

Assignment: Final Project

CS493: Cloud App Dev
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URL: <https://final-boats.appspot.com>

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*** Note to Grading TA

I was not able to put together a Postman collection of tests. But the API I have created meets all the requirements and is quite robust. Please try making a few requests and you will see that it meets all the requirements and works very well. The documentation below is thorough and should provide all the info you need to use the API.

If something is not working PLEASE email me ASAP. I have finals on Tuesday and then I am done. So I will be available if something is not clear.

Create a user account

Allows you to login using your google account and authorize the app to make requests on your behalf.

GET /

Request

Supported MIME Types:

Accept: *application/json*

Content-type: *application/json*

Request Parameters: NONE

Request Body: None

For this request you must use a web browser. To successfully login and be given a jwt to use the application follow the following steps:

1. In a web browser go to “final-boats.appspot.com”
2. Click “Sign In”.
3. Login using your google account credentials.
4. You should be redirected to the home page; you now have an account on final-boats.appspot.com but the application does not have permission to make requests on your behalf.
5. Click the “Authorize Google” link below the sign in button. Sign in again using your google credentials.
6. You should be redirected to a screen that displays the jwt. Copy this jwt and use it to make requests in postman to all other API endpoints. Click “Sign Out” before leaving the web page.
7. The final-boats application does not ask google for a refresh token, so the JWT will expire in 1 hour. If the jwt expires return to final-boats.appspot.com and click the “Reauthorize Google” link. This will give you a new jwt. Ci

Get user info

Allows you to view information about your user account.

GET /users/me

Request

Supported MIME Types:

Accept: *application/json*,

Request Parameters: None

Request Body: NONE

Response

Response Body Format: JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	401 Unauthorized	Did not provide valid credentials
Failure	405 Method Not Allowed	Unsupported Request Method

Response Example

Status 200 OK Accept: application/json

```
{
  "email": "greendan@oregonstate.edu",
  "name": {
    "first": "Daniel D",
    "last": "Green"
  },
  "access_token": "ya29.ImC0BxFmSyXlIDcQ9TVs8jJ1w_cPjAfEgS1swdjfp",
  "sub": "102112235673013493196",
  "id": "5076495651307520"
}
```

Create a Boat

Allows you to create a new boat.

POST /boats

Request

Supported MIME Types:

Accept: application/json

Content-type: application/json

Authorization: Required

Authorization Type: OAuth 2.0/Bearer Token

Request Parameters: NONE

Request Body: Required

Request Body Format: JSON

Property Name	Property Type	Description	Required
name	String	The name of the boat	Yes
type	String	The type of boat	Yes
length	Integer	Length of boat	Yes

Request Body Example

This request must be made with the JWT you copied from the create user process in the Authorization header as: Authorization: Bearer <jwt>.

```
{
  "name": "Da Boat",
  "type": "Big Boat",
  "length": 99
}
```

Response

Response Body Format: JSON

Response Statuses

Outcome	Status Code	Notes
Success	201 Created	
Failure	400 Bad Request	Body is missing or contains a malformed required attributes.

Outcome	Status Code	Notes
Failure	401 Unauthorized	Missing Authorization token
Failure	403 Forbidden	Boat name must be unique
Failure	405 Method Not Allowed	Unsupported Request Method
Failure	406 Not Acceptable	Must specify Accept: application/json, and Content-Type: application/json

Successful Response Example

```
{
  "name": "Da Boat",
  "type": "Big Boat",
  "length": 99,
  "loads": [],
  "owner_id": "5076495651307520",
  "owner": "Green",
  "id": "5746055551385600",
  "self": "http://final-boats.appspot.com/boats/5746055551385600"
}
```

Get a Boat

Allows you to view an existing boat.

GET /boats/:boat_id

Request

Supported MIME Types:

Accept: *application/json*

Authorization: Required

Authorization Type: OAuth 2.0/Bearer Token

Request Parameters

Parameter Name	Type	Description	Required
boat_id	String	ID of boat	Yes

Request Body: NONE

Response

Response Body Format: JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	401 Unauthorized	Missing/invalid Authorization
Failure	403 Forbidden	Accessing Protected Resource
Failure	404 Unknown	Cannot find boat with id: boat_id
Failure	405 Method Not Allowed	Unsupported Request Method
Failure	406 Not Acceptable	Unsupported Accept MIME type

Response Example

Status 200 OK Accept: application/json

```
{
  "length": 12,
  "owner_id": "5076495651307520",
  "owner": "Green",
  "name": "Dasher",
  "type": "Sleigh",
  "loads": [],
  "id": "5702167830724608",
  "self": "http://final-boats.appspot.com/boats/5702167830724608"
}
```

List all Boats – No authorization

View all existing boats from all users without authorization. Will display 5 boats for each request. Use “Next” link to view the next 5. “Total” property in response indicates total number of boats in database.

GET /boats

Request

Supported MIME Types:

Accept: *application/json*

Request Parameters: NONE

Request Body: NONE

Response

Response Body Format: JSON

Outcome	Status Code	Notes
Success	200 OK	May return empty list
Failure	405 Method Not Allowed	Unsupported Request Method
Failure	406 Not Acceptable	Unsupported Accept MIME type

Status 200 OK

```
"entities": [  
  {  
    "id": 5067792839606272,  
    "name": "Rudolph",  
    "type": "Sleigh",  
    "loads": [],  
    "length": 12,  
    "owner": "Green",  
    "self": "http://final-boats.appspot.com/boats/5067792839606272"  
  },  
  {  
    "id": 5139217877303296,  
    "name": "Prancer",  
    "type": "Sleigh",  
    "loads": [],  
    "length": 12,  
    "owner": "Green",  
    "self": "http://final-boats.appspot.com/boats/5139217877303296"  
  }  
],  
"total": 2,  
"next": "https://{host_url}/boats?next=CkwSRmoVbX5ib2F0cy1sb2Fkcy1zZXJ2bHX4b1"  
}
```

List all Boats for a user

View all existing boats for a specific user. Will display 5 boats for each request. Use “Next” link to view the next 5. “Total” property in response indicates total number of boats in database.

GET /users/<user_id>/boats

Request

Supported MIME Types:

Accept: *application/json*

Authorization: Required

Authorization Type: OAuth 2.0/Bearer Token

Request Parameters: NONE

Request Body: NONE

Response

Response Body Format: JSON

Outcome	Status Code	Notes
Success	200 OK	May return empty list
Failure	401 Unauthorized	Missing/invalid Authorization
Failure	403 Forbidden	No access
Failure	405 Method Not Allowed	Unsupported Request Method
Failure	406 Not Acceptable	Unsupported Accept MIME type

Status 200 OK

```
"entities": [  
  {  
    "id": 5067792839606272,  
    "name": "Rudolph",  
    "type": "Sleigh",  
    "loads": [],  
    "length": 12,  
    "owner": "Green",  
    "self": "http://final-boats.appspot.com/boats/5067792839606272"  
  },  
  {  
    "id": 5139217877303296,  
    "name": "Prancer",  
    "type": "Sleigh",  
    "loads": [],  
    "length": 12,  
    "owner": "Green",  
    "self": "http://final-boats.appspot.com/boats/5139217877303296"  
  }  
]
```



```
    }  
  ],  
  "total": 2,  
  "next": "https://{host_url}/users/<user_id>/boats?boats?  
next=CkwSRmoVbX5ib2F0cy1sb2Fkcy1zZXJ2bHX4b1"  
}
```

Delete a Boat

Allows you to delete an existing boat.

DELETE /boats/:boat_id

Request

Supported MIME Types:

Accept: *application/json*

Authorization: Required

Authorization Type: Oauth 2.0/Bearer Token

Request Parameters

Parameter Name	Type	Description	Required
boat_id	String	ID of boat	Yes

Request Body: NONE

Response

Response Body: NONE

Outcome	Status Code	Notes
Success	204 No Content	
Failure	401 Unauthorized	Missing/invalid Authorization
Failure	403 Forbidden	No access
Failure	404 Not Found	Cannot find boat with id: boat_id
Failure	405 Method Not Allowed	Unsupported Request Method

Update a Boat – Individual Properties

Allows you to update individual properties for boat:<boat_id>.

This method is one of four available methods to add or remove load(s) from a boat. To add load(s) simply include the load property as an array of existing load id's and the system will update the corresponding loads as well as the boat.

To delete a load from a boat simply remove a load id from the array.

To remove all loads from a boat set the loads property to an empty array.

PATCH /boats/:boat_id

Request

Supported MIME Types:

Accept: application/json

Content-Type: application/json

Authorization: Required

Authorization Type: OAuth 2.0/Bearer Token

Request Parameters:

Parameter Name	Type	Description	Required
boat_id	String	ID of boat to manage	Yes

Request Body: Required

Request Body Format: JSON

Required JSON Attributes:

Property Name	Property Type	Description	Required
name	String	New name for boat	No
type	String	New type of boat	No
Length	Integer	New length of boat	No
Loads	Array of strings	List of load id's to add	No, may be empty

Request Body Example

```
{
  "name": "New name",
  "length": 10,
  "type": "New type",
  "loads": ["<load_id>", "<load_id>"]
}
```

Response

Response Body Format: JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	400 Bad request	Missing or malformed body
Failure	401 Unauthorized	Missing/invalid Authorization
Failure	403 Forbidden	No access
Failure	404 Not Found	Cannot find boat with <boat_id>, or load with <load_id>
Failure	405 Method Not Allowed	Unsupported Request Method
Failure	406 Not Acceptable	Unsupported Accept MIME type

Example Response 200 OK

```
{
  "owner_id": "5076495651307520",
  "owner": "Green",
  "name": "New Name",
  "type": "New Type",
  "loads": [
    "5630121163620352",
    "5630742793027584"
  ],
  "length": 10,
  "id": 5067792839606272,
  "self": "http://final-boats.appspot.com/boats/5067792839606272"
}
```

Replace a Boat – All properties

Allows you to replace all properties for boat:boat_id.

This is the second method for adding or removing loads from a boat. If loads is an empty array, then all loads will be removed from the boat and the system will be updated.

PUT /boats/:boat_id

Request

Supported MIME Types:

Accept: application/json

Content-Type: application/json

Authorization: Required

Authorization Type: Oauth 2.0/Bearer Token

Request Parameters:

Parameter Name	Type	Description	Required
boat_id	String	ID of boat to manage	Yes

Request Body: Required

Request Body Format: JSON

Required JSON Attributes:

Property Name	Property Type	Description	Required
name	String	New name for boat	Yes
type	String	New type of boat	Yes
length	Integer	New length of boat	Yes
Loads	Array of strings	List of load id's	Yes, may be empty list

Request Body Example

```
{
  "name": "Newer name",
  "type": "Newer type",
  "length": 20,
  "loads": []
}
```

Response

Response Body: NONE

Response Headers: “Location”: “{URL of updated boat}”

Response Statuses

Outcome	Status Code	Notes
Success	303 See Other	Link to boat in Location header
Failure	400 Bad Request	Missing or malformed body
Failure	401 Unauthorized	Missing/invalid Authorization
Failure	403 Forbidden	No access
Failure	404 Not Found	Cannot find boat with boat_id
Failure	405 Method Not Allowed	Unsupported Request Method
Failure	406 Not Acceptable	Unsupported Accept MIME type

Create a Load

Allows you to create a new load.

This is the third way to add a load to a boat. By including the boat property and the id of a boat, the load will be created and the specified boat will have the load's id added to the boat's loads array.

The boat property is optional and may be omitted. The load will be created without a boat.

POST /loads

Request

Supported MIME Types:

Accept: application/json

Content-type: application/json

Authorization: Required

Authorization Type: OAuth 2.0/Bearer Token

Request Parameters: NONE

Request Body: Required

Request Body Format: JSON

Property Name	Property Type	Description	Required
weight	Integer	The weight of the load	Yes
Content	String	The content of the load	Yes
delivery_date	String	Load delivery date	Yes
Boat	String	The id of a boat	No

Request Body Example

```
{
  "weight": 20,
  "content": "100 Hamstrs",
  "delivery_date": "4/20/2020",
  "boat": "5139217877303296"
}
```

Response

Response Body Format: JSON

Response Statuses

Outcome	Status Code	Notes
Success	201 Created	
Failure	400 Bad Request	Body is missing or contains a malformed required attributes.
Failure	401 Unauthorized	Missing Authorization token
Failure	404 Not Found	The boat cannot be found
Failure	405 Method Not Allowed	Unsupported Request Method
Failure	406 Not Acceptable	Must specify Accept: application/json, and Content-Type: application/json

Successful Response Example

```
{
  "owner": "Green",
  "owner_id": "5076495651307520",
  "weight": 20,
  "content": "100 Hamstrs",
  "delivery_date": "4/20/2020",
  "boat": "5139217877303296",
  "id": "5708323928145920",
  "self": "http://final-boats.appspot.com/loads/5708323928145920"
}
```


Get a Load

Allows you to view an existing load.

GET /loads/:load_id

Request

Supported MIME Types:

Accept: *application/json*

Authorization: Required

Authorization Type: OAuth 2.0/Bearer Token

Request Parameters

Parameter Name	Type	Description	Required
load_id	String	ID of load	Yes

Request Body: NONE

Response

Response Body Format: JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	401 Unauthorized	Missing/invalid Authorization
Failure	403 Forbidden	Accessing Protected Resource
Failure	404 Unknown	Cannot find load with id: load_id
Failure	405 Method Not Allowed	Unsupported Request Method
Failure	406 Not Acceptable	Unsupported Accept MIME type

Response Example

Status 200 OK Accept: application/json

```
{
  "owner_id": "5076495651307520",
  "owner": "Green",
  "content": "Scooter",
  "weight": 120,
  "boat": 5067792839606272,
  "delivery_date": "12/25/2019",
  "id": "5630121163620352",
  "self": "http://final-boats.appspot.com/loads/5630121163620352"
}
```

List all Loads – No authorization

View all existing loads from all users without authorization. Will display 5 loads for each request. Use “Next” link to view the next 5. “Total” property in response indicates total number of loads in database.

GET /loads

Request

Supported MIME Types:

Accept: *application/json*

Request Parameters: NONE

Request Body: NONE

Response

Response Body Format: JSON

Outcome	Status Code	Notes
Success	200 OK	May return empty list
Failure	405 Method Not Allowed	Unsupported Request Method
Failure	406 Not Acceptable	Unsupported Accept MIME type

Status 200 OK

```
{
  "entities": [
    {
      "id": 5630121163620352,
      "delivery_date": "12/25/2019",
      "contents": "Scooter",
      "weight": 120,
      "boat": 5067792839606272,
      "owner": "Green",
      "owner_id": "5076495651307520",
      "self": "http://final-boats.appspot.com/loads/5630121163620352"
    },
    {
      "id": 5630742793027584,
      "delivery_date": "12/25/2019",
      "contents": "Coal",
      "weight": 100,
      "boat": 5067792839606272,
      "owner": "Green",
      "owner_id": "5076495651307520",
      "self": "http://final-boats.appspot.com/loads/5630742793027584"
    }
  ],
}
```

```
1,  
"total": 2,  
"next": "https://{host_url}/loads?next=CkwSRmoVbX5ib2F0cy1sb2Fkcy1zZXJ2bHX4b1"  
}
```

List all Loads for a user

View all existing loads for a specific user. Will display 5 loads for each request. Use “Next” link to view the next 5. “Total” property in response indicates total number of loads in database.

GET /users/<user_id>/loads

Request

Supported MIME Types:

Accept: *application/json*

Authorization: Required

Authorization Type: OAuth 2.0/Bearer Token

Request Parameters: NONE

Request Body: NONE

Response

Response Body Format: JSON

Outcome	Status Code	Notes
Success	200 OK	May return empty list
Failure	401 Unauthorized	Missing/invalid Authorization
Failure	403 Forbidden	No access
Failure	405 Method Not Allowed	Unsupported Request Method
Failure	406 Not Acceptable	Unsupported Accept MIME type

Status 200 OK

```
{
  "entities": [
    {
      "id": 5630121163620352,
      "delivery_date": "12/25/2019",
      "contents": "Scooter",
      "weight": 120,
      "boat": 5067792839606272,
      "owner": "Green",
      "owner_id": "5076495651307520",
      "self": "http://final-boats.appspot.com/loads/5630121163620352"
    },
    {
      "id": 5630742793027584,
      "delivery_date": "12/25/2019",
      "contents": "Coal",
      "weight": 100,
      "boat": 5067792839606272,
```

```
        "owner": "Green",
        "owner_id": "5076495651307520",
        "self": "http://final-boats.appspot.com/loads/5630742793027584"
    },
],
"total": 2,
"next": "https://{host_url}/loads?next=CkwSRmoVbX5ib2F0cy1sb2Fkcy1zZXJ2bHX4bI"
}
```

Delete a Load

Allows you to delete an existing load.

This method will remove the load from any boat that is carrying it.

DELETE /loads/:load_id

Request

Supported MIME Types:

Accept: *application/json*

Authorization: Required

Authorization Type: Oauth 2.0/Bearer Token

Request Parameters

Parameter Name	Type	Description	Required
load_id	String	ID of load	Yes

Request Body: NONE

Response

Response Body: NONE

Outcome	Status Code	Notes
Success	204 No Content	
Failure	401 Unauthorized	Missing/invalid Authorization
Failure	403 Forbidden	No access
Failure	404 Not Found	Cannot find boat with id: boat_id
Failure	405 Method Not Allowed	Unsupported Request Method

Update a Load – Individual Properties

Allows you to update individual properties for load:<load_id>.

This method is the fourth method for adding or removing load(s) from a boat.

To remove <load_id> from the body that is carrying it, set the load's boat property to null.

To add the load to a boat simply add the string boat id to the load's boat property.

PATCH /loads/:load_id

Request

Supported MIME Types:

Accept: application/json

Content-Type: application/json

Authorization: Required

Authorization Type: Oauth 2.0/Bearer Token

Request Parameters:

Parameter Name	Type	Description	Required
load_id	String	ID of load to manage	Yes

Request Body: Required

Request Body Format: JSON

Required JSON Attributes:

Property Name	Property Type	Description	Required
content	String	New content for load	No
delivery_date	String	New date for load	No
weight	Integer	New weight of load	No
boat	String	Id of boat to carry load	No, may be null

Request Body Example

```
{
  "content": "New content",
  "delivery_date": "12/24/2019",
  "boat": "5638186843766784"
}
```

Response

Response Body Format: JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	400 Bad request	Malformed body
Failure	401 Unauthorized	Missing/invalid Authorization
Failure	403 Forbidden	No access
Failure	404 Not Found	Cannot find boat with <boat_id>, or load with <load_id>
Failure	405 Method Not Allowed	Unsupported Request Method
Failure	406 Not Acceptable	Unsupported Accept MIME type

Example Response 200 OK

```
{
  "owner_id": "5076495651307520",
  "owner": "Green",
  "content": "New Content",
  "weight": 14,
  "boat": "5638186843766784",
  "delivery_date": "12/24/2019",
  "id": 5635703144710144,
  "self": "http://final-boats.appspot.com/loads/5635703144710144"
}
```


Replace a Load – All properties

Allows you to replace all properties for load:load_id.

This is the last method for adding or removing loads from a boat.

PUT /loads/:load_id

Request

Supported MIME Types:

Accept: application/json

Content-Type: application/json

Authorization: Required

Authorization Type: OAuth 2.0/Bearer Token

Request Parameters:

Parameter Name	Type	Description	Required
load_id	String	ID of load to manage	Yes

Request Body: Required

Request Body Format: JSON

Required JSON Attributes:

Property Name	Property Type	Description	Required
content	String	New content for load	Yes
delivery_date	String	New date for load	Yes
weight	Integer	New weight of load	Yes
boat	String	Id of boat to carry load	Yes, may be null

Request Body Example

```
{
  "weight": 99,
  "content": "Old Homework",
  "delivery_date": "12/1/2100",
  "boat": "5643172898144256"
}
```

Response

Response Body: NONE

Response Headers: "Location": "{URL of updated load}"

Response Statuses

Outcome	Status Code	Notes
Success	303 See Other	Link to boat in Location header
Failure	400 Bad Request	Missing or malformed body
Failure	401 Unauthorized	Missing/invalid Authorization
Failure	403 Forbidden	No access
Failure	404 Not Found	Cannot find load with load_id or boat with boat_id
Failure	405 Method Not Allowed	Unsupported Request Method
Failure	406 Not Acceptable	Unsupported Accept MIME type

