

Portfolio Assignment: Final Project

CS 493: Cloud Application Development

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PROJECT URL

Used for Account Creation, Sign-in and API Endpoints

<https://kg-final9.ue.r.appspot.com/>

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Change log

Version	Change	Date
1.0	Initial version.	April 11 2021
2.0	Version updated to contain API Documentation for George Kochera's Assignment #4 - Intermediate REST API	April 21 2021
3.0	Version updated to contain API Documentation for George Kochera's Assignment #5 - Advanced REST Features	April 29 2021
4.0	Version updated to contain API Documentation for George Kochera's Final Project – Portfolio Project	May 31 2021

IMPORTANT – Document Guide

Throughout this guide there are two important things to note.

1. The term Google Subscriber ID and 'sub' value are synonymous. Our application uses the 'sub' value of the decoded JSON Web Token issued by Google which is obtained when a user authenticates with our application using Google Third-Party Authentication. Users are identified uniquely with this value.
2. The following legend provides details on the three levels of protection in this application:

Symbol	Description
	Authentication is required. Endpoint requires that the JWT is associated with a registered user.
	Authentication is required under special conditions such as when modifying a Load that is on a Boat.
	Authentication is NOT required.

Data Model

The 'self' property will appear in API calls but is not shown in these tables since it is not saved to the database. The 'self' property is generated at the time the API call is made.

Boat

Property Name	Description	Type	Required	Valid Values
id	The id of the boat. Automatically generated by Google Cloud Datastore.	String	No	An integer as a string. Not settable by the user.
name	The name of the boat.	String	Yes	Must: <ul style="list-style-type: none">• Be between 1-40 alphanumeric characters• Not start with a space or number• Contain No Special Characters e.g. "Space Dreambus"
type	The type of the boat.	String	Yes	Must: <ul style="list-style-type: none">• Be between 1-40 alphanumeric characters• Not start with a space or number• Contain No Special Characters e.g. "Frigate"
length	The length of the boat in feet.	Integer	Yes	Any numeric value that is within the range of standard JavaScript integers. e.g. 400
loads	Contains the keys of all Load objects currently "on" the boat.	Array of Google Datastore Keys	No	Contains Google Datastore Keys for Load Objects stored in an array. Not directly settable by the user.
owner	The owner of the boat's "sub" (subscriber ID) from their Google Account.	String	No	An integer as a string. Not directly settable by the user. Will be set to the 'sub' value of the JWT used to create the boat.

Load

Property Name	Description	Type	Required	Valid Values
id	The id of the load. Automatically generated by Google Cloud Datastore.	String	No	An integer as a string. Not settable by the user.
volume	The unitless size of the content of the load.	Integer	Yes	Any numeric value that is within the range of standard JavaScript integers. e.g. 7000
carrier	Holds the reference to the name of the carrier the load is currently on. If the load is not on a carrier, this value is null.	Google Datastore Key	No	Must be a Google Datastore Key. Not settable directly by the user.
content	A meaningful name describing the load contents.	String	Yes	Must be text, unconstrained otherwise. e.g. "Paper Towels"
creation_date	Format MM/DD/YYYY. Set by the user when the load is created.	String	Yes	Date validation is not implemented; the user is expected to supply a date conforming to the requested format. e.g. "10/22/2012"

User

Property Name	Description	Type	Required	Valid Values
id	The id of the load. Automatically generated by Google Cloud Datastore.	String	No	Set by the application and is not modifiable by the user.
sub	The value of the User's Google Subscriber ID, retrieved from their JWT when they first authenticate with the server.	String	No	Set by the application and is not modifiable by the user.
first_name	The first name associated with the User's Google Account	String	No	Set by the application and is not modifiable by the user.
last_name	The last name associated with the User's Google Account	String	No	Set by the application and is not modifiable by the user.
account_created	Format MM/DD/YYYY. Indicates the date the user first registered with the service.	String	No	Set by the application and is not modifiable by the user.

Relationships between Entities

Users are related to None to Many Boats. A User can be associated with zero, one or many Boats. The 'sub' field of User is used to populate the 'owner' field of a created Boat.

Boats are related to None to Many Loads. A Boat can be associated with zero, one or many Loads. The Loads field of the Boat starts as an empty array. This array is filled with Google Datastore Load keys which are transposed to the actual Load object when API endpoints displaying this field are called. Loads can be removed from a Boat as well.

Loads are related to Zero or One Boats. A Load can be on one Boat (but not more) or No Boats. The 'carrier' field of the Load object contains the Google Datastore key of the Boat the Load is on. In the event a Load is not on a Boat, this field is set to null.

User Entity Details

The unique identifier used to distinguish Users from each other is the 'sub' value from their Google Credentials (parsed when the application is provided with a valid JWT issued by Google). This value is stored in the 'sub' field during account creation. Google guarantees this value to be unique so for the purposes of this assignment it is treated as unique

All endpoints for manipulating Boats including loading and unloading a Boat are protected endpoints. This means that a user must supply a valid JWT, issued by Google and be registered with our application. The registration process requires that the user visit the web applications web front-end, Sign-up using their Google credentials (which adds them as a User for this API), then use the issued JWT as the Bearer token in the Authorization header for any API HTTP requests to protected endpoints:

Authorization: Bearer <JWT>

Where <JWT> is replaced with the issued JWT from our web application. Subsequent visits to the web application require that the user Login instead of Signup, since Logging in will not add repeated entries to the User kind in the Google Datastore database. An error-checking mechanism is in place to prevent such behavior and users receive a meaningful error message when this condition occurs (such as being told to use the Login function when they have already signed up.)











When any request is made to our application's protected endpoints, the JWT is parsed, checked for authenticity and validity with Google, and if valid, the 'sub' value of the decrypted token is compared with the 'sub' values of registered Users for our application. If the User exists, the request is allowed to proceed. The 'sub' value of the token is mapped to the 'sub' value of the User entity in the database.







Users are related to Boats because the 'sub' value of User will always be associated to the 'owner' value of the Boat which the authenticated User created. Furthermore, any operation on a Boat specifically requires that the 'sub' value of an authenticated JWT match the 'owner' value of the Boat object before the operation is allowed to proceed.

The specification did not stipulate that both non-user entities had to be related to the User, therefore Loads are unprotected and not associated to any particular User. There is one caveat to this. Loads that are embarked upon a Boat are treated as protected. Loads embarked upon a Boat cannot be deleted or changed other than by the owner of the Boat. Once a Load is disembarked, it is unprotected.

Endpoints Overview

This application has 16 endpoints, not including the web browser endpoints which serve HTML to introduce viewers to the application, allow for user registration and issue JWTs.

Protection	Method	Endpoint	Description
Loads			
Unprotected endpoints with no authentication required.			
<i>*Protected while Load is embarked upon a Boat</i>			
	POST	/loads	Add a load
	GET	/loads	Get all loads, paginated, 5 per page
	GET	/loads/:load_id	Get a specific load identified by id number
	PUT*	/loads/:load_id	Change all details of the load identified by id number
	PATCH*	/loads/:load_id	Change only some details of the load identified by id number
	DELETE*	/loads/:load_id	Delete the load identified by id number
Boats			
Protected endpoints with Bearer Token (JWT) Authentication required.			
	POST	/boats	Add a boat
	GET	/boats	Get all boats, paginated, 5 per page
	GET	/boats/:boat_id	Get a specific boat identified by id number
	PUT	/boats/:boat_id	Change all details of the boat identified by id number

	PATCH	/boats/:boat_id	Change only some details of the boat identified by id number
	DELETE	/boats/:boat_id	Delete the boat identified by id number
	PUT	/boats/:boat_id/loads/:load_id	Add a load identified by its id number to a boat identified by its respective id number
	DELETE	/boats/:boat_id/loads/:load_id	Remove a load identified by its id number from a boat identified by its respective id number
Users Unprotected endpoints			
	GET	/users	Get all users, not paginated
	GET	/users/:user_id	Get a specific user identified by their Google Credential Subscriber ID ('sub' value).

Create a Boat

Allows you to create a new boat. Boats contain no loads by default.

POST /boats

Request

Path Parameters

None

Request Headers

Name	Value	Notes	Required?
Content-Type	application/json		Yes
Accept	application/json	*/* is also acceptable	Yes
Authorization	Bearer <JWT>	<JWT> is a JSON Web Token generated by the web application when the user logs in.	Yes

Request Body

Required

Request Body MIME Types

application/json

Request JSON Attributes

Name	Type	Description	Required?
name	String	The name of the boat. Must be between 1-40 characters, contain no special characters, and must not begin with a space.	Yes
type	String	The type of the boat. E.g., Sailboat, Catamaran, etc. Must be between 1-40 characters, contain no special characters, and must not begin with a space.	Yes
length	Integer	Length of the boat in feet. Must be an integer.	Yes

Request Body Example

```
{
  "name": "Sea Witch",
  "type": "Catamaran",
  "length": 28
}
```

Response

Response Headers

Name	Value	Notes
Content-Type	application/json	

Response Body

Always

Response Body MIME Type

application/json

Response Statuses

Outcome	Status Code	Notes
Success	201 Created	
Failure	400 Bad Request	Can happen if: <ul style="list-style-type: none">• A 'Content-Type' of 'application/json' was specified in the request header but invalid JSON was in the body of the request.• The body of the request contained attributes other than 'length', 'type', and 'name'.• The body of the request did not contain all three attributes 'length', 'type' and 'name'.• The body of the request had a 'length', 'type', or 'name' that was invalid.
Failure	401 Unauthorized	Can happen if: <ul style="list-style-type: none">• No JWT provided in Authorization request header• Bad/Malformed JWT provided in Authorization request header• Expired JWT provided in Authorization request header
Failure	403 Forbidden	Can happen if: <ul style="list-style-type: none">• A valid JWT was provided but the 'sub' (Subscriber ID) associated with the JWT was not registered with the application.• Another Boat exists with the same name.
Failure	406 Not Acceptable	The 'Accept' the client indicated in its request headers did not include 'application/json'.
Failure	415 Unsupported Media Type	The 'Content-Type' the client indicated in its request headers was not 'application/json' and there was data in the request body.

Response Examples

Success

Status: 201 Created

```
{
  "id": "abc123",
  "name": "Sea Witch",
  "type": "Catamaran",
  "length": 28,
  "loads": [],
  "owner": "0238490238409"
  "self": "https://<your-app>/boats/abc123"
}
```

Success Response Attributes

Attribute	Datatype	Description
id	String	The id of the boat.
name	String	The name of the boat.
type	String	The type of the boat.
length	Integer	The length of the boat.
loads	Array	Holds an array of Load objects.
owner	String	The Google Subscriber ID ('sub' value) of the Boat's Owner.
self	String	The URL which provides direct access to the boat via GET request.

Failure

Status: 400 Bad Request

```
{
  "Error": "A Content-Type of application/json was specified in the header but there was
a Syntax Error in the body of the request."
}

- OR -

{
  "Error": "* is not a valid property for this endpoint. Check your request body for extra
attributes."
}
// * will be replaced with the offending property name from the request body.

- OR -

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

- OR -

{
  "Error": "The boat * is invalid. Names must be 1-40 alphanumeric characters long,
contain no special symbols except spaces."
}
// * will be replaced with 'name' or 'type' depending on the offending attribute.

- OR -

{
  "Error": "The boat length is invalid. Lengths must be an integer."
}
```

Status: 401 Unauthorized

```
{
  "Error": "You must be authenticated to perform this action."
}
```

Status: 403 Forbidden

```
{
  "Error": "There is already a boat with this name."
}

- OR -

{
  "Error": "You must be a registered user in order to create a new boat."
}
```

Status: 406 Not Acceptable

```
{
  "Error": " This endpoint only supports a Content-Type of application/json,      please
           check your HTTP Accept headers."
}
```

Status: 415 Unsupported Media Type

```
{
  "Error": " Content-Type of * is not supported by this endpoint."
}
// * will be the content type that was in the request header.
```


Get all Boats

List all the boats for the currently authenticated User. If there are more than 5 boats, the results are paginated with no more than 5 per page.

```
GET /boats?page=*
```

Request

Path Parameters

None

Query String Parameters

Name	Type	Description
page	Integer	OPTIONAL - Page number of results to view. The query parameter can be omitted altogether and the 1st page of results will be returned by default. This implementation mimics how GitHub implements pagination in their API. A page number that would attempt to retrieve results beyond the end of the result set will return an empty array. Users should only use page numbers when they are provided as a legitimate API response.

Request Headers

Name	Value	Notes	Required?
Accept	application/json	*/* is also acceptable	Yes
Authorization	Bearer <JWT>	<JWT> is a JSON Web Token generated by the web application when the user logs in.	Yes

Request Body

None

Response

Response Headers

Name	Value	Notes
Content-Type	application/json	

Response Body

Always

Response Body MIME Type

application/json

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	400 Bad Request	Can happen if: <ul style="list-style-type: none">• A 'Content-Type' of 'application/json' was specified in the request header but invalid JSON was in the body of the request.
Failure	401 Unauthorized	Can happen if: <ul style="list-style-type: none">• No JWT provided in Authorization request header• Bad/Malformed JWT provided in Authorization request header• Expired JWT provided in Authorization request header
Failure	406 Not Acceptable	The 'Accept' the client indicated in its request headers did not include 'application/json'.
Failure	415 Unsupported Media Type	The 'Content-Type' the client indicated in its request headers was not 'application/json' and there was data in the request body.

Response Examples

Success

Status: 200 OK

```
[
  {
    "id": "5669079989878784",
    "name": "Winding Folly",
    "type": "Monitor",
    "length": 34,
    "loads": [],
    "owner": "117952375700092671186",
    "self": "https://<your-app>/boats/5669079989878784"
  },
  {
    "id": "5686696536440832",
    "name": "Black Widow",
    "type": "Waverunner",
    "length": 12,
    "loads": [],
    "owner": "117952375700092671186",
    "self": "https://<your-app>/boats/5686696536440832"
  },
  {
    "id": "5703829630746624",
    "name": "Key Nine Five",
    "type": "Pontoon",
    "length": 36,
    "loads": [],
    "owner": "117952375700092671186",
    "self": "https://<your-app>/boats/5703829630746624"
  },
  {
    "id": "5707651547660288",
    "name": "Streaming Wheel",
    "type": "Destroyer",
    "length": 36,
    "loads": [],
    "owner": "117952375700092671186",
    "self": "https://<your-app>/boats/5707651547660288"
  },
  {
    "id": "5740688905863168",
    "name": "Strong Mango",
    "type": "Sailboat",
    "length": 56,
    "loads": [],
    "owner": "117952375700092671186",
    "self": "https://<your-app>/boats/5740688905863168"
  },
  {
    "next": "https://<your-app>/boats?page=2"
  },
  {
    "totalUserBoats": 6,
    "totalBoats": 6
  }
]
```

Success Response Attributes

Attribute	Datatype	Description
id	String	The id of the boat.
name	String	The name of the boat.
type	String	The type of the boat.
length	Integer	The unitless length of the boat.
loads	Array of Loads	This array contains the representation of each Load that is on the Boat within an Array. Appears as an empty array when there are no Loads on the boat. For each Load, all attributes are displayed except Carrier (since this would be circular). See 'Get a Load' for Load attributes.
owner	String	The Google Subscriber ID of the authenticated user that created the Boat.
self	String	The URL which provides direct access to the load via GET request.
next	String	Appears when there are more than 5 boats in the result returned by this endpoint. URL for which a GET request to will return up to the next 5 results.
totalUserBoats	Integer	The total number of Boats which belong to the authenticated User.
totalBoats	Integer	The total number of Boats in the database (irrespective of User).

Failure

Status: 400 Bad Request <pre>{ "Error": "A Content-Type of application/json was specified in the header but there was a Syntax Error in the body of the request." }</pre>
Status: 401 Unauthorized <pre>{ "Error": "You must be authenticated to perform this action." }</pre>
Status: 406 Not Acceptable <pre>{ "Error": " This endpoint only supports a Content-Type of application/json, please check your HTTP Accept headers." }</pre>
Status: 415 Unsupported Media Type <pre>{ "Error": " Content-Type of * is not supported by this endpoint." } // * will be the content type that was in the request header.</pre>

Get a Single Boat

List a single boat.

GET /boats/:boat_id

Request

Path Parameters

Name	Type	Description
boat_id	String	ID of the boat.

Request Headers

Name	Value	Notes	Required?
Accept	application/json	*/* is also acceptable	Yes
Authorization	Bearer <JWT>	<JWT> is a JSON Web Token generated by the web application when the user logs in.	Yes

Request Body

None

Response

Response Headers

Name	Value	Notes
Content-Type	application/json	

Response Body

Always

Response Body MIME Type

application/json

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	400 Bad Request	Can happen if: <ul style="list-style-type: none">A 'Content-Type' of 'application/json' was specified in the request header but invalid JSON was in the body of the request.An invalid boat_id was specified such as null
Failure	401 Unauthorized	Can happen if: <ul style="list-style-type: none">No JWT provided in Authorization request headerBad/Malformed JWT provided in Authorization request header

		<ul style="list-style-type: none"> Expired JWT provided in Authorization request header
Failure	403 Forbidden	Can happen if: <ul style="list-style-type: none"> A valid JWT was provided but the 'sub' (Subscriber ID) associated with the JWT did not match the 'owner' of the requested Boat.
Failure	404 Not Found	The boat_id specified was not found in the database
Failure	406 Not Acceptable	The 'Accept' the client indicated in its request headers did not include 'application/json'.
Failure	415 Unsupported Media Type	The 'Content-Type' the client indicated in its request headers was not 'application/json' and there was data in the request body.

Response Examples

Success

Status: 200 OK
<pre>{ "id": "5740688905863168", "name": "Strong Mango", "type": "Sailboat", "length": 56, "loads": [], "owner": "117952375700092671186", "self": "https://<your-app>/boats/5740688905863168" }</pre>

Success Response Attributes

Attribute	Datatype	Description
id	String	The id of the boat.
name	String	The name of the boat.
type	String	The type of the boat.
length	Integer	The unitless length of the boat.
loads	Array of Loads	This array contains the representation of each Load that is on the Boat within an Array. Appears as an empty array when there are no Loads on the boat. For each Load, all attributes are displayed except Carrier (since this would be circular). See 'Get a Load' for Load attributes.
owner	String	The Google Subscriber ID of the authenticated user that created the Boat.
self	String	The URL which provides direct access to the load via GET request.

Failure

Status: 400 Bad Request

```
{
  "Error": "A Content-Type of application/json was specified in the header but there was
a Syntax Error in the body of the request."
}

- OR -

{
  "Error": "The boat_id you specified is not valid."
}
```

Status: 401 Unauthorized

```
{
  "Error": "You must be authenticated to perform this action."
}
```

Status: 403 Forbidden

```
{
  "Error": "Boats are protected entities that are only viewable by the owner. Verify you
are using the correct JWT."
}
```

Status: 404 Not Found

```
{
  "Error": "No boat with this boat_id exists"
}
```

Status: 406 Not Acceptable

```
{
  "Error": " This endpoint only supports a Content-Type of application/json,      please
check your HTTP Accept headers."
}
```

Status: 415 Unsupported Media Type

```
{
  "Error": " Content-Type of * is not supported by this endpoint."
}
// * will be the content type that was in the request header.
```

Change a Boat (Completely)

Changes all attributes of a boat.

PUT /boats/:boat_id

Request

Path Parameters

Name	Type	Description
boat_id	String	ID of the boat.

Request Headers

Name	Value	Notes	Required?
Accept	application/json	*/* is also acceptable	Yes
Authorization	Bearer <JWT>	<JWT> is a JSON Web Token generated by the web application when the user logs in.	Yes

Request Body

Required

Request Body MIME Types

application/json

Request JSON Attributes

Name	Type	Description	Required?
name	String	The name of the boat. Must be between 1-40 characters, contain no special characters, and must not begin with a space.	Yes
type	String	The type of the boat. E.g., Sailboat, Catamaran, etc. Must be between 1-40 characters, contain no special characters, and must not begin with a space.	Yes
length	Integer	Length of the boat in feet. Must be an integer.	Yes

Request Body Example

```
{
  "name": "Grey Thunder",
  "type": "Schooner",
  "length": 340
}
```


Response

Response Headers

Name	Value	Notes
Content-Type	application/json	
Location	URI of the new Boat object.	Only set on a 303 response code.
Allow	'GET, POST'	Only set on a 405 response code.

Response Body

Only on Error

Response Body MIME Type

application/json

Response Statuses

Outcome	Status Code	Notes
Success	303 See Other	Location Header in HTTP Response will contain the link of the new Boat resource.
Failure	400 Bad Request	Can happen if: <ul style="list-style-type: none">• A 'Content-Type' of 'application/json' was specified in the request header but invalid JSON was in the body of the request.• The body of the request contained attributes other than 'length', 'type', and 'name'.• The body of the request did not contain all three attributes 'length', 'type' and 'name'.• The body of the request had a 'length', 'type', or 'name' that was invalid.• An invalid boat_id was specified such as null
Failure	401 Unauthorized	Can happen if: <ul style="list-style-type: none">• No JWT provided in Authorization request header• Bad/Malformed JWT provided in Authorization request header• Expired JWT provided in Authorization request header
Failure	403 Forbidden	Can happen if: <ul style="list-style-type: none">• A valid JWT was provided but the 'sub' (Subscriber ID) associated with the JWT did not match the 'owner' of the requested Boat.• Another boat already exists with the desired new name.
Failure	404 Not Found	The boat_id specified was not found in the database
Failure	405 Method Not Allowed	No boat_id was specified indicating an attempt to update all Boats.

Failure	406 Not Acceptable	The 'Accept' the client indicated in its request headers did not include 'application/json'.
Failure	415 Unsupported Media Type	The 'Content-Type' the client indicated in its request headers was not 'application/json' and there was data in the request body.

Response Examples

Success

Status: 303 See Other

HTTP Response Header => Location: https://<your-app>/boats/:boat_id

Failure

Status: 400 Bad Request

```
{
  "Error": "A Content-Type of application/json was specified in the header but there was
a Syntax Error in the body of the request."
}

- OR -

{
  "Error": "* is not a valid property for this endpoint. Check your request body for extra
attributes."
}
// * will be replaced with the offending property name from the request body.

- OR -

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

- OR -

{
  "Error": "The boat * is invalid. Names must be 1-40 alphanumeric characters long,
contain no special symbols except spaces."
}
// * will be replaced with 'name' or 'type' depending on the offending attribute.

- OR -

{
  "Error": "The boat length is invalid. Lengths must be an integer."
}

- OR -

{
```

<pre> "Error": "The boat_id you specified is not valid." } - OR - { "Error": " PUTs at this endpoint require that all fields are updated. Use PATCH for partial updates." } </pre>
<p>Status: 401 Unauthorized</p> <pre> { "Error": "You must be authenticated to perform this action." } </pre>
<p>Status: 403 Forbidden</p> <pre> { "Error": "This boat_id exists but you are not the owner." } - OR - { "Error": "There is already a boat with this name." } </pre>
<p>Status: 404 Not Found</p> <pre> { "Error": "A boat with this boat_id was not found." } </pre>
<p>Status: 405 Method Not Allowed</p> <pre> { "Error": "You cannot update all boats." } </pre>
<p>Status: 406 Not Acceptable</p> <pre> { "Error": " This endpoint only supports a Content-Type of application/json, please check your HTTP Accept headers." } </pre>
<p>Status: 415 Unsupported Media Type</p> <pre> { "Error": " Content-Type of * is not supported by this endpoint." } // * will be the content type that was in the request header. </pre>

Change a Boat (Partially)

Changes only some attributes of a boat.

PATCH /boats/:boat_id

Request

Path Parameters

Name	Type	Description
boat_id	String	ID of the boat.

Request Headers

Name	Value	Notes	Required?
Accept	application/json	*/* is also acceptable	Yes
Authorization	Bearer <JWT>	<JWT> is a JSON Web Token generated by the web application when the user logs in.	Yes

Request Body

Required

Request Body MIME Types

application/json

Request JSON Attributes

Name	Type	Description	Required?
name	String	The name of the boat. Must be between 1-40 characters, contain no special characters, and must not begin with a space.	Yes*
type	String	The type of the boat. E.g., Sailboat, Catamaran, etc. Must be between 1-40 characters, contain no special characters, and must not begin with a space.	Yes*
length	Integer	Length of the boat in feet. Must be an integer.	Yes*

*At least one is required, but not all.

Request Body Example

```
{
  "name": "Grey Thunder"
}
```

Response

Response Headers

Name	Value	Notes
Content-Type	application/json	
Allow	'GET, POST'	Only set on a 405 response code.

Response Body

Always

Response Body MIME Type

application/json

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	400 Bad Request	Can happen if: <ul style="list-style-type: none">• A 'Content-Type' of 'application/json' was specified in the request header but invalid JSON was in the body of the request.• The body of the request contained attributes other than 'length', 'type', and 'name'.• The body of the request did not contain at least one of the attributes 'length', 'type' or 'name'.• The body of the request had a 'length', 'type', or 'name' that was invalid.• An invalid boat_id was specified such as null
Failure	401 Unauthorized	Can happen if: <ul style="list-style-type: none">• No JWT provided in Authorization request header• Bad/Malformed JWT provided in Authorization request header• Expired JWT provided in Authorization request header
Failure	403 Forbidden	Can happen if: <ul style="list-style-type: none">• A valid JWT was provided but the 'sub' (Subscriber ID) associated with the JWT did not match the 'owner' of the requested Boat.• Another boat already exists with the desired new name.
Failure	404 Not Found	The boat_id specified was not found in the database
Failure	405 Method Not Allowed	No boat_id was specified indicating an attempt to update all Boats.
Failure	406 Not Acceptable	The 'Accept' the client indicated in its request headers did not include 'application/json'.

Failure	415 Unsupported Media Type	The 'Content-Type' the client indicated in its request headers was not 'application/json' and there was data in the request body.
---------	----------------------------	---

Response Examples

Success

Status: 200 OK

```
{
  "id": "abc123",
  "name": "Grey Thunder",
  "type": "Catamaran",
  "length": 28,
  "loads": [],
  "owner": "0238490238409"
  "self": "https://<your-app>/boats/abc123"
}
```

Failure

Status: 400 Bad Request

```
{
  "Error": "A Content-Type of application/json was specified in the header but there was
a Syntax Error in the body of the request."
}

- OR -

{
  "Error": "* is not a valid property for this endpoint. Check your request body for extra
attributes."
}
// * will be replaced with the offending property name from the request body.

- OR -

{
  "Error": "No properties of the boat were included in the body of the request."
}

- OR -

{
  "Error": "The boat * is invalid. Names must be 1-40 alphanumeric characters long,
contain no special symbols except spaces."
}
// * will be replaced with 'name' or 'type' depending on the offending attribute.

- OR -

{
```

<pre> "Error": "The boat length is invalid. Lengths must be an integer." } - OR - { "Error": "The boat_id you specified is not valid." } </pre>
Status: 401 Unauthorized <pre> { "Error": "You must be authenticated to perform this action." } </pre>
Status: 403 Forbidden <pre> { "Error": "This boat_id exists but you are not the owner." } - OR - { "Error": "There is already a boat with this name." } </pre>
Status: 404 Not Found <pre> { "Error": "A boat with this boat_id was not found." } </pre>
Status: 405 Method Not Allowed <pre> { "Error": "You cannot update all boats." } </pre>
Status: 406 Not Acceptable <pre> { "Error": " This endpoint only supports a Content-Type of application/json, please check your HTTP Accept headers." } </pre>
Status: 415 Unsupported Media Type <pre> { "Error": " Content-Type of * is not supported by this endpoint." } // * will be the content type that was in the request header. </pre>

Delete a Boat

Deletes a single boat.

DELETE /boats/:boat_id

Request

Path Parameters

Name	Type	Description
boat_id	String	ID of the boat.

Request Headers

Name	Value	Notes	Required?
Accept	application/json	*/* is also acceptable	No
Authorization	Bearer <JWT>	<JWT> is a JSON Web Token generated by the web application when the user logs in.	Yes

Request Body

None

Response

Response Headers

Name	Value	Notes
Content-Type	application/json	
Allow	'GET, POST'	Only set on a 405 response code.

Response Body

Only on Error

Response Body MIME Type

application/json

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	
Failure	400 Bad Request	Can happen if: <ul style="list-style-type: none">A 'Content-Type' of 'application/json' was specified in the request header but invalid JSON was in the body of the request.An invalid boat_id was specified such as null
Failure	401 Unauthorized	Can happen if: <ul style="list-style-type: none">No JWT provided in Authorization request headerBad/Malformed JWT provided in Authorization request header

		<ul style="list-style-type: none"> Expired JWT provided in Authorization request header
Failure	403 Forbidden	Can happen if: <ul style="list-style-type: none"> A valid JWT was provided but the 'sub' (Subscriber ID) associated with the JWT did not match the 'owner' of the requested Boat.
Failure	404 Not Found	The boat_id specified was not found in the database
Failure	405 Method Not Allowed	No boat_id was specified indicating an attempt to delete all Boats.
Failure	415 Unsupported Media Type	The 'Content-Type' the client indicated in its request headers was not 'application/json' and there was data in the request body.

Response Examples

Success

Status: 204 No Content

// EMPTY BODY //

Failure

Status: 400 Bad Request

```
{
  "Error": "A Content-Type of application/json was specified in the header but there was a Syntax Error in the body of the request."
}
```

- OR -

```
{
  "Error": "The boat_id you specified is not valid."
}
```

Status: 401 Unauthorized

```
{
  "Error": "You must be authenticated to perform this action."
}
```

Status: 403 Forbidden

```
{
  "Error": "This boat_id exists but you are not the owner."
}
```

Status: 404 Not Found

```
{
  "Error": "No boat with this boat_id exists"
}
```

Status: 405 Method Not Allowed

```
{  
  "Error": "You cannot delete all boats."  
}
```

Status: 415 Unsupported Media Type

```
{  
  "Error": " Content-Type of * is not supported by this endpoint."  
}  
// * will be the content type that was in the request header.
```

Add a Load to a Boat

Allows you to place a load on a boat. This will update the carrier for the load and add the load to the boat's list of loads.

```
PUT /boats/:boat_id/loads/:load_id
```

Request

Path Parameters

Name	Type	Description
boat_id	String	ID of the boat
load_id	String	ID of the load

Request Headers

Name	Value	Notes	Required?
Accept	application/json	*/* is also acceptable	No
Authorization	Bearer <JWT>	<JWT> is a JSON Web Token generated by the web application when the user logs in.	Yes

Request Body

None

Response

Response Body

Only on Error

Response Body MIME Type

application/json

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	
Failure	400 Bad Request	Can occur if: <ul style="list-style-type: none">• An invalid boat_id was specified such as null• An invalid load_id was specified such as null• A 'Content-Type' of 'application/json' was specified in the request header but invalid JSON was in the body of the request.
Failure	401 Unauthorized	Can happen if: <ul style="list-style-type: none">• No JWT provided in Authorization request header• Bad/Malformed JWT provided in Authorization request header

		<ul style="list-style-type: none"> Expired JWT provided in Authorization request header
Failure	403 Forbidden	Can occur if: <ul style="list-style-type: none"> The load_id is already assigned to this boat or another boat. A user bearing a JWT corresponding to a Google Subscriber ID is attempting to embark cargo on a boat they do not own.
Failure	404 Not Found	Can occur if: <ul style="list-style-type: none"> The specified boat_id does not exist The specified load_id does not exist Both the load_id and boat_id do not exist
Failure	415 Unsupported Media Type	The 'Content-Type' the client indicated in its request headers was not 'application/json' and there was data in the request body.

Response Examples

Failure

Status: 400 Bad Request

```
{
  "Error": "A Content-Type of application/json was specified in the header but there was a Syntax Error in the body of the request."
}
```

- OR -

```
{
  "Error": "The boat_id you specified is not valid."
}
```

- OR -

```
{
  "Error": "The load_id you specified is not valid."
}
```

Status: 401 Unauthorized

```
{
  "Error": "You must be authenticated to perform this action."
}
```

Status: 403 Forbidden

```
{
  "Error": "The specified load has already been assigned to this boat."
}
```

- OR -

```
{
  "Error": "The specified load has already been assigned to another boat."
}
```

- OR -

```
{
  "Error": "You cannot add a load to someone else's boat."
}
```

Status: 404 Not Found

```
{
  "Error": "The specified boat does not exist"
}
```

- OR -

```
{
  "Error": "The specified load does not exist"
}
```

- OR -

```
{
  "Error": " The specified boat and load does not exist"
}
```

Status: 415 Unsupported Media Type

```
{
  "Error": " Content-Type of * is not supported by this endpoint."
}
// * will be the content type that was in the request header.
```

Remove a Load from a Boat

Allows you to remove a load from a boat. This will update the carrier for the load and remove the load from the boat's list of loads.

```
DELETE /boats/:boat_id/loads/:load_id
```

Request

Path Parameters

Name	Type	Description
boat_id	String	ID of the boat
load_id	String	ID of the load

Request Headers

Name	Value	Notes	Required?
Accept	application/json	*/* is also acceptable	No
Authorization	Bearer <JWT>	<JWT> is a JSON Web Token generated by the web application when the user logs in.	Yes

Request Body

None

Response

Response Body

Only on Error

Response Body MIME Type

application/json

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	
Failure	400 Bad Request	Can occur if: <ul style="list-style-type: none">• An invalid boat_id was specified such as null• An invalid load_id was specified such as null• A 'Content-Type' of 'application/json' was specified in the request header but invalid JSON was in the body of the request.
Failure	401 Unauthorized	Can happen if: <ul style="list-style-type: none">• No JWT provided in Authorization request header• Bad/Malformed JWT provided in Authorization request header

		<ul style="list-style-type: none"> Expired JWT provided in Authorization request header
Failure	403 Forbidden	Can occur if: <ul style="list-style-type: none"> The load_id is not on this boat. A user bearing a JWT corresponding to a Google Subscriber ID is attempting to disembark cargo from a boat they do not own.
Failure	404 Not Found	Can occur if: <ul style="list-style-type: none"> The specified boat_id does not exist The specified load_id does not exist Both the load_id and boat_id do not exist
Failure	415 Unsupported Media Type	The 'Content-Type' the client indicated in its request headers was not 'application/json' and there was data in the request body.

Response Examples

Failure

Status: 400 Bad Request

```
{
  "Error": "A Content-Type of application/json was specified in the header but there was a Syntax Error in the body of the request."
}
```

- OR -

```
{
  "Error": "The boat_id you specified is not valid."
}
```

- OR -

```
{
  "Error": "The load_id you specified is not valid."
}
```

Status: 401 Unauthorized

```
{
  "Error": "You must be authenticated to perform this action."
}
```

Status: 403 Forbidden

```
{
  "Error": "The specified load is not on this boat."
}
```

- OR -

```
{
  "Error": "You cannot remove a load from someone else's boat."
}
```

```
}
```

Status: 404 Not Found

```
{  
  "Error": "The specified boat does not exist"  
}
```

- OR -

```
{  
  "Error": "The specified load does not exist"  
}
```

- OR -

```
{  
  "Error": " The specified boat and load does not exist"  
}
```

Status: 415 Unsupported Media Type

```
{  
  "Error": " Content-Type of * is not supported by this endpoint."  
}  
// * will be the content type that was in the request header.
```


Create a Load

Allows you to create a new load. Loads are not on (associated with) a Boat by default.

POST /loads

Request

Path Parameters

None

Request Headers

Name	Value	Notes	Required?
Content-Type	application/json		Yes
Accept	application/json	*/* is also acceptable	Yes

Request Body

Required

Request Body MIME Types

application/json

Request JSON Attributes

Name	Type	Description	Required?
volume	Integer	The unitless size of the Load	Yes
content	String	A human-readable description of the Load	Yes
creation_date	String	Formatted as MM/DD/YYYY. Input is not validated. Users expected to adhere to convention.	Yes

Request Body Example

```
{
  "volume": 900,
  "content": "Legos",
  "creation_date": "09/12/2014"
}
```

Response

Response Headers

Name	Value	Notes
Content-Type	application/json	

Response Body

Always

Response Body MIME Type

application/json

Response Statuses

Outcome	Status Code	Notes
Success	201 Created	
Failure	400 Bad Request	Can happen if: <ul style="list-style-type: none">• A 'Content-Type' of 'application/json' was specified in the request header but invalid JSON was in the body of the request.• The body of the request did not contain all three attributes 'volume', 'content' and 'creation_date'.
Failure	406 Not Acceptable	The 'Accept' the client indicated in its request headers did not include 'application/json'.
Failure	415 Unsupported Media Type	The 'Content-Type' the client indicated in its request headers was not 'application/json' and there was data in the request body.

Response Examples

Success

Status: 201 Created
<pre>{ "id": "5991828394344448", "volume": 900, "carrier": null, "content": "Legos", "creation_date": "09/12/2014", "self": "https://<your-app>/loads/5991828394344448" }</pre>

Success Response Attributes

Attribute	Datatype	Description
id	String	The id of the load.
volume	Integer	The unitless volume of the load.
carrier	Boat	The depiction of the boat object the load is currently embarked upon. If the load is not embarked, this value is null.
content	String	The human-readable description of what the load is.
creation_date	String	A date in MM/DD/YYYY format when the load was created.
self	String	The URL which provides direct access to the load via GET request.

Failure

Status: 400 Bad Request

```
{
  "Error": "A Content-Type of application/json was specified in the header but there was
a Syntax Error in the body of the request."
}
```

- OR -

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

Status: 406 Not Acceptable

```
{
  "Error": " This endpoint only supports a Content-Type of application/json,      please
          check your HTTP Accept headers."
}
```

Status: 415 Unsupported Media Type

```
{
  "Error": " Content-Type of * is not supported by this endpoint."
}
// * will be the content type that was in the request header.
```

Get all Loads

List all the loads. If there are more than 5 loads, the results are paginated with no more than 5 per page.

```
GET /loads?page=*
```

Request

Path Parameters

None

Query String Parameters

Name	Type	Description
page	Integer	OPTIONAL - Page number of results to view. The query parameter can be omitted altogether and the 1st page of results will be returned by default. This implementation mimics how GitHub implements pagination in their API. A page number that would attempt to retrieve results beyond the end of the result set will return an empty array. Users should only use page numbers when they are provided as a legitimate API response.

Request Headers

Name	Value	Notes	Required?
Accept	application/json	*/* is also acceptable	Yes

Request Body

None

Response

Response Headers

Name	Value	Notes
Content-Type	application/json	

Response Body

Always

Response Body MIME Type

application/json

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	400 Bad Request	Can happen if: <ul style="list-style-type: none">A 'Content-Type' of 'application/json' was specified in the request header but invalid JSON was in the body of the request.
Failure	406 Not Acceptable	The 'Accept' the client indicated in its request headers did not include 'application/json'.
Failure	415 Unsupported Media Type	The 'Content-Type' the client indicated in its request headers was not 'application/json' and there was data in the request body.

Response Examples

Success

Status: 200 OK

```
[
  {
    "id": "5629978607616000",
    "volume": 580,
    "carrier": null,
    "content": "Umbrellas",
    "creation_date": "09/13/2016",
    "self": "https:// <your-app>/loads/5629978607616000"
  },
  {
    "id": "5637377896742912",
    "volume": 1750,
    "carrier": null,
    "content": "Tires",
    "creation_date": "11/02/2019",
    "self": "https:// <your-app>/loads/5637377896742912"
  },
  {
    "id": "5664022732996608",
    "volume": 500,
    "carrier": null,
    "content": "Eggs",
    "creation_date": "08/21/2013",
    "self": "https:// <your-app>/loads/5664022732996608"
  },
  {
    "id": "5680529164730368",
    "volume": 1000,
    "carrier": null,
    "content": "Steel",
    "creation_date": "06/17/2015",
    "self": "https:// <your-app>/loads/5680529164730368"
  },
  {
    "id": "5707975213711360",
    "volume": 800,
    "carrier": null,
    "content": "Potatoes",
    "creation_date": "01/21/2017",
    "self": "https:// <your-app>/loads/5707975213711360"
  },
  {
    "next": "https:// <your-app>/loads?page=2"
  },
  {
    "totalLoads": 6
  }
]
```

Success Response Attributes

Attribute	Datatype	Description
id	String	The id of the load.
volume	Integer	The unitless volume of the load.
carrier	Boat	The depiction of the boat object the load is currently embarked upon. If the load is not embarked, this value is null. If the load is embarked, this value will be an object representing a Boat except for the Boat's 'loads' attribute (since this would be circular). See 'Get a Boat' for Boat attributes.
content	String	The human-readable description of what the load is.
creation_date	String	A date in MM/DD/YYYY format when the load was created.
self	String	The URL which provides direct access to the load via GET request.
next	String	Appears when there are more than 5 loads in the result returned by this endpoint. URL for which a GET request to will return up to the next 5 results.
totalLoads	Integer	The total number of Loads currently in the database.

Failure

Status: 400 Bad Request <pre>{ "Error": "A Content-Type of application/json was specified in the header but there was a Syntax Error in the body of the request." }</pre>
Status: 406 Not Acceptable <pre>{ "Error": " This endpoint only supports a Content-Type of application/json, please check your HTTP Accept headers." }</pre>
Status: 415 Unsupported Media Type <pre>{ "Error": " Content-Type of * is not supported by this endpoint." } // * will be the content type that was in the request header.</pre>

Get a Single Load

List a single load.

GET /loads/:load_id

Request

Path Parameters

Name	Type	Description
load_id	String	ID of the load.

Request Headers

Name	Value	Notes	Required?
Accept	application/json	*/* is also acceptable	Yes

Request Body

None

Response

Response Headers

Name	Value	Notes
Content-Type	application/json	

Response Body

Always

Response Body MIME Type

application/json

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	400 Bad Request	Can happen if: <ul style="list-style-type: none">A 'Content-Type' of 'application/json' was specified in the request header but invalid JSON was in the body of the request.An invalid load_id was specified such as null
Failure	404 Not Found	The load_id specified was not found in the database
Failure	406 Not Acceptable	The 'Accept' the client indicated in its request headers did not include 'application/json'.
Failure	415 Unsupported Media Type	The 'Content-Type' the client indicated in its request headers was not 'application/json' and there was data in the request body.

Response Examples

Success

Status: 200 OK

```
{
  "id": "5680529164730368",
  "volume": 1000,
  "carrier": null,
  "content": "Steel",
  "creation_date": "06/17/2015",
  "self": "https:// <your-app>/loads/5680529164730368"
}
```

Success Response Attributes

Attribute	Datatype	Description
id	String	The id of the load.
volume	Integer	The unitless volume of the load.
carrier	Boat	The depiction of the boat object the load is currently embarked upon. If the load is not embarked, this value is null. If the load is embarked, this value will be an object representing a Boat except for the Boat's 'loads' attribute (since this would be circular). See 'Get a Boat' for Boat attributes.
content	String	The human-readable description of what the load is.
creation_date	String	A date in MM/DD/YYYY format when the load was created.
self	String	The URL which provides direct access to the load via GET request.

Failure

Status: 400 Bad Request

```
{
  "Error": "A Content-Type of application/json was specified in the header but there was
a Syntax Error in the body of the request."
}
```

- OR -

```
{
  "Error": "The load_id you specified is not valid."
}
```

Status: 404 Not Found

```
{
  "Error": "No load with this load_id exists"
}
```

Status: 406 Not Acceptable

```
{
  "Error": " This endpoint only supports a Content-Type of application/json,      please
check your HTTP Accept headers."
}
```

Status: 415 Unsupported Media Type

```
{
  "Error": " Content-Type of * is not supported by this endpoint."
}
// * will be the content type that was in the request header.
```

Change a Load (Completely)

Changes all attributes of a load. This endpoint becomes protected when the target load is embarked upon a boat, otherwise it is treated as unprotected.

PUT /loads/:load_id

Request

Path Parameters

Name	Type	Description
load_id	String	ID of the load.

Request Headers

Name	Value	Notes	Required?
Accept	application/json	*/* is also acceptable	No
Authorization	Bearer <JWT>	<JWT> is a JSON Web Token generated by the web application when the user logs in.	Yes*

*Required only when the load is embarked upon a boat.

Request Body

Required

Request Body MIME Types

application/json

Request JSON Attributes

Name	Type	Description	Required?
volume	Integer	The unitless size of the Load	Yes
content	String	A human-readable description of the Load	Yes
creation_date	String	Formatted as MM/DD/YYYY. Input is not validated. Users expected to adhere to convention.	Yes

Request Body Example

```
{
  "volume": 1900,
  "content": "Giraffes",
  "creation_date": "07/04/1987"
}
```

Response

Response Headers

Name	Value	Notes
Content-Type	application/json	
Location	URI of the new Load object.	Only set on a 303 response code.
Allow	'GET, POST'	Only set on a 405 response code.

Response Body

Only on Error

Response Body MIME Type

application/json

Response Statuses

Outcome	Status Code	Notes
Success	303 See Other	Location Header in HTTP Response will contain the link of the new Load resource.
Failure	400 Bad Request	Can happen if: <ul style="list-style-type: none">• A 'Content-Type' of 'application/json' was specified in the request header but invalid JSON was in the body of the request.• The request did not contain updated values for all: 'volume', 'content' and 'creation_date'.• An invalid load_id was specified such as null
Failure	401 Unauthorized	Can happen if: <ul style="list-style-type: none">• No JWT provided in Authorization request header• Bad/Malformed JWT provided in Authorization request header• Expired JWT provided in Authorization request header And: <ul style="list-style-type: none">• You are trying to update a load that is embarked and do not provide an Authorization header in the request.
Failure	403 Forbidden	Can happen if: <ul style="list-style-type: none">• A valid JWT was provided but the 'sub' (Subscriber ID) associated with the JWT did not match the 'owner' of the Boat the Load is embarked upon.
Failure	404 Not Found	The load_id specified was not found in the database
Failure	405 Method Not Allowed	No load_id was specified indicating an attempt to update all Loads.

Failure	415 Unsupported Media Type	The 'Content-Type' the client indicated in its request headers was not 'application/json' and there was data in the request body.
---------	----------------------------	---

Response Examples

Success

Status: 303 See Other

HTTP Response Header => Location: https://<your-app>/loads/:load_id

Failure

Status: 400 Bad Request

```
{
  "Error": "A Content-Type of application/json was specified in the header but there was a Syntax Error in the body of the request."
}
```

- OR -

```
{
  "Error": "PUTs at this endpoint require that all fields are updated. Use PATCH for partial updates."
}
```

- OR -

```
{
  "Error": "The load_id you specified is not valid."
}
```

Status: 401 Unauthorized

```
{
  "Error": "You must authenticate before modifying an embarked load."
}
```

Status: 403 Forbidden

```
{
  "Error": "Only the boat owner can manipulate loads that are embarked on their boat."
}
```

Status: 404 Not Found

```
{
  "Error": "A load with this load_id was not found."
}
```

Status: 405 Method Not Allowed

```
{
  "Error": "You cannot update all loads."
}
```

```
}
```

Status: 415 Unsupported Media Type

```
{
```

```
  "Error": " Content-Type of * is not supported by this endpoint."
```

```
}
```

```
// * will be the content type that was in the request header.
```

Change a Load (Partially)

Changes only some attributes of a load. This endpoint becomes protected when the target load is embarked upon a boat, otherwise it is treated as unprotected.

PATCH /loads/:load_id

Request

Path Parameters

Name	Type	Description
load_id	String	ID of the load.

Request Headers

Name	Value	Notes	Required?
Accept	application/json	*/* is also acceptable	Yes
Authorization	Bearer <JWT>	<JWT> is a JSON Web Token generated by the web application when the user logs in.	Yes*

*Required only when the load is embarked upon a boat.

Request Body

Required

Request Body MIME Types

application/json

Request JSON Attributes

Name	Type	Description	Required?
volume	Integer	The unitless size of the Load	Yes*
content	String	A human-readable description of the Load	Yes*
creation_date	String	Formatted as MM/DD/YYYY. Input is not validated. Users expected to adhere to convention.	Yes*

*At least one is required, but not all.

Request Body Example

```
{
  "volume": 6800
}
```

Response

Response Headers

Name	Value	Notes
Content-Type	application/json	
Allow	'GET, POST'	Only set on a 405 response code.

Response Body

Always

Response Body MIME Type

application/json

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	400 Bad Request	Can happen if: <ul style="list-style-type: none">• A 'Content-Type' of 'application/json' was specified in the request header but invalid JSON was in the body of the request.• The body of the request did not contain at least one of the attributes 'content', 'volume' or 'creation_date'.• An invalid load_id was specified such as null
Failure	401 Unauthorized	Can happen if: <ul style="list-style-type: none">• No JWT provided in Authorization request header• Bad/Malformed JWT provided in Authorization request header• Expired JWT provided in Authorization request header And: <ul style="list-style-type: none">• You are trying to update a load that is embarked and do not provide an Authorization header in the request.
Failure	403 Forbidden	Can happen if: <ul style="list-style-type: none">• A valid JWT was provided but the 'sub' (Subscriber ID) associated with the JWT did not match the 'owner' of the Boat the Load is embarked upon.
Failure	404 Not Found	The load_id specified was not found in the database
Failure	405 Method Not Allowed	No load_id was specified indicating an attempt to update all Loads.
Failure	406 Not Acceptable	The 'Accept' the client indicated in its request headers did not include 'application/json'.

Failure	415 Unsupported Media Type	The 'Content-Type' the client indicated in its request headers was not 'application/json' and there was data in the request body.
---------	----------------------------	---

Response Examples

Success

Status: 200 OK

```
{
  "id": "5991828394344448",
  "volume": 6800,
  "carrier": null,
  "content": "Legos",
  "creation_date": "09/12/2014",
  "self": "https://<your-app>/loads/5991828394344448"
}
```

Failure

Status: 400 Bad Request

```
{
  "Error": "A Content-Type of application/json was specified in the header but there was a Syntax Error in the body of the request."
}
```

- OR -

```
{
  "Error": "The load_id you specified is not valid."
}
```

- OR -

```
{
  "Error": "No properties of the load were included in the body of the request."
}
```

Status: 401 Unauthorized

```
{
  "Error": "You must authenticate before modifying an embarked load."
}
```

Status: 403 Forbidden

```
{
  "Error": "Only the boat owner can manipulate loads that are embarked on their boat."
}
```

Status: 404 Not Found

```
{
```

<pre>"Error": "A load with this load_id was not found." }</pre>
<p>Status: 405 Method Not Allowed</p> <pre>{ "Error": "You cannot update all loads." }</pre>
<p>Status: 406 Not Acceptable</p> <pre>{ "Error": " This endpoint only supports a Content-Type of application/json, please check your HTTP Accept headers." }</pre>
<p>Status: 415 Unsupported Media Type</p> <pre>{ "Error": " Content-Type of * is not supported by this endpoint." } // * will be the content type that was in the request header.</pre>

Delete a Load

Deletes a single load. This endpoint becomes protected when the target load is embarked upon a boat, otherwise it is treated as unprotected.

DELETE /loads/:load_id

Request

Path Parameters

Name	Type	Description
load_id	String	ID of the load.

Request Headers

Name	Value	Notes	Required?
Accept	application/json	*/* is also acceptable	No
Authorization	Bearer <JWT>	<JWT> is a JSON Web Token generated by the web application when the user logs in.	Yes*

*Required only when the load is embarked upon a boat.

Request Body

None

Response

Response Headers

Name	Value	Notes
Content-Type	application/json	
Allow	'GET, POST'	Only set on a 405 response code.

Response Body

Only on Error

Response Body MIME Type

application/json

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	
Failure	400 Bad Request	Can happen if: <ul style="list-style-type: none">• A 'Content-Type' of 'application/json' was specified in the request header but invalid JSON was in the body of the request.• An invalid load_id was specified such as null
Failure	401 Unauthorized	Can happen if: <ul style="list-style-type: none">• No JWT provided in Authorization request header• Bad/Malformed JWT provided in Authorization request header• Expired JWT provided in Authorization request header And: <ul style="list-style-type: none">• You are trying to delete a load that is embarked and do not provide an Authorization header in the request.
Failure	403 Forbidden	Can happen if: <ul style="list-style-type: none">• A valid JWT was provided but the 'sub' (Subscriber ID) associated with the JWT did not match the 'owner' of the Boat the Load is embarked upon.
Failure	404 Not Found	The load_id specified was not found in the database
Failure	405 Method Not Allowed	No load_id was specified indicating an attempt to delete all Loads.
Failure	415 Unsupported Media Type	The 'Content-Type' the client indicated in its request headers was not 'application/json' and there was data in the request body.

Response Examples

Success

Status: 204 No Content

// EMPTY BODY //

Failure

Status: 400 Bad Request

```
{
  "Error": "A Content-Type of application/json was specified in the header but there was
a Syntax Error in the body of the request."
}
```

- OR -

```
{
  "Error": "The load_id you specified is not valid."
}
```

Status: 401 Unauthorized

```
{
  "Error": "You must authenticate before modifying an embarked load."
}
```

Status: 403 Forbidden

```
{
  "Error": "Only the boat owner can manipulate loads that are embarked on their boat."
}
```

Status: 404 Not Found

```
{
  "Error": "No load with this load_id exists"
}
```

Status: 405 Method Not Allowed

```
{
  "Error": "You cannot delete all boats."
}
```

Status: 415 Unsupported Media Type

```
{
  "Error": " Content-Type of * is not supported by this endpoint."
}
// * will be the content type that was in the request header.
```

Get all Users

List all the registered Users for the application.

GET /users

Request

Path Parameters

None

Request Headers

Name	Value	Notes	Required?
Accept	application/json	*/* is also acceptable	Yes

Request Body

None

Response

Response Headers

Name	Value	Notes
Content-Type	application/json	

Response Body

Always

Response Body MIME Type

application/json

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	400 Bad Request	Can happen if: <ul style="list-style-type: none">A 'Content-Type' of 'application/json' was specified in the request header but invalid JSON was in the body of the request.
Failure	406 Not Acceptable	The 'Accept' the client indicated in its request headers did not include 'application/json'.
Failure	415 Unsupported Media Type	The 'Content-Type' the client indicated in its request headers was not 'application/json' and there was data in the request body.

Response Examples

Success

Status: 200 OK

```
[
  {
    "id": "2758902347234",
    "sub": "29083470234",
    "first_name": "Shirley",
    "last_name": "Temple",
    "account_created": "05/29/2021",
    "self": "https://<your-app>/users/103971256823043028308"
  },
  {
    "id": "238047028934709823",
    "sub": "9287539823487",
    "first_name": "Gorman",
    "last_name": "Smith",
    "account_created": "05/12/2021",
    "self": "https://<your-app>/users/117952375700092671186"
  },
  {
    "totalUsers": 2
  }
]
```

Success Response Attributes

Attribute	Datatype	Description
id	String	The id of the user. Automatically assigned by Google Datastore.
sub	String	The Google Subscriber ID of the registered User.
first_name	String	The first name of the user based on their Google Credentials.
last_name	String	The last name of the user based on their Google Credentials.
account_created	String	A date in MM/DD/YYYY format indicating the date they registered with the application.
self	String	The URL which provides direct access to the user via GET request.
totalUsers	Integer	The total number of Users currently registered in the application and are listed in the database.

Failure

Status: 400 Bad Request

```
{
  "Error": "A Content-Type of application/json was specified in the header but there was
a Syntax Error in the body of the request."
}
```

Status: 406 Not Acceptable

```
{
  "Error": " This endpoint only supports a Content-Type of application/json,      please
check your HTTP Accept headers."
}
```

Status: 415 Unsupported Media Type

```
{
  "Error": " Content-Type of * is not supported by this endpoint."
}
// * will be the content type that was in the request header.
```


Get a Single User

Retrieve a single registered User from the database.

GET /users/:user_id

Request

Path Parameters

Name	Type	Description
user_id	String	The User's Google Subscriber ID ('sub' value)

Request Headers

Name	Value	Notes	Required?
Accept	application/json	*/* is also acceptable	Yes

Request Body

None

Response

Response Headers

Name	Value	Notes
Content-Type	application/json	

Response Body

Always

Response Body MIME Type

application/json

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	400 Bad Request	Can happen if: <ul style="list-style-type: none">A 'Content-Type' of 'application/json' was specified in the request header but invalid JSON was in the body of the request.An invalid user_id was specified such as null
Failure	406 Not Acceptable	The 'Accept' the client indicated in its request headers did not include 'application/json'.
Failure	415 Unsupported Media Type	The 'Content-Type' the client indicated in its request headers was not 'application/json' and there was data in the request body.

Response Examples

Success

Status: 200 OK

```
{
  "id": "2758902347234",
  "sub": "29083470234",
  "first_name": "Shirley",
  "last_name": "Temple",
  "account_created": "05/29/2021",
  "self": "https://<your-app>/users/103971256823043028308"
}
```

Success Response Attributes

Attribute	Datatype	Description
id	String	The id of the user. Automatically assigned by Google Datastore.
sub	String	The Google Subscriber ID of the registered User.
first_name	String	The first name of the user based on their Google Credentials.
last_name	String	The last name of the user based on their Google Credentials.
account_created	String	A date in MM/DD/YYYY format indicating the date they registered with the application.
self	String	The URL which provides direct access to the user via GET request.

Failure

Status: 400 Bad Request

```
{
  "Error": "A Content-Type of application/json was specified in the header but there was a Syntax Error in the body of the request."
}

- OR -

{
  "Error": "The user_id you specified is not valid."
}
```

Status: 406 Not Acceptable

```
{
  "Error": " This endpoint only supports a Content-Type of application/json, please check your HTTP Accept headers."
}
```

Status: 415 Unsupported Media Type

```
{
  "Error": " Content-Type of * is not supported by this endpoint."
}
// * will be the content type that was in the request header.
```