

Travis Moret
Project hosted at: <https://final-api-morett.uc.r.appspot.com/>

Final Project: API Spec

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Change log

Version	Change	Date
1.0	Initial version.	May 5th, 2021

Note: Design decisions are documented throughout the document following memo's that begin with "Note:"

NOTE**** Remember to add two JWT's, JWT_1 and JWT_2 to the Postman Collection by creating two accounts and getting the JWT's from the Auth0 Sign in.

Get all Users

Allows user to create a new boat.

GET /users

Request

Path Parameters

None

Request Body

None

Request Body Format

None

Request Accept Header

Required

Valid Accept Header

Header	Valid Header Values
Accept	Application/json

Request Content Type Header

Required

Valid Content Type Header

Header	Valid Header Values
Content Type	Application/json

Response Content Type Header

Header	Valid Header Values
Content Type	Application/json

Request JSON Attributes

None

Request Body Example

None

Requires JWT - False

Protected - False

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	

Failure	405 Method Not Allowed	User attempted to use a method not allowed on the endpoint.
Failure	406 Not Acceptable	User requested a response body type other than application/json. Bad Accept header

Response Examples

Success

<p>Status: 200 OK</p> <pre>[{ "id": 5632499082330112, "name": "Travis Moret", "self": "https://final-api-morett.uc.r.appspot.com/users", "user_id": "google-oauth2 105853160144354273034" }, { "id": 5634161670881280, "name": "Travis Moret", "self": "https://final-api-morett.uc.r.appspot.com/users", "user_id": "google-oauth2 105853160144354273034" }]</pre>

Failure

<p>Status: 406 Not Acceptable</p> <pre>{ "Error": "User requested an unsupported media type. Supported media types are: application/json" }</pre>
<p>Status: 405 Method Not Allowed</p> <pre>{ "Error": "Method not allowed. Allowed methods for /users/ are: GET" }</pre>

Create a Boat

Allows user to create a new boat.

POST /boats

Request

Path Parameters

None

Requires JWT - True

Protected - True

Request Body

Required

Request Body Format

JSON

Request Accept Header

Required

Valid Accept Header

Header	Valid Header Values
Accept	Application/json

Request Content Type Header

Required

Valid Content Type Header

Header	Valid Header Values
Content Type	Application/json

Response Content Type Header

Header	Valid Header Values
Content Type	Application/json

Request JSON Attributes

Name	Type	Description	Required?
name	String	The name of the boat.	Yes
type	String	The type of the boat. E.g., Sailboat, Catamaran, etc.	Yes
length	Integer	Length of the boat in feet.	Yes

Request Body Example

<pre>{ "name": "Odyssey", "type": "Yatch", "length": 99 }</pre>

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, the boat must not be created, and 400 status code must be returned. If there is no Authorization header included, this code will also be returned.
Failure	401 Unauthorized	If the Authorization header has a JWT but it is invalid, the boat will not be created and 401 will be returned.
Failure	405 Method Not Allowed	User attempted to use a method not allowed on the endpoint.

Failure	406 Not Acceptable	User requested a response body type other than application/json. Bad Accept header
Failure	415 Unsupported Media	If a body type that is not application/json is sent, the boat will not be created and an error message will occur.

Response Examples

Success

Status: 201 Created <pre>{ "id": 5671636300726272, "length": 99, "loads": [], "name": "Odyssey", "owner": "google-oauth2 105853160144354273034", "self": "https://final-api-morett.uc.r.appspot.com/boats/5671636300726272", "type": "Yatch" }</pre>
--

Failure

Status: 400 Bad Request <pre>{ "Error": "The boat is missing at least one of the required attributes, or the HTTP Header is missing an authorization token" }</pre>
Status: 401 Unauthorized <pre>{ "Error": "Invalid header. Use an RS256 signed JWT Access Token" }</pre>
Status: 406 Not Acceptable <pre>{ "Error": "User requested an unsupported media type. Supported media types are: application/json" }</pre>
Status: 405 Method Not Allowed <pre>{ "Error": "Method not allowed. Allowed methods for /boats are: GET, POST" }</pre>
Status: 415 Unsupported Media <pre>{ "Error": "User sent an unsupported media type. Supported media types are: application/json" }</pre>

Get all Boats

List all the boats using pagination.

GET /boats

Request

Path Parameters

****Not Required****

Name	Type	Description
Page_limit	int	sets the number of boats to show per page
Page_offset	int	sets the number of items to skip, ie: If 5 boats are skipped and 5 are shown per page, an offset of 5 will bring us to page 2 of the boats.

Note: If these values are not specified by the user in the URL, they will default to page limit = 5 and page_offset = 0. They currently aren't specified in Postman so they will default to these values.

Requires JWT - True

Protected - True

Request Body

None

Response

Response Body Format

JSON

Request Accept Header

Required

Valid Accept Header

Header	Valid Header Values
Accept	Application/json

Request Content Type Header

Required

Valid Content Type Header

Header	Valid Header Values
Content Type	Application/json

Response Content Type Header

Header	Valid Header Values
Content Type	Application/json

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	401 Unauthorized	If the Authorization header has a JWT but it is invalid, the boat will not be viewed and 401 will be returned.
Failure	405 Method Not Allowed	User attempted to use a method not allowed on the endpoint.
Failure	406 Not Acceptable	User requested a response body type other than application/json. Bad Accept header.

Response Examples

Success

A page with an offset of 0 (page 1) and a limit of 5 boats per page.

Note: Some boats have loads in this page and some do not

Note: The response has a next_page attribute that provides a URL to the next page of boats

An example with one boat with no loads

```
Status: 200 OK
{
  "Boats": [
    {
      "id": 5671636300726272,
      "length": 99,
      "loads": [],
      "name": "Odyssey",
      "owner": "google-oauth2|105853160144354273034",
      "self": "https://final-api-morett.uc.r.appspot.com/boats/5671636300726272",
      "type": "Yatch"
    }
  ],
  "collection_size": 1
}
```

An example with a full page and with a boat with a load aboard

```
Status: 200 OK
{
  "Boats": [
    {
      "id": 5175344239738880,
      "length": 99,
      "loads": [],
      "name": "Odyssey",
      "owner": "google-oauth2|105853160144354273034",
      "self": "https://final-api-morett.uc.r.appspot.com/boats/5175344239738880",
      "type": "Yatch"
    },
    {
      "id": 5657818854064128,
      "length": 99,
      "loads": [],
      "name": "Odyssey",
      "owner": "google-oauth2|105853160144354273034",
      "self": "https://final-api-morett.uc.r.appspot.com/boats/5657818854064128",
      "type": "Yatch"
    }
  ]
}
```

```

    },
    {
      "id": 5671636300726272,
      "length": 99,
      "loads": [
        {
          "id": 5749890067988480,
          "self": "https://final-api-morett.uc.r.appspot.com/loads/5749890067988480"
        }
      ],
      "name": "Odyssey",
      "owner": "google-oauth2|105853160144354273034",
      "self": "https://final-api-morett.uc.r.appspot.com/boats/5671636300726272",
      "type": "Yatch"
    },
    {
      "id": 5685839489138688,
      "length": 99,
      "loads": [],
      "name": "Odyssey",
      "owner": "google-oauth2|105853160144354273034",
      "self": "https://final-api-morett.uc.r.appspot.com/boats/5685839489138688",
      "type": "Yatch"
    },
    {
      "id": 5736741495373824,
      "length": 99,
      "loads": [],
      "name": "Odyssey",
      "owner": "google-oauth2|105853160144354273034",
      "self": "https://final-api-morett.uc.r.appspot.com/boats/5736741495373824",
      "type": "Yatch"
    }
  ],
  "collection_size": 6,
  "next_page": "https://final-api-morett.uc.r.appspot.com/boats?limit=5&offset=5"
}

```

Failure

Status: 401 Unauthorized

```

{
  "Error": "Invalid header. Use an RS256 signed JWT Access Token"
}

```

Status: 406 Not Acceptable

```

{
  "Error": "User requested an unsupported media type. Supported media types are: application/json"
}

```


}
Status: 405 Method Not Allowed
{
"Error": "Method not allowed. Allowed methods for /boats are: GET, POST"
}

Get a Boat

Allows user to get an existing boat

GET /boats/boat_id

Request

Path Parameters

Name	Type	Description
boat_id	String	ID of the boat

Requires JWT - True

Protected - True

Request Body

None

Response

Response Body Format

JSON

Request Accept Header

Required

Valid Accept Header

Header	Valid Header Values
Accept	Application/json

Request Content Type Header

Required

Valid Content Type Header

Header	Valid Header Values
Content Type	Application/json

Response Content Type Header

Header	Valid Header Values
Content Type	Application/json

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	401 Unauthorized	If the Authorization header has a JWT but it is invalid, the boat will not be viewed and 401 will be returned.

Failure	405 Method Not Allowed	User attempted to use a method not allowed on the endpoint.
Failure	406 Not Acceptable	User requested a response body type other than application/json. Bad Accept header.
Failure	403 Forbidden	No Boat with this id exists, or not authorized to view the boat

Response Examples

- Boats are created without a load assigned, thus the field "loads:" in the response will be an empty array [] by default.
- When loads are assigned, the id and self attributes of the load are assigned to the array, seen in the examples below.

Success

Boat with no load assigned

Status: 200 OK <pre>{ "id": 5651673292734464, "length": 99, "loads": [], "name": "Odyssey", "owner": "google-oauth2 105853160144354273034", "self": "https://final-api-morett.uc.r.appspot.com/boats/5651673292734464", "type": "Yatch" }</pre>
--

Failure

Status: 401 Unauthorized <pre>{ "Error": "Invalid header. Use an RS256 signed JWT Access Token" }</pre>
Status: 406 Not Acceptable <pre>{ "Error": "User requested an unsupported media type. Supported media types are: application/json" }</pre>
Status: 405 Method Not Allowed <pre>{ "Error": "Method not allowed. Allowed methods for /boats/<boat_id> are: PUT, PATCH, DELETE, GET" }</pre>
Status: 403 Forbidden <pre>{ "Error": "No boat with this boat_id exists" }</pre>
Status: 403 Forbidden <pre>{ "Error": "Not authorized to view boat with this id" }</pre>

```
}
```

Edit a Boat

Allows user to get an existing boat

```
PUT /boats/boat_id
```

Request

Path Parameters

Name	Type	Description
boat_id	String	ID of the boat

Requires JWT - True

Protected - True

Request Body

Required

Request Accept Header

Required

Valid Accept Header

Header	Valid Header Values
Accept	Application/json

Request Content Type Header

Required

Valid Content Type Header

Header	Valid Header Values
Content Type	Application/json

Response Content Type Header

Header	Valid Header Values
Content Type	Application/json

Request Attributes

Name	Type	Description	Required?
name	String	The name of the boat.	Yes
type	String	The type of the boat. E.g., Sailboat, Catamaran, etc.	Yes
length	Integer	Length of the boat in feet.	Yes

All three fields are Required in the body for the PUT

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
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Success	200 OK	
Failure	401 Unauthorized	If the Authorization header has a JWT but it is invalid, the boat will not be viewed and 401 will be returned.
Failure	405 Method Not Allowed	User attempted to use a method not allowed on the endpoint.
Failure	406 Not Acceptable	User requested a response body type other than application/json. Bad Accept header.
Failure	403 Forbidden	No Boat with this id exists, or not authorized to view the boat
Failure	400 Bad Request	The body is missing at least one required attribute or there is no Authorization Header
Failure	415 Unsupported Media	If a body type that is not application/json is sent, the boat will not be created and an error message will occur.

Response Examples

- Boats are created without a load assigned, thus the field "loads:" in the response will be an empty array [] by default.
- When loads are assigned, the id and self attributes of the load are assigned to the array, seen in the examples below.

Success

Boat with no load assigned

```
Status: 200 OK
{
  "id": 5651673292734464,
  "length": 1000,
  "loads": [],
  "name": "Odyssey Replacement",
  "owner": "google-oauth2|105853160144354273034",
  "self": "https://final-api-morett.uc.r.appspot.com/boats/5651673292734464",
  "type": "Barge"
}
```

Failure

```
Status: 401 Unauthorized
{
  "Error": "Invalid header. Use an RS256 signed JWT Access Token"
}
```

```
Status: 406 Not Acceptable
{
  "Error": "User requested an unsupported media type. Supported media types are: application/json"
}
```

```
Status: 405 Method Not Allowed
{
  "Error": "Method not allowed. Allowed methods for /boats/<boat_id> are: PUT, PATCH, DELETE, GET"
}
```

Status: 403 Forbidden
{ "Error": "No boat with this boat_id exists" }
Status: 403 Forbidden
{ "Error": "Not authorized to view boat with this id" }
Status: 400 Bad Request
{ "Error": "The boat is missing at least one of the required attributes, or the HTTP Header is missing an authorization token" }
Status: 415 Unsupported Media
{ "Error": "User sent an unsupported media type. Supported media types are: application/json" }

Update a Boat

Allows user to get an existing boat

PATCH /boats/boat_id

Request

Path Parameters

Name	Type	Description
boat_id	String	ID of the boat

Requires JWT - True

Protected - True

Request Body

Request Accept Header

Required

Valid Accept Header

Header	Valid Header Values
Accept	Application/json

Request Content Type Header

Required

Valid Content Type Header

Header	Valid Header Values
Content Type	Application/json

Response Content Type Header

Header	Valid Header Values
Content Type	Application/json

Request Attributes

Required

Name	Type	Description	Required?
name	String	The name of the boat.	Yes
type	String	The type of the boat. E.g., Sailboat, Catamaran, etc.	Yes
length	Integer	Length of the boat in feet.	Yes

Only one of the fields is required for a successful request

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	401 Unauthorized	If the Authorization header has a JWT but it is invalid, the boat will not be viewed and 401 will be returned.
Failure	405 Method Not Allowed	User attempted to use a method not allowed on the endpoint.
Failure	406 Not Acceptable	User requested a response body type other than application/json. Bad Accept header.
Failure	403 Forbidden	No Boat with this id exists, or not authorized to view the boat
Failure	400 Bad Request	The body is missing at least one required attribute or there is no Authorization Header
Failure	415 Unsupported Media	If a body type that is not application/json is sent, the boat will not be created and an error message will occur.

Response Examples

- Boats are created without a load assigned, thus the field "loads:" in the response will be an empty array [] by default.
- When loads are assigned, the id and self attributes of the load are assigned to the array, seen in the examples below.

Success

Boat with no load assigned

Status: 200 OK
<pre>{ "id": 5651673292734464, "length": 1000, "loads": [], "name": "Odyssey Replacement Edit",</pre>

```
"owner": "google-oauth2|105853160144354273034",  
"self": "https://final-api-morett.uc.r.appspot.com/boats/5651673292734464",  
"type": "Barge"  
}
```

Failure

Status: 401 Unauthorized

```
{  
  "Error": "Invalid header. Use an RS256 signed JWT Access Token"  
}
```

Status: 406 Not Acceptable

```
{  
  "Error": "User requested an unsupported media type. Supported media types are: application/json"  
}
```

Status: 405 Method Not Allowed

```
{  
  "Error": "Method not allowed. Allowed methods for /boats/<boat_id> are: PUT, PATCH, DELETE, GET"  
}
```

Status: 403 Forbidden

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

Status: 403 Forbidden

```
{  
  "Error": "Not authorized to view boat with this id"  
}
```

Status: 400 Bad Request

```
{  
  "Error": "The boat is missing at least one of the required attributes, or the HTTP Header is missing an authorization token"  
}
```

Status: 415 Unsupported Media

```
{  
  "Error": "User sent an unsupported media type. Supported media types are: application/json"  
}
```

Delete a Boat

Allows user to delete a boat.

```
DELETE /boats/boat_id
```

Request

Path Parameters

Name	Type	Description
boat_id	String	ID of the boat

Request Body

None

Requires JWT - True

Protected - True

Response

No body

Response Body Format

Success: No body

Failure: JSON

Response Content Type Header

Header	Valid Header Values
Content Type	Application/json

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	
Failure	401 Unauthorized	If the Authorization header has a JWT but it is invalid, the boat will not be deleted and 401 will be returned.
Failure	405 Method Not Allowed	User attempted to use a method not allowed on the endpoint.
Failure	406 Not Acceptable	User requested a response body type other than application/json. Bad Accept header.
Failure	403 Forbidden	No Boat with this id exists, or not authorized to view the boat
Failure	400 Bad Request	The body is missing at least one required attribute or there is no Authorization Header

Response Examples

Note: if a boat is deleted, the loads on it are not deleted, they are just unloaded.

Success

Status: 204 No Content

Failure

Status: 401 Unauthorized { "Error": "Invalid header. Use an RS256 signed JWT Access Token" }
Status: 406 Not Acceptable { "Error": "User requested an unsupported media type. Supported media types are: application/json" }

Status: 405 Method Not Allowed <pre>{ "Error": "Method not allowed. Allowed methods for /boats/<boat_id> are: PUT, PATCH, DELETE, GET" }</pre>
Status: 403 Forbidden <pre>{ "Error": "No boat with this boat_id exists" }</pre>
Status: 403 Forbidden <pre>{ "Error": "Not authorized to delete boat with this id" }</pre>
Status: 400 Bad Request <pre>{ "Error": "The boat is missing at least one of the required attributes, or the HTTP Header is missing an authorization token" }</pre>

Create a load

Allows user to create a new load.

POST /loads

Request

Path Parameters

None

Requires JWT - True

Protected - False

Request Body

Required

Request Body Format

JSON

Request Accept Header

Required

Valid Accept Header

Header	Valid Header Values
Accept	Application/json

Request Content Type Header

Required

Valid Content Type Header

Header	Valid Header Values
Content Type	Application/json

Response Content Type Header

Header	Valid Header Values
Content Type	Application/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.	Yes

Request Body Example

<pre>{ "volume": 5, "content": "LEGO Blocks", "creation_date": "4/21/2020" }</pre>
--

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	201 Created	
Failure	401 Unauthorized	If the Authorization header has a JWT but it is invalid, the load will not be created and 401 will be returned.
Failure	405 Method Not Allowed	User attempted to use a method not allowed on the endpoint.
Failure	406 Not Acceptable	User requested a response body type other than application/json. Bad Accept header.
Failure	400 Bad Request	The body is missing at least one required attribute or there is no Authorization Header
Failure	415 Unsupported Media	If a body type that is not application/json is sent, the load will not be created and an error message will occur.

Response Examples

- Datastore will automatically generate an ID and store it with the entity being created.
- Each load starts unloaded, thus the "carrier:" field of a load is an empty array [] to begin
- The value of the attribute `self` is a live link to the REST resource corresponding to this load

Success

Status: 201 Created
<pre>{ "carrier": [], "content": "LEGO Blocks",</pre>

```
"creation_date": "4/21/2020",
"id": 5732929242136576,
"self": "https://final-api-morett.uc.r.appspot.com/loads/5732929242136576",
"volume": 5
}
```

Failure

Status: 401 Unauthorized
<pre>{ "Error": "Invalid header. Use an RS256 signed JWT Access Token" }</pre>
Status: 406 Not Acceptable
<pre>{ "Error": "User requested an unsupported media type. Supported media types are: application/json" }</pre>
Status: 405 Method Not Allowed
<pre>{ "Error": "Method not allowed. Allowed methods for /loads are: GET, POST" }</pre>
Status: 400 Bad Request
<pre>{ "Error": "The load is missing at least one of the required attributes, or the HTTP Header is missing an authorization token" }</pre>
Status: 415 Unsupported Media
<pre>{ "Error": "User sent an unsupported media type. Supported media types are: application/json" }</pre>

Get all loads

List all the loads using pagination.

```
GET /loads?limit=page_limit&offset=page_offset
```

Request

Path Parameters

*****Not Required *****

Name	Type	Description
Page_limit	int	sets the number of loads to show per page
Page_offset	int	sets the number of items to skip, ie: If three loads are skipped and 3 are shown per page, an offset of 3 will bring us to page 2 of the loads.

Note: If these values are not specified by the user in the URL, they will default to page_limit = 5 and page_offset = 0. They currently aren't specified in Postman so they will default to these values.

Requires JWT - True

Protected - False

Request Body

None

Response

Response Body Format

JSON

Request Accept Header

Required

Valid Accept Header

Header	Valid Header Values
Accept	Application/json

Request Content Type Header

Required

Valid Content Type Header

Header	Valid Header Values
Content Type	Application/json

Response Content Type Header

Header	Valid Header Values
Content Type	Application/json

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	401 Unauthorized	If the Authorization header has a JWT but it is invalid, the boat will not be viewed and 401 will be returned.
Failure	405 Method Not Allowed	User attempted to use a method not allowed on the endpoint.
Failure	406 Not Acceptable	User requested a response body type other than application/json. Bad Accept header.

Response Examples

Note: Some loads will be unassigned and have no carrier, and some will be assigned and have a carrier.

A page with an offset of 0 (page 1) and a limit of 3 loads per page.

Note: The response has a next_page attribute that provides a url to the next page of loads

Success

Status: 200 OK { "Loads": [{ "carrier": [],
--

```

    "content": "LEGO Blocks",
    "creation_date": "4/21/2020",
    "id": 5639823209529344,
    "self": "https://final-api-morett.uc.r.appspot.com/loads/5639823209529344",
    "volume": 5
  },
  {
    "carrier": [],
    "content": "LEGO Blocks",
    "creation_date": "4/21/2020",
    "id": 5644523313037312,
    "self": "https://final-api-morett.uc.r.appspot.com/loads/5644523313037312",
    "volume": 5
  },
  {
    "carrier": [],
    "content": "LEGO Blocks",
    "creation_date": "4/21/2020",
    "id": 5672878150254592,
    "self": "https://final-api-morett.uc.r.appspot.com/loads/5672878150254592",
    "volume": 5
  },
  {
    "carrier": [],
    "content": "LEGO Blocks",
    "creation_date": "4/21/2020",
    "id": 5720592418340864,
    "self": "https://final-api-morett.uc.r.appspot.com/loads/5720592418340864",
    "volume": 5
  },
  {
    "carrier": [
      {
        "id": 5654140684337152,
        "name": "Odyssey",
        "self": "https://final-api-morett.uc.r.appspot.com/boats/5654140684337152"
      }
    ],
    "content": "LEGO Blocks",
    "creation_date": "4/21/2020",
    "id": 5732929242136576,
    "self": "https://final-api-morett.uc.r.appspot.com/loads/5732929242136576",
    "volume": 5
  }
],
"collection_size": 6,
"next_page": "https://final-api-morett.uc.r.appspot.com/loads?limit=5&offset=5"
}

```

Failure

Status: 401 Unauthorized
<pre>{ "Error": "Invalid header. Use an RS256 signed JWT Access Token" }</pre>
Status: 406 Not Acceptable
<pre>{ "Error": "User requested an unsupported media type. Supported media types are: application/json" }</pre>
Status: 405 Method Not Allowed
<pre>{ "Error": "Method not allowed. Allowed methods for /loads are: GET, POST" }</pre>

Get a load

Allows user to get an existing load.

GET /loads/load_id

Request

Path Parameters

Name	Type	Description
load_id	String	ID of the load

Requires JWT - True

Protected - False

Request Body

None

Response

Response Body Format

JSON

Request Accept Header

Required

Valid Accept Header

Header	Valid Header Values
Accept	Application/json

Request Content Type Header

Required

Valid Content Type Header

Header	Valid Header Values
Content Type	Application/json

Response Content Type Header

Header	Valid Header Values
Content Type	Application/json

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	401 Unauthorized	If the Authorization header has a JWT but it is invalid, the load will not be viewed and 401 will be returned.
Failure	405 Method Not Allowed	User attempted to use a method not allowed on the endpoint.
Failure	406 Not Acceptable	User requested a response body type other than application/json. Bad Accept header.
Failure	403 Forbidden	No load with this id exists

Response Examples

Note: Each load may only be assigned to one boat. Thus, although carrier is an array [], it will either be empty or have one carrier object in it.

Success

Load with no carrier:

```
Status: 200 OK
{
  "carrier": [],
  "content": "LEGO Blocks",
  "creation_date": "4/21/2020",
  "id": 5140521274048512,
  "self": "http://127.0.0.1:8080/loads/5140521274048512",
  "volume": 5
}
```

Load with a carrier:

```
Status: 200 OK
{
  "carrier": [
    {
      "id": 5918488069668864,
      "name": "Odyssey",
      "self": "http://127.0.0.1:8080/boats/5918488069668864"
    }
  ],
  "content": "LEGO Blocks",
  "creation_date": "4/21/2020",
  "id": 5140521274048512,
  "self": "http://127.0.0.1:8080/loads/5140521274048512",
  "volume": 5
}
```

```
}
```

Failure

Status: 401 Unauthorized
<pre>{ "Error": "Invalid header. Use an RS256 signed JWT Access Token" }</pre>
Status: 406 Not Acceptable
<pre>{ "Error": "User requested an unsupported media type. Supported media types are: a pplication/json" }</pre>
Status: 405 Method Not Allowed
<pre>{ "Error": "Method not allowed. Allowed methods for /loads/<load_id> are: GET, PUT , PATCH, DELETE" }</pre>
Status: 403 Forbidden
<pre>{ "Error": "No load with this load_id exists" }</pre>

Edit a Load

```
PUT /loads/load_id
```

Request

Path Parameters

Name	Type	Description
load_id	String	ID of the load

Requires JWT - True

Protected - False

Request Body

Required

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.	Yes

All three fields are Required in the body for the PUT

Response

Response Body Format

JSON

Request Accept Header

Required

Valid Accept Header

Header	Valid Header Values
Accept	Application/json

Request Content Type Header

Required

Valid Content Type Header

Header	Valid Header Values
Content Type	Application/json

Response Content Type Header

Header	Valid Header Values
Content Type	Application/json

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	401 Unauthorized	If the Authorization header has a JWT but it is invalid, the load will not be edited and 401 will be returned.
Failure	405 Method Not Allowed	User attempted to use a method not allowed on the endpoint.
Failure	406 Not Acceptable	User requested a response body type other than application/json. Bad Accept header.
Failure	403 Forbidden	No load with this id exists
Failure	400 Bad Request	The body is missing at least one required attribute or there is no Authorization Header
Failure	415 Unsupported Media	If a body type that is not application/json is sent, the load will not be created and an error message will occur.

Response Examples

Success

Load with no carrier assigned

```
Status: 200 OK
{
  "carrier": [],
  "content": "Jello Blocks",
  "creation_date": "6/5/2021",
  "id": "5672878150254592",
  "self": "https://final-api-morett.uc.r.appspot.com/loads/5672878150254592",
  "volume": 10
}
```

Failure

```
Status: 401 Unauthorized
{
  "Error": "Invalid header. Use an RS256 signed JWT Access Token"
}
```

Status: 406 Not Acceptable <pre>{ "Error": "User requested an unsupported media type. Supported media types are: application/json" }</pre>
Status: 405 Method Not Allowed <pre>{ "Error": "Method not allowed. Allowed methods for /loads/<load_id> are: GET, PUT, PATCH, DELETE" }</pre>
Status: 403 Forbidden <pre>{ "Error": "No load with this load_id exists" }</pre>
Status: 400 Bad Request <pre>{ "Error": "The boat is missing at least one of the required attributes, or the HTTP Header is missing an authorization token" }</pre>
Status: 415 Unsupported Media <pre>{ "Error": "User sent an unsupported media type. Supported media types are: application/json" }</pre>

Update a Load

PATCH /loads/load_id

Request

Path Parameters

Name	Type	Description
load_id	String	ID of the load

Requires JWT - True

Protected - False

Request Body

Required

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.	Yes

Only one of the fields is required for a successful request

Response

Response Body Format

JSON

Request Accept Header

Required

Valid Accept Header

Header	Valid Header Values
Accept	Application/json

Request Content Type Header

Required

Valid Content Type Header

Header	Valid Header Values
Content Type	Application/json

Response Content Type Header

Header	Valid Header Values
Content Type	Application/json

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	401 Unauthorized	If the Authorization header has a JWT but it is invalid, the boat will not be updated and 401 will be returned.
Failure	405 Method Not Allowed	User attempted to use a method not allowed on the endpoint.
Failure	406 Not Acceptable	User requested a response body type other than application/json. Bad Accept header.
Failure	403 Forbidden	No load with this id exists
Failure	400 Bad Request	The body is missing at least one required attribute or there is no Authorization Header
Failure	415 Unsupported Media	If a body type that is not application/json is sent, the load will not be created and an error message will occur.

Response Examples

Success

Load with no carrier assigned

Status: 200 OK
<pre>{ "carrier": [], "content": "Pudding", "creation_date": "6/5/2021", "id": 5672878150254592, "self": "https://final-api-morett.uc.r.appspot.com/loads/5672878150254592",</pre>

```
    "volume": 10
  }
```

Failure

Status: 401 Unauthorized
<pre>{ "Error": "Invalid header. Use an RS256 signed JWT Access Token" }</pre>
Status: 406 Not Acceptable
<pre>{ "Error": "User requested an unsupported media type. Supported media types are: application/json" }</pre>
Status: 405 Method Not Allowed
<pre>{ "Error": "Method not allowed. Allowed methods for /loads/<load_id> are: GET, PUT, PATCH, DELETE" }</pre>
Status: 403 Forbidden
<pre>{ "Error": "No load with this load_id exists" }</pre>
Status: 400 Bad Request
<pre>{ "Error": "The load is missing at least one of the required attributes." }</pre>
Status: 415 Unsupported Media
<pre>{ "Error": "User sent an unsupported media type. Supported media types are: application/json" }</pre>
Status: 400 Bad Request
<pre>{ "Error": "The boat is missing at least one of the required attributes, or the HTTP Header is missing an authorization token" }</pre>

Delete a load

Allows user to delete a load.

```
DELETE /loads/load_id
```

Request

Path Parameters

Name	Type	Description
load_id	String	ID of the load

Requires JWT - True

Protected - False

Request Body

None

Response

No body

Response Body Format

Success: No body

Failure: JSON

Valid Content Type Header

Header	Valid Header Values
Content Type	Application/json

Response Content Type Header

Header	Valid Header Values
Content Type	Application/json

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	
Failure	401 Unauthorized	If the Authorization header has a JWT but it is invalid, the boat will not be deleted and 401 will be returned. Also returned 401 for missing auth header.
Failure	405 Method Not Allowed	User attempted to use a method not allowed on the endpoint.
Failure	406 Not Acceptable	User requested a response body type other than application/json. Bad Accept header.
Failure	403 Forbidden	No load with this id exists

Response Examples

Note: if a load is deleted, the ship carrying the load is updated and no longer carries that load.

Success

Status: 204 No Content

Failure

Status: 401 Unauthorized { "Error": "Invalid header. Use an RS256 signed JWT Access Token" }
Status: 406 Not Acceptable { "Error": "User requested an unsupported media type. Supported media types are: application/json" }
Status: 405 Method Not Allowed {

<pre> "Error": "Method not allowed. Allowed methods for /loads/<load_id> are: GET, PUT , PATCH, DELETE" } </pre>
Status: 403 Forbidden <pre> { "Error": "No load with this load_id exists" } </pre>

Load is assigned to a boat

A user assigns a specific load to a specific boat.

PUT /boat_id/loads/load_id

Request

Path Parameters

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

Requires JWT - True

Protected - True

Request Body

None

Request Accept Header

Required

Valid Accept Header

Header	Valid Header Values
Accept	Application/json

Request Content Type Header

Required

Valid Content Type Header

Header	Valid Header Values
Content Type	Application/json

Response Content Type Header

Header	Valid Header Values
Content Type	Application/json

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.
Failure	401 Unauthorized	If the Authorization header has a JWT but it is invalid, the boat will not be deleted and 401 will be returned. Also returned 401 for missing auth header.
Failure	405 Method Not Allowed	User attempted to use a method not allowed on the endpoint.
Failure	406 Not Acceptable	User requested a response body type other than application/json. Bad Accept header.
Failure	403 Forbidden	No load with this id exists or no boat with this id exists

Response Examples

Note: When a load is added to a boat, the boat's "Loads:" array is updated with the new load id and self url, (in addition to any other loads it may have) and the loads "carrier:" array is updated with the id, self url and name of the boat that carries the load.

Note: A boat can be assigned many loads, but a load can only have one carrier. This is called a 'Many to one' relationship.

Success

Status: 204 No Content

Failure

Status: 401 Unauthorized { "Error": "Invalid header. Use an RS256 signed JWT Access Token" }
Status: 406 Not Acceptable { "Error": "User requested an unsupported media type. Supported media types are: application/json" }
Status: 405 Method Not Allowed { "Error": "Method not allowed. Allowed methods for /<boat_id>/loads/<load_id> are: PUT, DELETE" }
Status: 403 Forbidden { "Error": "The specified boat and/or load does not exist" }

Load is removed from a boat

A user removes a specific load from a specific boat.

DELETE /boat_id/loads/load_id

Request

Path Parameters

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

Requires JWT - True

Protected - True

Request Body

None

Request Accept Header

Required

Valid Accept Header

Header	Valid Header Values
Accept	Application/json

Request Content Type Header

Required

Valid Content Type Header

Header	Valid Header Values
Content Type	Application/json

Response Content Type Header

Header	Valid Header Values
Content Type	Application/json

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 removed.
Failure	401 Unauthorized	If the Authorization header has a JWT but it is invalid, the boat will not be deleted and 401 will be returned. Also returned 401 for missing auth header.
Failure	405 Method Not Allowed	User attempted to use a method not allowed on the endpoint.

Failure	406 Not Acceptable	User requested a response body type other than application/json. Bad Accept header.
Failure	403 Forbidden	No load with this id exists or no boat with this id exists, or not authorized to delete load from boat

Response Examples

Note: When a load is removed from a boat, the boat's "loads:" array is reduced by that load. The load's "carrier:" array is reduced by the one carrier and is now empty.

Note: A boat can be assigned many loads, but a load can only have one carrier. This is called a 'Many to one' relationship.

Success

Status: 204 No Content

Failure

Status: 401 Unauthorized <pre>{ "Error": "Invalid header. Use an RS256 signed JWT Access Token" }</pre>
Status: 406 Not Acceptable <pre>{ "Error": "User requested an unsupported media type. Supported media types are: application/json" }</pre>
Status: 405 Method Not Allowed <pre>{ "Error": "Method not allowed. Allowed methods for /<boat_id>/loads/<load_id> are: PUT, DELETE" }</pre>
Status: 403 Forbidden <pre>{ "Error": "The specified boat and/or load does not exist" }</pre>
Status: 403 Forbidden <pre>{ "Error": "Not authorized to edit boat with this id" }</pre>

Data Model

Entities + Attributes in Datastore

Boat (All fields are required)
- id: int, unique, generated + name: string + type: string + length: int + loads: <json object> list + owner: string, generated + self: string, generated

Load (All fields are required)
- id: int, unique, generated + volume: int + content: string + creation_date: string + carrier: <json object> list + self: string, generated

User (All fields are required)
- id: int, unique, generated + name: string, generated + user_id: string, generated + self: string, generated

****Note: Each entity has a self attribute given as a string during output. These are generated at output and are not stored in datastore.

json carrier object in a load
+ id: int (a boat id) + name: string (boat name)

*Includes a self url string also but not stored in datastore

Json load object in boat
+ id: int (load id)

*Includes a self url string also but not stored in datastore

Example outputs of each Entity

Example Load output
{ "carrier": [{ "id": 5676228493180928, "name": "Odyssey", "self": "https://final-api-morett.uc.r.appspot.com/boats/5676228493180928" }] }

```

    }
  ],
  "content": "LEGO Blocks",
  "creation_date": "4/21/2020",
  "id": 5718125026738176,
  "self": "https://final-api-morett.uc.r.appspot.com/loads/5718125026738176",
  "volume": 5
}

```

Example boat output

```

{
  "id": 5676228493180928,
  "length": 99,
  "loads": [
    {
      "id": 5718125026738176,
      "self": "https://final-api-morett.uc.r.appspot.com/loads/5718125026738176"
    }
  ],
  "name": "Odyssey",
  "owner": "google-oauth2|105853160144354273034",
  "self": "https://final-api-morett.uc.r.appspot.com/boats/5676228493180928",
  "type": "Yatch"
}

```

Example users output:

```

[
  {
    "id": 5632499082330112,
    "name": "Travis Moret",
    "self": "https://final-api-morett.uc.r.appspot.com/users",
    "user_id": "google-oauth2|105853160144354273034"
  },
  {
    "id": 5634161670881280,
    "name": "Travis Moret",
    "self": "https://final-api-morett.uc.r.appspot.com/users",
    "user_id": "google-oauth2|105853160144354273034"
  },
]

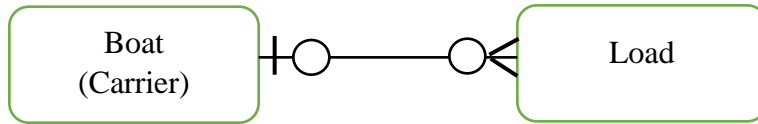
```

Relationship:

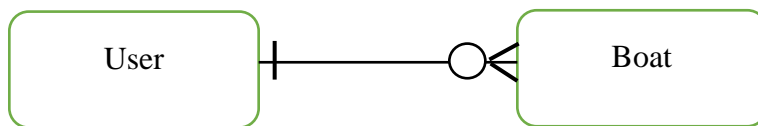
A boat may have 0 (empty) to many loads

A load may have 0 (no carrier) to 1 carrier but can be on at most one carrier

This diagram visualizes this optional (0 to 1) to (0 to many) one to many relationship



Each boat has one and only one user. Loads do not have a user. Thus, boats are protected and loads are not. Each user may have no boats, or many boats.



Modeling a User:

The unique identifier for the user model in the users table is its own generated ID. However, in assigning a user to a boat, the owner of the boat gets the value of the user's user_id, which is their auth code.

If a request needs to supply a user, the person making the request needs to specify their JWT. The API will decode this JWT to verify its authenticity, and then assign the 'sub' field from the JWT to the 'owner' field of the boat.