

URL: <https://final-project-manukyaa.uw.r.appspot.com>

URL to create an account: <https://final-project-manukyaa.uw.r.appspot.com/login>

URL to view all users: <https://final-project-manukyaa.uw.r.appspot.com/users>

CS493 – Final Project – API Spec

Data Model

The app stores three kinds of entities in Datastore: Users, Boats, and Loads

Users

Property	Data Type	Notes
id	integer	The id of the user, automatically generated by Datastore. Auto-generated.
name	string	The username. Required.
boats	array of strings	Any boats that are owned by the user. Not-required.

Boats

Property	Data Type	Notes
id	integer	The id of the boat, automatically generated by Datastore. Auto-generated.
name	string	Name of the boat. Required.
type	string	Type of the boat. Required.
length	integer	Length of the boat. Required.
loads	array of strings	Any loads that are assigned to the boat. Not-required.
owner	string	The owner of the boat. Required.

Loads

Property	Data Type	Notes
id	integer	The id of the load, automatically generated by Datastore. Auto-generated.
volume	integer	Volume of the load. Required.
item	string	The load item. Required.
creation_date	string	The date the load was created. Required.
carrier	integer	The boat the load is assigned to. Not-required.

Description of Relationship Between Non-User Entities

The Boat entity and Load entity have a relationship where the Boat entity has an attribute called “loads” which is an array of strings containing the Load IDs assigned to that Boat, and the Load entity has a attribute called “carrier” which is an integer of the Boat ID that the load is assigned to.

Description of User Entity

The User entity has a unique auto-generated ID called “id”, and a unique username property called “name”. For requests, the “name” property is used. The supplied JWT is used to get the user’s name, which is then added to the database and an auto-generated ID is assigned to it. The user entity has an attribute called “boats” which is an array of string of the Boat ID that the user owns.

1) Login to a user account (account created with the UI or Auth0)

Endpoint (not-protected)

POST /login

Request MIME Type

application/json

Request Body

```
{  
  "username": "sponge@bob.com",  
  "password": "patrick123!"  
}
```

Status Codes

Outcome	Status Code	Notes
Success	200	
Failure	405	Method not allowed
Failure	406	Client requested "accept" types not supported
Failure	500	Internal server error

Response MIME Type

application/json

Response: Status 200 OK

```
{  
  "access_token": "eyJhbGciOi...",  
  "id_token": "eyJhbGciOi...",  
  "scope": "openid profile email address phone",  
  "expires_in": 86400,  
  "token_type": "Bearer",  
  "user": "sponge@bob.com",  
}
```

```
"boats": []  
}
```

Response: Status 405 Method Not Allowed

```
{  
'Error': 'Method Not Allowed'  
}
```

Response: Status 406 Not Acceptable

```
{  
'Error': 'Not Acceptable: This service only provides JSON responses'  
}
```

Response: Status 500 Internal Server Error

```
{  
"Error": "Internal Server Error"  
}
```

2) Create a boat

Endpoint (protected)

POST /boats

Request MIME Type

application/json

Request Body

```
{  
  "name": "dutchman",  
  "type": "ghostly ship",  
  "length": 100  
}
```

Status Codes

Outcome	Status Code	Notes
Success	201	
Failure	400	Request is missing one of the required parameters
Failure	401	Missing/Invalid JWT
Failure	404	Invalid user
Failure	405	Method not allowed
Failure	406	Client requested “accept” types not supported
Failure	500	Internal server error

Response MIME Type

application/json

Response: Status 201 Created

```
{  
  "id": "5765243099676672",
```

```
"name": "dutchman",
"type": "ghostly ship",
"length": 100,
"loads": [],
"owner": "sponge@bob.com",
"self": "http://localhost:8080/boats/5765243099676672"
}
```

Response: Status 400 Bad Request

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

Response: Status 401 Unauthorized

```
{
  "Error": "Missing/Invalid JWT"
}
```

Response: Status 404 Not Found

```
{
  "Error": "User not found"
}
```

Response: Status 405 Method Not Allowed

```
{
  "Error": "Method Not Allowed"
}
```

Response: Status 406 Not Acceptable

```
{
  "Error": "Not Acceptable: This service only provides JSON responses"
}
```

Response: Status 500 Internal Server Error

```
{  
  "Error": "Internal Server Error"  
}
```

3) GET a boat

Endpoint (protected)

GET /boats/:id

Request MIME Type

application/json

Request Body

None

Status Codes

Outcome	Status Code	Notes
Success	200	
Failure	401	Missing/Invalid JWT
Failure	404	Invalid boat_id
Failure	405	Method not allowed
Failure	406	Client requested "accept" types not supported

Response MIME Type

application/json

Response: Status 200 OK

```
{
  "owner": "sponge@bob.com",
  "name": "dutchman",
  "length": 100,
  "loads": [],
  "type": "ghostly ship",
  "id": "5632139873746944",
  "self": "http://localhost:8080/boats/5632139873746944"
}
```


Response: Status 401 Unauthorized

```
{  
'Error': 'Missing/Invalid JWT'  
}
```

Response: Status 404 Not Found

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

Response: Status 405 Method Not Allowed

```
{  
'Error': 'Method Not Allowed'  
}
```

Response: Status 406 Not Acceptable

```
{  
'Error': 'Not Acceptable: This service only provides JSON responses'  
}
```

4) GET all boats

Endpoint (protected)

GET /boats

Request MIME Type

application/json

Request Body

None

Status Codes

Outcome	Status Code	Notes
Success	200	
Failure	401	Missing/Invalid JWT
Failure	405	Method not allowed
Failure	406	Client requested "accept" types not supported
Failure	500	Internal server error

Response MIME Type

application/json

Response: Status 200 OK

```
{
  "boats": [
    {
      "owner": "sponge@bob.com",
      "name": "dutchman",
      "length": 100,
      "loads": [],
      "type": "ghostly ship",
      "id": "5632139873746944",
    }
  ]
}
```

```
    "self": "http://localhost:8080/boats/5632139873746944"
  },
  {
    "owner": "sponge@bob.com",
    "name": "krusty krab",
    "length": 25,
    "loads": [],
    "type": "krabby patty",
    "id": "5727993989169152",
    "self": "http://localhost:8080/boats/5727993989169152"
  }
]
}
```

Response: Status 401 Unauthorized

```
{
  'Error': 'Missing/Invalid JWT'
}
```

Response: Status 405 Method Not Allowed

```
{
  'Error': 'Method Not Allowed'
}
```

Response: Status 406 Not Acceptable

```
{
  'Error': 'Not Acceptable: This service only provides JSON responses'
}
```

Response: Status 500 Internal Server Error

```
{
  "Error": "Internal Server Error"
}
```

5) Update a boat

Endpoint (protected)

PUT /boats/:id

Request MIME Type

application/json

Request Body

```
{  
  "name": "sandy cheeks",  
  "type": "squirrel",  
  "length": 2500  
}
```

Status Codes

Outcome	Status Code	Notes
Success	303	
Failure	400	Request is missing one of the required parameters
Failure	401	Missing/Invalid JWT
Failure	403	Boat is owned by another user
Failure	404	No boat with this boat_id exists
Failure	405	Method not allowed
Failure	406	Client requested “accept” types not supported
Failure	415	Unsupported Media Type

Response MIME Type

application/json

Response: Status 303 See Other

```
{
  "id": "5632139873746944",
  "name": "sandy cheeks",
  "type": "squirrel",
  "length": 2500,
  "loads": [],
  "owner": "sponge@bob.com",
  "self": "http://localhost:8080/boats/5632139873746944"
}
```

Response: Status 400 Bad Request

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

Response: Status 401 Unauthorized

```
{
  'Error': 'Missing/Invalid JWT'
}
```

Response: Status 403 Forbidden

```
{
  "Error": "Boat is owned by another user"
}
```

Response: Status 404 Not Found

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

Response: Status 405 Method Not Allowed

```
{
  'Error': 'Method Not Allowed'
}
```

```
}
```

Response: Status 406 Not Acceptable

```
{
```

```
'Error': 'Not Acceptable: This service only provides JSON responses'
```

```
}
```

Response: Status 415 Unsupported Media Type

```
{
```

```
"Error": "Server only accepts application/json data"
```

```
}
```

6) Partial-Update a boat

Endpoint (protected)

PATCH /boats/:id

Request MIME Type

application/json

Request Body

```
{  
  "name": "plankton",  
  "type": "evil"  
}
```

Status Codes

Outcome	Status Code	Notes
Success	200	
Failure	400	Request is missing all of the possible parameters
Failure	401	Missing/Invalid JWT
Failure	403	Boat is owned by another user
Failure	404	No boat with this boat_id exists
Failure	405	Method not allowed
Failure	406	Client requested "accept" types not supported
Failure	415	Unsupported Media Type

Response MIME Type

application/json

Response: Status 200 OK

```
{
  "id": "5632139873746944",
  "name": "plankton",
  "type": "evil",
  "length": 2500,
  "loads": [],
  "owner": "sponge@bob.com",
  "self": "http://localhost:8080/boats/5632139873746944"
}
```

Response: Status 400 Bad Request

```
{
  "Error": "The request object is missing all of the possible attributes"
}
```

Response: Status 401 Unauthorized

```
{
  'Error': 'Missing/Invalid JWT'
}
```

Response: Status 403 Forbidden

```
{
  "Error": "Boat is owned by another user"
}
```

Response: Status 404 Not Found

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

Response: Status 405 Method Not Allowed

```
{
  'Error': 'Method Not Allowed'
}
```


Response: Status 406 Not Acceptable

```
{  
'Error': 'Not Acceptable: This service only provides JSON responses'  
}
```

Response: Status 415 Unsupported Media Type

```
{  
"Error": "Server only accepts application/json data"  
}
```

7) Create a load

Endpoint (not-protected)

POST /loads

Request MIME Type

application/json

Request Body

```
{  
  "volume": 100,  
  "item": "Patties",  
  "creation_date": "12/05/2023"  
}
```

Status Codes

Outcome	Status Code	Notes
Success	201	
Failure	400	Request is missing one of the required parameters
Failure	405	Method not allowed
Failure	406	Client requested "accept" types not supported

Response MIME Type

application/json

Response: Status 201 Created

```
{  
  "id": "5721207605297152",  
  "volume": 100,  
  "item": "Patties",  
  "creation_date": "12/05/2023",  
}
```

```
"carrier": null,  
"self": "http://localhost:8080/loads/5721207605297152"  
}
```

Response: Status 400 Bad Request

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

Response: Status 405 Method Not Allowed

```
{  
'Error': 'Method Not Allowed'  
}
```

Response: Status 406 Not Acceptable

```
{  
'Error': 'Not Acceptable: This service only provides JSON responses'  
}
```

8) GET a load

Endpoint (not-protected)

GET /loads/:id

Request MIME Type

application/json

Request Body

None

Status Codes

Outcome	Status Code	Notes
Success	200	
Failure	404	Invalid load_id
Failure	405	Method not allowed
Failure	406	Client requested "accept" types not supported

Response MIME Type

application/json

Response: Status 200 OK

```
{  
  "volume": 100,  
  "item": "Patties",  
  "carrier": null,  
  "creation_date": "12/05/2023",  
  "id": "5721207605297152",  
  "self": "http://localhost:8080/loads/5721207605297152"  
}
```

Response: Status 404 Not Found

```
{  
'Error': 'No boat with this load_id exists'  
}
```

Response: Status 405 Method Not Allowed

```
{  
'Error': 'Method Not Allowed'  
}
```

Response: Status 406 Not Acceptable

```
{  
'Error': 'Not Acceptable: This service only provides JSON responses'  
}
```

9) GET all loads

Endpoint (not-protected)

GET /loads

Request MIME Type

application/json

Request Body

None

Status Codes

Outcome	Status Code	Notes
Success	200	
Failure	405	Method not allowed
Failure	406	Client requested "accept" types not supported

Response MIME Type

application/json

Response: Status 200 OK

```
{
  "loads": [
    {
      "volume": 20,
      "item": "Buns",
      "carrier": null,
      "creation_date": "12/03/2023",
      "id": "5706627130851328",
      "self": "http://localhost:8080/loads/5706627130851328"
    },
    {
```

```
    "volume": 100,  
    "item": "Patties",  
    "carrier": null,  
    "creation_date": "12/05/2023",  
    "id": "5721207605297152",  
    "self": "http://localhost:8080/loads/5721207605297152"  
  }  
]  
}
```

Response: Status 405 Method Not Allowed

```
{  
'Error': 'Method Not Allowed'  
}
```

Response: Status 406 Not Acceptable

```
{  
'Error': 'Not Acceptable: This service only provides JSON responses'  
}
```

10) Update a load

Endpoint (not-protected)

PUT /loads/:id

Request MIME Type

application/json

Request Body

```
{  
  "volume": 1000,  
  "item": "Pickles",  
  "creation_date": "12/06/2023"  
}
```

Status Codes

Outcome	Status Code	Notes
Success	303	
Failure	400	Request is missing one of the required parameters
Failure	404	No load with this load_id exists
Failure	405	Method not allowed
Failure	406	Client requested “accept” types not supported
Failure	415	Unsupported Media Type

Response MIME Type

application/json

Response: Status 303 See Other

```
{  
  "id": "5721207605297152",
```



```
"volume": 1000,  
"item": "Pickles",  
"creation_date": "12/06/2023",  
"carrier": null,  
"self": "http://localhost:8080/loads/5721207605297152"  
}
```

Response: Status 400 Bad Request

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

Response: Status 404 Not Found

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

Response: Status 405 Method Not Allowed

```
{  
'Error': 'Method Not Allowed'  
}
```

Response: Status 406 Not Acceptable

```
{  
'Error': 'Not Acceptable: This service only provides JSON responses'  
}
```

Response: Status 415 Unsupported Media Type

```
{  
"Error": "Server only accepts application/json data"  
}
```

11) Partial-Update a load

Endpoint (not-protected)

PATCH /loads/:id

Request MIME Type

application/json

Request Body

```
{  
  "volume": 5000  
}
```

Status Codes

Outcome	Status Code	Notes
Success	200	
Failure	400	Request is missing all of the possible parameters
Failure	404	No load with this load_id exists
Failure	405	Method not allowed
Failure	406	Client requested "accept" types not supported
Failure	415	Unsupported Media Type

Response MIME Type

application/json

Response: Status 200 OK

```
{  
  "id": "5721207605297152",  
  "volume": 5000,  
  "item": "Pickles",  
}
```

```
"creation_date": "12/06/2023",  
"carrier": null,  
"self": "http://localhost:8080/loads/5721207605297152"  
}
```

Response: Status 400 Bad Request

```
{  
"Error": "The request object is missing all of the possible attributes"  
}
```

Response: Status 404 Not Found

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

Response: Status 405 Method Not Allowed

```
{  
'Error': 'Method Not Allowed'  
}
```

Response: Status 406 Not Acceptable

```
{  
'Error': 'Not Acceptable: This service only provides JSON responses'  
}
```

Response: Status 415 Unsupported Media Type

```
{  
"Error": "Server only accepts application/json data"  
}
```

12) Create relationship between a boat and a load

Endpoint (protected)

PUT /boats/:bid/loads/:lid

Request MIME Type

application/json

Request Body

None

Status Codes

Outcome	Status Code	Notes
Success	204	
Failure	401	Missing/Invalid JWT
Failure	403	The load is already loaded on another boat
Failure	404	The specified boat and/or load does not exist
Failure	405	Method not allowed
Failure	406	Client requested "accept" types not supported
Failure	500	Internal server error

Response MIME Type

application/json

Response: Status 204 No Content

None

Response: Status 401 Unauthorized

{

'Error': 'Missing/Invalid JWT'

```
}
```

Response: Status 403 Forbidden

```
{  
"Error": "The load is already loaded on another boat"  
}
```

Response: Status 404 Not Found

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

Response: Status 405 Method Not Allowed

```
{  
'Error': 'Method Not Allowed'  
}
```

Response: Status 406 Not Acceptable

```
{  
'Error': 'Not Acceptable: This service only provides JSON responses'  
}
```

Response: Status 500 Internal Server Error

```
{  
"Error": "Internal Server Error"  
}
```

13) Get all the loads of a specified boat

Endpoint (protected)

GET /boats/:id/loads

Request MIME Type

```
application/json
```

Request Body

None

Status Codes

Outcome	Status Code	Notes
Success	200	
Failure	401	Missing/Invalid JWT
Failure	403	Boat is owned by another user
Failure	404	No boat with this boat_id exists
Failure	405	Method not allowed
Failure	406	Client requested “accept” types not supported
Failure	500	Internal server error

Response MIME Type

```
application/json
```

Response: Status 200 OK

```
{
  "owner": "sponge@bob.com",
  "name": "plankton",
  "length": 2500,
  "loads": [
```

```
{
  "id": "5721207605297152",
  "item": "Pickles",
  "creation_date": "12/06/2023",
  "volume": 5000,
  "self": "http://localhost:8080/loads/5721207605297152"
},
{
  "id": "5706627130851328",
  "item": "Buns",
  "creation_date": "12/03/2023",
  "volume": 20,
  "self": "http://localhost:8080/loads/5706627130851328"
}
],
"type": "evil",
"id": "5632139873746944",
"self": "http://localhost:8080/boats/5632139873746944"
}
```

Response: Status 401 Unauthorized

```
{
  "Error": "Missing/Invalid JWT"
}
```

Response: Status 403 Forbidden

```
{
  "Error": "Boat is owned by another user"
}
```

Response: Status 404 Not Found

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

Response: Status 405 Method Not Allowed

```
{  
'Error': 'Method Not Allowed'  
}
```

Response: Status 406 Not Acceptable

```
{  
'Error': 'Not Acceptable: This service only provides JSON responses'  
}
```

Response: Status 500 Internal Server Error

```
{  
"Error": "Internal Server Error"  
}
```


14) Delete relationship between a boat and a load

Endpoint (protected)

DELETE /boats/:bid/loads/:lid

Request MIME Type

application/json

Request Body

None

Status Codes

Outcome	Status Code	Notes
Success	204	
Failure	401	Missing/Invalid JWT
Failure	403	Boat is owned by another user
Failure	404	No boat with this boat_id is loaded with the load with this load_id
Failure	405	Method not allowed
Failure	406	Client requested "accept" types not supported
Failure	500	Internal server error

Response MIME Type

application/json

Response: Status 204 No Content

None

Response: Status 401 Unauthorized

{

```
'Error': 'Missing/Invalid JWT'
}
```

Response: Status 403 Forbidden

```
{
  "Error": "Boat is owned by another user"
}
```

Response: Status 404 Not Found

```
{
  "Error": "No boat with this boat_id is loaded with the load with this load_id"
}
```

Response: Status 405 Method Not Allowed

```
{
  'Error': 'Method Not Allowed'
}
```

Response: Status 406 Not Acceptable

```
{
  'Error': 'Not Acceptable: This service only provides JSON responses'
}
```

Response: Status 500 Internal Server Error

```
{
  "Error": "Internal Server Error"
}
```

15) Delete a load

Endpoint (not-protected)

DELETE /loads/:id

Request MIME Type

application/json

Request Body

None

Status Codes

Outcome	Status Code	Notes
Success	204	
Failure	404	No load with this load_id exists
Failure	405	Method not allowed
Failure	406	Client requested "accept" types not supported

Response MIME Type

application/json

Response: Status 204 No Content

None

Response: Status 404 Not Found

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

Response: Status 405 Method Not Allowed

```
{
```

```
'Error': 'Method Not Allowed'  
}
```

Response: Status 406 Not Acceptable

```
{  
'Error': 'Not Acceptable: This service only provides JSON responses'  
}
```

16) Delete a boat

Endpoint (protected)

DELETE /boats/:id

Request MIME Type

application/json

Request Body

None

Status Codes

Outcome	Status Code	Notes
Success	204	
Failure	401	Missing/Invalid JWT
Failure	403	Boat is owned by another person
Failure	404	No boat with this boat_id exists
Failure	405	Method not allowed
Failure	406	Client requested "accept" types not supported
Failure	500	Internal server error

Response MIME Type

application/json

Response: Status 204 No Content

None

Response: Status 401 Unauthorized

{

'Error': 'Missing/Invalid JWT'

```
}
```

Response: Status 403 Forbidden

```
{  
"Error": "Boat is owned by another person"  
}
```

Response: Status 404 Not Found

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

Response: Status 405 Method Not Allowed

```
{  
'Error': 'Method Not Allowed'  
}
```

Response: Status 406 Not Acceptable

```
{  
'Error': 'Not Acceptable: This service only provides JSON responses'  
}
```

Response: Status 500 Internal Server Error

```
{  
"Error": "Internal Server Error"  
}
```