

Final Project: API Spec

CS 493: Cloud Application Development

Spring 2021

Oregon State University

Bryan Roberts CS493-Final Project Document

URL

<https://robertb2-finalproject.wl.r.appspot.com>

URL Account Creation and Login

<https://robertb2-finalproject.wl.r.appspot.com/authentication>

Data Model

User

Property Name	Notes
id	String. The id of the user. Datastore automatically generates it.
token_id	String. The token id of the user. Automatically generated upon logging in. Used to uniquely identify users after authenticating protected resources with JWT.
boats	Array of boat objects with boat id and self-link to URL for boat object in datastore.
self	String. URL to the current user.

Boat

Property Name	Notes
id	String. The id of the boat. Datastore automatically generates it.
name	String. Name of the boat. E.g., Sea Witch. Cannot have any special characters. Spaces are allowed. Must be between 1-256 characters in length.
type	String. The type of the boat. E.g., Sailboat, Catamaran, etc. Cannot have any special characters. Spaces are allowed. Must be between 1-256 characters in length.
length	Integer. The length of the boat in feet. Must be larger than 0.
loads	Array of load objects with load id and self-link to URL for object in datastore. Lists all the loads currently on the boat.

	Boats are initially created with no loads.
owner	String. The self URL for the user who owns the boat.
self	String. URL to the current boat.

Load

Property Name	Notes
id	String. The id of the load. Datastore automatically generates it.
volume	Integer. Volume of the load in cubic feet. Must be larger than 0.
content	String. E.g., Apples. What the load holds. Cannot have any special characters. Spaces are allowed. Must be between 1-256 characters in length.
creation_date	String. E.g., 12/22/2021. The date the load was created. Must be format DD/MM/YYYY or DD-MM-YYYY.
carrier	An object that holds the id, name, and self-URL to the boat the load is currently on. All fields will be set to null if the load is not on a boat. Initially set to null for all fields.
self	String. URL to the current load.

Relationships

Boats and Loads

Boats can have one to many loads. Boats are created without any loads. Loads can only have one boat. The loads boat will be under the boat “carrier” key. Loads are created without any carrier. Loads can be added to boats one at a time. They require the boats JWT as the boats are owned by users.

Users

Users have two unique identifiers. First is the id which is the unique identifier given by Google App Engine datastore. This is the id used in the self url. The unique id used to identify a user is the token_id. This is the id generated and authenticated from the JWT given upon the user logging in. For requests needing a unique identifier, the JWT provided upon logging in should be used as the bearer token. This will be authenticated and confirmed against the token_id stored in datastore.

Users and Boats

Users have a one to many relationship with boats. A single user can own zero, one, or many boats. Boats have a one to one relationship with users. Boats will always be owned by one user.

Create a Boat

Allows you to create a new boat that belongs to the bearer token user.

POST /boats

Request

Path Parameters

None

Request Body

Required

Request Header

accept: application/json

Request Authorization

Bearer Token: JWT provided by logging in

Request Body Format

JSON

Request JSON Attributes

Name	Type	Description	Required?
name	String	The name of the boat. Cannot have any special characters. Spaces are allowed. Must be between 1-256 characters in length.	Yes
type	String	The type of the boat. E.g., Sailboat, Catamaran, etc. Cannot have any special characters. Spaces are allowed. Must be between 1-256 characters in length.	Yes
length	Integer	Length of the boat in feet. Must be larger than 0.	Yes

Request Body Example

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

Response

Response Body Format

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 or the input is invalid, the boat will not be created, and 400 status code will be returned.
Failure	401 Unauthorized	If the request doesn't include a bearer token or provides an invalid bearer token, the boat will not be created, and a 401 status code will be returned.
Failure	406 Not Acceptable	If the Accept header is not set to application/json, the boat will not be created, and a 406 status code will be returned.
Failure	415 Unsupported Media Type	If the content-type header is not set to application/json, the boat will not be created, and a 415 status code will be

	returned.
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Response Examples

- Datastore will automatically generate an ID and store it with the entity being created. The app will send back this value in the response body as shown in the example.
- The self attribute will contain the live link to the REST resource corresponding to this boat. In other words, this is the URL to get this newly created boat. The self attribute is not stored in the Datastore
- The loads attribute will be initialized as an empty array. Creating a boat will always start with an empty array.

Success

Status: 201 Created

```
{
  "id": "6267518586978304",
  "name": "Sea Witch",
  "type": "Catamaran",
  "length": 28,
  "owner":
  "https://robertb2-finalproject.wl.r.appspot.com/users/5362529786134528",
  "loads": [],
  "self": "https://robertb2-finalproject.wl.r.appspot.com/boats/6267518586978304"
}
```

Failure

Status: 400 Bad Request

```
{
  "Error": "Request object does not have correct attributes"
}
```

Status: 401 Unauthorized

```
{
  "Error": "The request is either missing or has invalid JWT bearer token"
}
```

Status: 406 Not Acceptable

```
{
  "Error": "Accept header must be application/json if set"
}
```

Status: 415 Unsupported Media Type

```
{
  "Error": "Content-Type header must be application/json"
}
```

Response Side Effects

- The boat self will be added to owner array stored in the User entity associated with the JWT bearer token.

Get a Boat

Allows you to get an existing boat that belongs to the bearer token user.

GET /boats/:boat_id

Request

Path Parameters

Name	Type	Description
boat_id	String	ID of the boat

Request Body

None

Request Header

accept: application/json

Request Authorization

Bearer Token: JWT provided by logging in

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	401 Unauthorized	If the request doesn't include a bearer token or provides an invalid bearer token, the boat will not be returned, and a 401 status code will be returned.
Failure	404 Not Found	No boat with this boat_id exists, and a 404 status code will be returned.
Failure	406 Not Acceptable	If the Accept header is not set to application/json, the boat will not be returned, and a 406 status code will be returned.

Response Examples

Success

Status: 200 OK

```
{
  "id": "5418958039547904",
  "length": 28,
  "loads": [],
  "name": "Sea Witch",
```

```
    "owner":  
    "https://robertb2-finalproject.wl.r.appspot.com/users/5981907992969216",  
    "type": "Catamaran",  
    "self": "https://robertb2-finalproject.wl.r.appspot.com/boats/5418958039547904"  
}
```

Failure

Status: 401 Unauthorized

```
{  
  "Error": "The request is either missing or has invalid JWT bearer token"  
}
```

Status: 404 Not Found

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

Status: 406 Not Acceptable

```
{  
  "Error": "Accept header must be application/json"  
}
```

List all Boats

List all the boats that belongs to the bearer token user.

GET /boats

Request

Path Parameters

None

Request Body

None

Request Header

accept: application/json

Request Authorization

Bearer Token: JWT provided by logging in

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	401 Unauthorized	If the request doesn't include a bearer token or provides an invalid bearer token, no boats will be returned, and a 401 status code will be returned.
Failure	406 Not Acceptable	If the Accept header is not set to application/json, no boats will be returned, and a 406 status code will be returned.

Response Examples

- Response will be paginated. It will return 5 boats per page.
- There will be a next link to get the next page of results. If the page being viewed is the last page, then there will not be a next link.
- Boats will be stored in an array in the "boats" key.
- Loads with in boats be held in an object with keys "id" and "self". "id" will be a number generated by datastore. "self" will be a link to the load with that id.

Success

Status: 200 OK

Beginning of Pagination

{

```
"owner_boat_count": 7,
"boats": [
  {
    "id": "4658842344357888",
    "name": "Sea Witch",
    "length": 28,
    "type": "Catamaran",
    "owner":
"https://robertb2-finalproject.wl.r.appspot.com/users/5981907992969216",
    "loads": [],
    "self":
"https://robertb2-finalproject.wl.r.appspot.com/boats/4658842344357888"
  },
  {
    "id": "5221792297779200",
    "length": 12,
    "type": "Doggy Boat",
    "loads": [],
    "name": "Tigger",
    "owner":
"https://robertb2-finalproject.wl.r.appspot.com/users/5981907992969216",
    "self":
"https://robertb2-finalproject.wl.r.appspot.com/boats/5221792297779200"
  },
  {
    "id": "5355170091237376",
    "length": 54,
    "loads": [],
    "owner":
"https://robertb2-finalproject.wl.r.appspot.com/users/5981907992969216",
    "name": "Jack Sparrow",
    "type": "Pirate",
    "self":
"https://robertb2-finalproject.wl.r.appspot.com/boats/5355170091237376"
  },
  {
    "id": "5418958039547904",
    "type": "Catamaran",
    "length": 28,
    "name": "Sea Witch",
    "loads": [],
    "owner":
"https://robertb2-finalproject.wl.r.appspot.com/users/5981907992969216",
    "self":
"https://robertb2-finalproject.wl.r.appspot.com/boats/5418958039547904"
  },
  {
```



```

        "id": "5784742251200512",
        "owner":
"https://robertb2-finalproject.wl.r.appspot.com/users/5981907992969216",
        "name": "Captain Boat",
        "loads": [],
        "length": 4,
        "type": "Small",
        "self":
"https://robertb2-finalproject.wl.r.appspot.com/boats/5784742251200512"
    }
],
    "next":
"https://robertb2-finalproject.wl.r.appspot.com/boats?cursor=CjISLGoXbX5yb2JlcnRiMi1maW5hbHB5b2plY3RyEQsSBEJvYXQYgICAmJSmowoMGAAGAA=="
}

```

End of pagination

```

{
    "owner_boat_count": 7,
    "boats": [
        {
            "id": "6347692204621824",
            "length": 10,
            "owner":
"https://robertb2-finalproject.wl.r.appspot.com/users/5981907992969216",
            "name": "Tea Cup",
            "loads": [],
            "type": "Fisher",
            "self":
"https://robertb2-finalproject.wl.r.appspot.com/boats/6347692204621824"
        },
        {
            "id": "6544857946390528",
            "type": "Huge Boat",
            "length": 500,
            "name": "Dock",
            "loads": [],
            "owner":
"https://robertb2-finalproject.wl.r.appspot.com/users/5981907992969216",
            "self":
"https://robertb2-finalproject.wl.r.appspot.com/boats/6544857946390528"
        }
    ]
}

```


Failure

Status: 401 Unauthorized

```
{
  "Error": "The request is either missing or has invalid JWT bearer token"
}
```

Status: 406 Not Acceptable

```
{
  "Error": "Accept header must be application/json"
}
```

Put a Boat

Allows you to change all three attributes for a boat that belongs to the bearer token user.

PUT /boats/:boat_id

Request

Path Parameters

Name	Type	Description
boat_id	String	ID of the boat

Request Body

Required

Request Header

accept: application/json

Request Authorization

Bearer Token: JWT provided by logging in

Request Body Format

JSON

Request JSON Attributes

Name	Type	Description	Required?
name	String	The name of the boat. Cannot have any special characters. Spaces are allowed. Must be between 1-256 characters in length.	Yes
type	String	The type of the boat. E.g., Sailboat, Catamaran, etc. Cannot have any special characters. Spaces are allowed. Must be between 1-256 characters in length.	Yes
length	Integer	Length of the boat in feet. Must be larger than 0.	Yes

Request Body Example

```
{
  "name": "Sea Put",
  "type": "Catamaran Put",
  "length": 30
}
```

```
}
```

Response

Response Body Format

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 or the input is invalid, the boat will not be changed, and 400 status code will be returned.
Failure	401 Unauthorized	If the request doesn't include a bearer token or provides an invalid bearer token, the boat will not be changed, and a 401 status code will be returned.
Failure	406 Not Acceptable	If the Accept header is not set to application/json, the boat will not be changed, and a 406 status code will be returned.
Failure	415 Unsupported Media Type	If the content-type header is not set to application/json, the boat will not be changed, and a 415 status code will be returned.

Response Examples

Success

Status: 201 Created

```
{
  "id": "6492274494013440",
  "owner":
  "https://robertb2-finalproject.wl.r.appspot.com/users/5032354712125440",
  "length": 30,
  "name": "Sea Put",
  "loads": [],
  "type": "Catamaran Put",
  "self": "https://robertb2-finalproject.wl.r.appspot.com/boats/6492274494013440"
}
```

Failure

Status: 400 Bad Request

```
{
  "Error": "Request object does not have correct attributes"
}
```

Status: 401 Unauthorized

```
{
  "Error": "The request is either missing or has invalid JWT bearer token"
}
```

```
}
```

Status: 406 Not Acceptable

```
{  
  "Error": "Accept header must be application/json if set"  
}
```

Status: 415 Unsupported Media Type

```
{  
  "Error": "Content-Type header must be application/json"  
}
```

Patch a Boat

Allows you to change between one and two of the attributes for a boat that belongs to the bearer token user.

PATCH /boats/:boat_id

Request

Path Parameters

Name	Type	Description
boat_id	String	ID of the boat

Request Body

Required

Request Header

accept: application/json

Request Authorization

Bearer Token: JWT provided by logging in

Request Body Format

JSON

Request JSON Attributes

Name	Type	Description	Required?
name	String	The name of the boat. Cannot have any special characters. Spaces are allowed. Must be between 1-256 characters in length.	No
type	String	The type of the boat. E.g., Sailboat, Catamaran, etc. Cannot have any special characters. Spaces are allowed. Must be between 1-256 characters in length.	No
length	Integer	Length of the boat in feet. Must be larger than 0.	No

Request Body Example

```
{  
  "name": "Sea Patch",
```

```
}
```

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	201 Created	
Failure	400 Bad Request	If the request includes 0 or 3 of the attributes or the input is invalid, the boat will not be changed, and 400 status code will be returned.
Failure	401 Unauthorized	If the request doesn't include a bearer token or provides an invalid bearer token, the boat will not be changed, and a 401 status code will be returned.
Failure	406 Not Acceptable	If the Accept header is not set to application/json, the boat will not be changed, and a 406 status code will be returned.
Failure	415 Unsupported Media Type	If the content-type header is not set to application/json, the boat will not be changed, and a 415 status code will be returned.

Response Examples

Success

Status: 201 Created

```
{
  "id": "6492274494013440",
  "name": "Sea Patch",
  "type": "Catamaran Put",
  "length": 30,
  "owner":
    "https://robertb2-finalproject.wl.r.appspot.com/users/5032354712125440",
  "loads": [],
  "self": "https://robertb2-finalproject.wl.r.appspot.com/boats/6492274494013440"
}
```

Failure

Status: 400 Bad Request

```
{
  "Error": "Request object does not have correct attributes"
}
```

Status: 401 Unauthorized

```
{
  "Error": "The request is either missing or has invalid JWT bearer token"
}
```

```
}

Status: 406 Not Acceptable
{
  "Error": "Accept header must be application/json if set"
}

Status: 415 Unsupported Media Type
{
  "Error": "Content-Type header must be application/json"
}
```

Delete a Boat

Allows you to delete a boat. Note that if the boat is currently having loads, deleting the boat will unload the loads. This will update the “carrier” of the loads currently on the boat being deleted.

DELETE /boats/:boat_id

Request

Path Parameters

Name	Type	Description
boat_id	String	ID of the boat

Request Body

None

Request Authorization

Bearer Token: JWT provided by logging in

Response

No body

Response Body Format

Success: No body

Failure: JSON

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	
Failure	401 Unauthorized	If the request doesn't include a bearer token or provides an invalid bearer token, the boat will not be deleted, and a 401 status code will be returned.
Failure	404 Not Found	No boat with this boat_id exists, and a 404 status code will be returned.

Response Examples

Success

Status: 204 No Content

Failure

Status: 401 Unauthorized

```
{  
  "Error": "The request is either missing or has invalid JWT bearer token"  
}
```

Status: 404 Not Found

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


Create a Load

Allows you to create a new load. All newly created loads will not be assigned to a boat.

POST /loads

Request

Path Parameters

None

Request Body

Required

Request Header

accept: application/json

Request Body Format

JSON

Request JSON Attributes

Name	Type	Description	Required?
volume	Integer	The volume of the load	Yes
content	String	The content of the load	Yes
creation_date	String	The date the load was created. Must be format DD/MM/YYYY or DD-MM-YYYY.	Yes

Request Body Example

```
{
  "volume": 5,
  "content": "LEGO Blocks",
  "creation_date": "10/18/2020"
}
```

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	201 Created	
Failure	400 Bad Request	If the request is missing the volume, content, or date attribute, or the input is invalid, the load will not be created, and 400 status code will be returned.
Failure	406 Not Acceptable	If the Accept header is not set to application/json, the load will not be created, and a 406 status code will be returned.
Failure	415 Unsupported Media Type	If the content-type header is not set to application/json, the load will not be created, and a 415 status code will be

	returned.
--	-----------

Response Examples

- Datastore will automatically generate an ID and store it with the entity being created. This value will be sent in the response body as shown in the example.
- The value of the attribute carrier is an object containing the ID of the boat currently holding this load, the name of the boat, and the link to the boat stored in self. Loads are created without a boat, so the object will return with null in all of these fields.
- The value of the attribute self is a live link to the REST resource corresponding to this load. In other words, this is the URL to get this newly created load.

Success

Status: 201 Created

```
{
  "id": "5738709764800512",
  "volume": 5,
  "content": "LEGO Blocks",
  "creation_date": "10/18/2020",
  "carrier": {
    "id": null,
    "name": null,
    "self": null
  },
  "self": "https://robertb2-finalproject.wl.r.appspot.com/loads/5738709764800512"
}
```

Failure

Status: 400 Bad Request

```
{
  "Error": "Request object does not have correct attributes"
}
```

Status: 406 Not Acceptable

```
{
  "Error": "Accept header must be application/json if set"
}
```

Status: 415 Unsupported Media Type

```
{
  "Error": "Content-Type header must be application/json"
}
```

Get a Load

Allows you to get an existing load.

GET /loads/:load_id

Request

Path Parameters

Name	Type	Description
load_id	String	ID of the load

Request Body

None

Request Header

accept: application/json

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	404 Not Found	No load with this load_id exists, and a 404 status code will be returned.
Failure	406 Not Acceptable	If the Accept header is not set to application/json, then a 406 status code will be returned.

Response Examples

Success

Status: 200 OK

```
{
  "id": "5175759811379200",
  "carrier": {
    "self": null,
    "id": null,
    "name": null
  },
  "creation_date": "10/18/2020",
  "volume": 5,
  "content": "LEGO Blocks",
  "self": "https://robertb2-finalproject.wl.r.appspot.com/loads/5175759811379200"
}
```

Failure

Status: 404 Not Found

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

Status: 406 Not Acceptable

```
{  
  "Error": "Accept header must be application/json if set"  
}
```

List all Loads

List all the loads.

GET /loads

Request

Path Parameters

None

Request Header

accept: application/json

Request Body

None

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	406 Not Acceptable	If the Accept header is not set to application/json, the loads will not be listed, and a 406 status code will be returned.

Response Examples

- Response will be paginated. It will return 5 loads per page.
- There will be a next link to get the next page of results. If the page being viewed is the last page, then there will not be a next link.
- Loads will be stored in an array in the "loads" key.
- Within a load, the "carrier" will represent the boat that is currently holding the load. The carrier will have the keys id, name, and self. If the load is not on a boat, all these values will be set to null. If the load is on a boat, then id will hold the boat id, name will hold a string of the boat name, and self will hold a URL back to the boat object.

Success

Status: 200 OK

Beginning of Pagination

```
{
  "total_load_count": 6,
  "loads": [
    {
```

```
    "id": "4894284834668544",
    "volume": 99,
    "content": "Glasses",
    "carrier": {
      "name": null,
      "id": null,
      "self": null
    },
    "creation_date": "02/18/2021",
    "self":
"https://robertb2-finalproject.wl.r.appspot.com/loads/4894284834668544"
  },
  {
    "id": "5102723456303104",
    "carrier": {
      "name": null,
      "id": null,
      "self": null
    },
    "creation_date": "09/17/2020",
    "volume": 12,
    "content": "Plates",
    "self":
"https://robertb2-finalproject.wl.r.appspot.com/loads/5102723456303104"
  },
  {
    "id": "5172860540682240",
    "carrier": {
      "self": null,
      "id": null,
      "name": null
    },
    "creation_date": "01/10/2019",
    "volume": 50,
    "content": "Cups",
    "self":
"https://robertb2-finalproject.wl.r.appspot.com/loads/5172860540682240"
  },
  {
    "id": "5187754950393856",
    "content": "Hard Drive",
    "carrier": {
      "name": null,
      "id": null,
      "self": null
    },
    "volume": 26,
```

```

        "creation_date": "10/01/2020",
        "self":
"https://robertb2-finalproject.wl.r.appspot.com/loads/5187754950393856"
    },
    {
        "id": "5735810494103552",
        "creation_date": "10/18/2020",
        "carrier": {
            "self": null,
            "id": null,
            "name": null
        },
        "volume": 5,
        "content": "LEGO Blocks",
        "self":
"https://robertb2-finalproject.wl.r.appspot.com/loads/5735810494103552"
    }
],
    "next":
"https://robertb2-finalproject.wl.r.appspot.com/loads?cursor=CjISLGoXbX5yb2JlcnRiMi1maW5hbHB2plY3RyEQsSBExvYWQYgICAmIeWmAoMGAAGAA=="
}

```

End of Pagination

```

{
    "total_load_count": 6,
    "loads": [
        {
            "id": "6301659718221824",
            "volume": 10,
            "carrier": {
                "self": null,
                "name": null,
                "id": null
            },
            "creation_date": "11/02/1999",
            "content": "Toys",
            "self":
"https://robertb2-finalproject.wl.r.appspot.com/loads/6301659718221824"
        }
    ]
}

```

Failure

Status: 406 Not Acceptable

```
{
  "Error": "Accept header must be application/json if set"
}
```

Put a Load

Allows you to update an entire load.

PUT /loads/:load_id

Request

Path Parameters

Name	Type	Description
load_id	String	ID of the load

Request Body

Required

Request Header

accept: application/json

Request Body Format

JSON

Request JSON Attributes

Name	Type	Description	Required?
volume	Integer	The volume of the load	Yes
content	String	The content of the load	Yes
creation_date	String	The date the load was created. Must be format DD/MM/YYYY or DD-MM-YYYY.	Yes

Request Body Example

```
{
  "volume": 30,
  "content": "LEGO Blocks Put",
  "creation_date": "10/18/2021"
}
```

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	201 Created	
Failure	400 Bad Request	If the request is missing the volume, content, or date

		attribute, or the input is invalid, the load will not be changed, and 400 status code will be returned.
Failure	406 Not Acceptable	If the Accept header is not set to application/json, the load will not be changed, and a 406 status code will be returned.
Failure	415 Unsupported Media Type	If the content-type header is not set to application/json, the load will not be changed, and a 415 status code will be returned.

Response Examples

Success

Status: 201 Created

```
{
  "id": "4876692648624128",
  "carrier": {
    "self": null,
    "name": null,
    "id": null
  },
  "content": "LEGO Blocks Put",
  "volume": 30,
  "creation_date": "10/18/2021",
  "self": "https://robertb2-finalproject.wl.r.appspot.com/loads/4876692648624128"
}
```

Failure

Status: 400 Bad Request

```
{
  "Error": "Request object does not have correct attributes"
}
```

Status: 406 Not Acceptable

```
{
  "Error": "Accept header must be application/json if set"
}
```

Status: 415 Unsupported Media Type

```
{
  "Error": "Content-Type header must be application/json"
}
```

Patch a Load

Allows you to update between 1 and 2 entities in a load.

PATCH /loads/:load_id

Request

Path Parameters

Name	Type	Description
load_id	String	ID of the load

Request

Path Parameters

None

Request Body

Required

Request Header

accept: application/json

Request Body Format

JSON

Request JSON Attributes

Name	Type	Description	Required?
volume	Integer	The volume of the load	No
content	String	The content of the load	No
creation_date	String	The date the load was created. Must be format DD/MM/YYYY or DD-MM-YYYY.	No

Request Body Example

```
{  
  "volume": 30,  
  "content": "LEGO Blocks Put",  
  "creation_date": "10/18/2021"  
}
```

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	201 Created	
Failure	400 Bad Request	If the request has 0 or 3 of the required attributes or the input is invalid, the load will not be changed, and 400 status code will be returned.
Failure	406 Not Acceptable	If the Accept header is not set to application/json, the load will not be changed, and a 406 status code will be returned.
Failure	415 Unsupported Media Type	If the content-type header is not set to application/json, the load will not be changed, and a 415 status code will be

		returned.
--	--	-----------

Response Examples

Success

Status: 201 Created

```
{
  "id": "4876692648624128",
  "carrier": {
    "self": null,
    "name": null,
    "id": null
  },
  "content": "LEGO Blocks Put",
  "volume": 30,
  "creation_date": "10/18/2021",
  "self": "https://robertb2-finalproject.wl.r.appspot.com/loads/4876692648624128"
}
```

Failure

Status: 400 Bad Request

```
{
  "Error": "Request object does not have correct attributes"
}
```

Status: 406 Not Acceptable

```
{
  "Error": "Accept header must be application/json if set"
}
```

Status: 415 Unsupported Media Type

```
{
  "Error": "Content-Type header must be application/json"
}
```

Delete a Load

Allows you to delete a load. If the load being deleted is on a boat, the load will be taken off that boat.

DELETE /loads/:load_id

Request

Path Parameters

Name	Type	Description
------	------	-------------

load_id	String	ID of the load
---------	--------	----------------

Request Body

None

Response

No body

Response Body Format

Success: No body

Failure: JSON

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	
Failure	404 Not Found	No load with this load_id exists, and a 404 status code will be returned.

Response Examples

Success

Status: 204 No Content

Failure

Status: 404 Not Found <pre>{ "Error": "No load with this load_id exists" }</pre>

Assign Load to Boat

A load is put onto a boat. Will update the load carrier and the boats load array. Only the owner of the boat with a valid JWT can assign load to the boat.

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 Body

None

Request Authorization

Bearer Token: JWT provided by logging in

Response

No body

Response Body Format

Success: No body

Failure: JSON

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	Succeeds only if a boat exists with this boat_id, a load exists with this load_id and the load is not already assigned to another boat.
Failure	401 Unauthorized	If the request doesn't include a bearer token or provides an invalid bearer token, the load will not be placed on the boat, and a 401 status code will be returned.
Failure	403 Forbidden	The load with load_id is already assigned to one boat and it has not been removed before trying to assign it to boat with boat_id.
Failure	404 Not Found	No boat with this boat_id exists, and/or no load with this load_id exists.

Response Examples

Success

Status: 204 No Content

Failure

Status: 401 Unauthorized

{

```
{
  "Error": "The request is either missing or has invalid JWT bearer token"
}
```

Status: 403 Forbidden

```
{
  "Error": "The load is already assigned to another boat"
}
```

Status: 404 Not Found

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

Comment

- A load cannot be assigned to multiple boats.
- If a load is already on a boat and has not been removed, a 403 Forbidden response will return.
- This will update the boat object and the load object to represent this new state.

Remove Load From Boat

Load has been taken off the boat. Will update the load carrier and the boats load array. Only the owner of the boat with a valid JWT can assign load to the boat.

```
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 Body

None

Request Authorization

Bearer Token: JWT provided by logging in

Response

No body

Response Body Format

Success: No body

Failure: JSON

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	Succeeds only if a boat exists with this boat_id, a load exists with this load_id and the load is currently on this boat and a correct JWT bearer token is used.
Failure	401 Unauthorized	If the request doesn't include a bearer token or provides an invalid bearer token, the load will not be removed from the boat, and a 401 status code will be returned.
Failure	404 Not Found	No boat with this boat_id has a load with this load_id.

Response Examples

Success

Status: 204 No Content

Failure

Status: 401 Unauthorized

```
{
  "Error": "The request is either missing or has invalid JWT bearer token"
}
```

Status: 404 Not Found

```
{
  "Error": "No boat with this boat_id has a load with this load_id"
}
```

Comment

- This will update the state for the boat and load.

Get a User

Allows you to get an existing user.

GET /users/:user_id

Request

Path Parameters

Name	Type	Description
user_id	String	ID of the user

Request Body

None

Request Header

accept: application/json

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	404 Not Found	No user with this user_id exists, and a 404 status code will be returned.
Failure	406 Not Acceptable	If the Accept header is not set to application/json, then a 406 status code will be returned.

Response Examples

Success

Status: 200 OK

```
{
  "id": "5032354712125440",
  "boats": [],
  "token_id": "101297735428899828017",
  "self": "https://robertb2-finalproject.wl.r.appspot.com/users/5032354712125440"
}
```

Failure

Status: 404 Not Found

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

Status: 406 Not Acceptable

```
{
  "Error": "Accept header must be application/json if set"
}
```


List all Users

List all the users.

GET /users

Request

Path Parameters

None

Request Header

accept: application/json

Request Body

None

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	406 Not Acceptable	If the Accept header is not set to application/json, then a 406 status code will be returned.

Response Examples

Success

Status: 200 OK

```
{
  "total_user_count": 2,
  "users": [
    {
      "id": "5876779642257408",
      "boats": [],
      "token_id": "118438755998561892072",
      "self":
"https://robertb2-finalproject.wl.r.appspot.com/users/5876779642257408"
    },
    {
      "id": "6296062671192064",
      "token_id": "101297735428899828017",
      "boats": [
"https://robertb2-finalproject.wl.r.appspot.com/boats/5469422932197376",

```

```
"https://robertb2-finalproject.wl.r.appspot.com/boats/4809210122469376"  
  ],  
  "self":  
    "https://robertb2-finalproject.wl.r.appspot.com/users/6296062671192064"  
  }  
]  
}
```

Failure

Status: 406 Not Acceptable

```
{  
  "Error": "Accept header must be application/json if set"  
}
```

Invalid Routes

Users

PUT /users
PATCH /users
DELETE /users
POST /users/:user_id
PUT /users/:user_id
PATCH /users/:user_id
DELETE /users/:user_id

Boats

PUT /boats
PATCH /boats
DELETE /boats
POST /boats/:boat_id
GET /boats/:boat_id/loads/:load_id
POST /boats/:boat_id/loads/:load_id
PATCH /boats/:boat_id/loads/:load_id

Loads

PUT /loads
PATCH /loads
DELETE /loads
POST /loads/:load_id

Response Statuses

Outcome	Status Code	Notes
Failure	405 Method Not Allowed	If the route does not accept the HTTP method, then a 405 status code will be returned.

Response Examples

Failure

Status: 405 Method Not Allowed

```
{  
  "Error": "Method not allowed"  
}
```