE methods is allowed for the URL /projects/:project_id/team_members/:team_member_id. Allow header will have values of methods that are allowed. POST, GET, PATCH methods are not allowed supported in /projects/:project_id/team_members/:team_member_id

Response Examples

Status: 204 No Content

Invalid JWT or no JWT provided.
Status: 401 Unauthorized

```
{
    "code": "no auth header",
    "description": "Authorization header is missing"
}
```

Status: 403 Forbidden

```
{
    "Error": "Invalid project_owner for this project_id"
}
```

Status: 403 Forbidden

```
{
    "Error": "The team_member is already assigned a project"
}
```

Status: 404 Not Found

```
{
    "Error": "The specified project and/or team_member does not exist"
}
```

Request with unsupported method such as POST, PATCH, GET for endpoint

Status: 405 Method Not Allowed

Response Headers
Content-Type: text/html
Allow: OPTIONS, PUT, DELETE, HEAD

▶ Response Body

```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2 Final//EN">
<title>405 Method Not Allowed</title>
<h1>Method Not Allowed</h1>
<p>The method is not allowed for the requested URL.</p>↵
```

2. Remove a Team Member from a User's Project

Allows you to delete a Team Member from a User's Project

DELETE /projects/:project_id/clients/:team_member_id

Request

Path Parameters

Name	Description
project_id	ID of the project
client_id	ID of the client

Request Headers

Request Header	MIME Type	Required?
Content-Type	application/ JSON	No
Accept	application/JSON	No

Authentication

- Required: Bearer Token (Valid JWT necessary)

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

None

Request Header Example

None

Request Body Example

None

Response

Response Body Format

Response body MIME Types

- JSON (application/JSON)

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	
Failure	401 Unauthorized	Client (end-user) sent an invalid JWT or did not provide a JWT.
Failure	403 Forbidden	- Team_member is not assigned to a project. - User is not the project owner. - Team_Member with team_member_id's assigned project does not match the project with project_id and vice versa.
Failure	404 Not Found	User provided an invalid project_id or client_id
Failure	405 Method Not Allowed	Only PUT, DELETE methods is allowed for the URL /projects/:project_id/clients/:client_id. Allow header will have values of methods that are allowed. POST, GET, PATCH methods are not allowed supported in the URL /projects/:project_id/clients/:client_id..

Response Examples

Success

Status: 204 No Content

Failure

Invalid JWT or no JWT provided.
Status: 401 Unauthorized

``
{
    "code": "no auth header",
    "description": "Authorization header is missing"
}
``

Status: 403 Forbidden

``
{
    "Error": "Invalid project_owner for this project_id"
}
``

Status: 403 Forbidden

``
{
    "Error": "No project with this project_id is assigned with a team_member with this team_member_id"
}
``

Status: 404 Not Found

``
{
    "Error": "No project with project_id has a team_member with team_member_id"
}
``

Request with unsupported method such as POST, PATCH, GET for endpoint
Status: 405 Method Not Allowed Response Headers Content-Type: text/html **Allow: OPTIONS, PUT, DELETE, HEAD** ▶ **Response Body** ``` <!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2 Final//EN"> <title>405 Method Not Allowed</title> Method Not Allowed   The method is not allowed for the requested URL. ↵ ```