Portfolio Assignment: API Spec

CS 493: Cloud Application Development

URL deployed and login access: https://cloud-final-388620.uc.r.appspot.com/

Jacob Moore

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Oregon State University

Last Update: 06/11/2023

Change log

Version	Change	Date
1.0	Initial version.	Apr 26, 2023

Data Model

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

Boat

Property	Data Type	Notes
id	Integer	The id of the boat.
name	String	Name of the boat.
type	String	Type of the boat. E.g., Sailboat, Catamaran, etc.
length	Integer	The length of the boat in feet.
loads	Array	A list of dictionaries containing the id of each load assigned to the boat. Nullable.
owner	String	User id value of owner of the boat.

Load

Property	Data Type	Notes
id	Integer	The id of the load.
volume	Integer	The number of the load.
carrier	Integer	Boat_id of boat carrying load. Nullable.
description	String	Description of the load.
creation_date	String	String representation of date created in format MM/DD/YYYY. NOTE: Immutable

User

Property	Data Type	Notes
user_id	Integer	The id of the user. This id is the "sub" value of the user's jwt. NOTE: Immutable
name	String	Name of the user.
boats	Array	List of boat ids owned by user. Nullable.

View all Users

List all the users.

GET /users

Request

Path Parameters

None

Request Body

None

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	

Response Examples

Success

```
Status: 200 OK

[
  {
    "boats": [],
    "name": "cheese",
    "user_id": "auth0|64824f251ed1b7c930dc5694"
  },
  {
    "name": "mooreja2",
    "user_id": "auth0|647f9d8cfef29fd104dbc797",
    "boats": []
  },
  {
    "user_id": "auth0|647a5330f0c4adc889598267",
    "name": "jacobtaylormoore",
    "boats": []
  }
]
```

Create a Boat PROTECTED

Allows you to create a new boat.

POST /boats

Request

Path Parameters

None

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

Name	Description	Required?
name	The name of the boat.	Yes
type	The type of the boat. E.g., Sailboat, Catamaran, etc.	Yes
length	Length of the boat in feet.	Yes
loads	Array of loads carried (id of load). If included on creation, must be empty array. eg "loads": []	No

Request Body Example

```
{
  "name": "Odyssey",
  "type": "Yatch",
  "length": 99
}
```

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	201 Created	
Failure	400 Bad Request	The boat was either missing one or more of the required attributes or the input was invalid.
Failure	401 Unauthorized	The boat was missing or had unauthorized jwt.
Failure	405 Method not allowed	The method of the request is not acceptable for this endpoint.
Failure	406 Not Acceptable	The endpoint cannot return data in the specified accepted mime types.

Response Examples

Success

Status: 201 Created

```
{
    "type": "Yatch",
    "owner": "auth0|647a5330f0c4adc889598267",
    "loads": [],
    "length": 99,
    "name": "Odyssey",
    "id": 5716561121771520,
    "self": "https://cloud-final-388620.uc.r.appspot.com/boats/5716561121771520"
}
```

Failure

Status: 400 Bad Request

```
{
"Error":  "The request object is missing required attributes or contains invalid
attributes."
}
```

Status: 401 Bad Request

```
{
"Error":  "The jwt is missing or not valid."
}
```

Status: 405 Method Not Allowed

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

Status: 406 Not Acceptable

```
{
"Error": "Cannot produce acceptable response body."
}
```

View a Boat PROTECTED

Allows you to get an existing boat

GET /boats/:boat_id

Request

Path Parameters

Name	Description
boat_id	ID of the boat

Request Body

None

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	401 Unauthorized	The jwt was missing or not acceptable
Failure	403 Forbidden	The user does not have permission
Failure	404 Not Found	No boat with this boat_id exists
Failure	406 Not Acceptable	The endpoint cannot return data in the specified accepted mime types.

Response Examples

Success

Status: 200 OK

```
{
    "id": 5644523313037312,
    "length": 23,
    "loads": [],
    "name": "Iliad",
    "owner": "auth0|64824f251ed1b7c930dc5694",
    "self": "https://cloud-final-388620.uc.r.appspot.com/boats/5644523313037312",
    "type": "Car"
}
```

Failure

Status: 401 Unauthorized

```
{
    "Error": "The jwt is missing or not valid."
}
```

Status: 403 Forbidden

```
{
    "Error": "The user does not have permission for this."
}
```

Status: 404 Not Found

```
{
    "Error": "The requested entity was not found."
}
```

Status: 406 Not Acceptable

```
{
"Error": "Cannot produce acceptable response body."
}
```

View all Boats PROTECTED

List all the boats.

GET /boats

Request

Path Parameters

None

Request Body

None

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	401 Unauthorized	The jwt was missing or not acceptable
Failure	406 Not Acceptable	The endpoint cannot return data in the specified accepted mime types.

Response Examples

Success

```
Status: 200 OK

{
  "boats": [
    {
      "name": "in",
      "loads": [],
      "length": 100,
      "owner": "auth0|647a5330f0c4adc889598267",
      "type": "boats",
      "id": 5632139873746944
    },
    {
      "loads": [],
      "type": "Boaty",
      "owner": "auth0|647a5330f0c4adc889598267",
      "name": "Another one",
      "length": 999,
      "id": 5650452045627392
    },
    {
      "length": 99,
      "type": "Yatch",
```

```
        "name": "Odyssey",
        "loads": [],
        "owner": "auth0|647a5330f0c4adc889598267",
        "id": 5662792157757440
      },
      {
        "owner": "auth0|647a5330f0c4adc889598267",
        "loads": [],
        "length": 9,
        "type": "Yat",
        "name": "Od",
        "id": 5678677161410560
      },
      {
        "type": "boat",
        "owner": "auth0|647a5330f0c4adc889598267",
        "loads": [],
        "name": "the",
        "length": 3,
        "id": 5710353417633792
      }
  ],
  "next": "https://cloud-final-388620.uc.r.appspot.com/boats?limit=5&offset=5"
}
```

Failure

Status: 401 Unauthorized

```
{
    "Error": "The jwt is missing or not valid."
}
```

Status: 406 Not Acceptable

```
{
"Error": "Cannot produce acceptable response body."
}
```

Put a Boat PROTECTED

Allows you to edit an existing boat with PUT

PUT /boats/:boat_id

Request

Path Parameters

Name	Description
boat_id	ID of the boat

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

Name	Description	Required?
name	The name of the boat.	Yes
type	The type of the boat. E.g., Sailboat, Catamaran, etc.	Yes
length	Length of the boat in feet.	Yes
loads	Array of loads carried (id of load). If included, must be	No

Request Body Example

```
{
  "name": "A second one test",
  "type": "Boaty McBoatface",
  "length": 111,
  "loads": []
}
```

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	400 Bad Request	The boat was either missing one or more of the required attributes or the input was invalid.
Failure	401 Unauthorized	The jwt was missing or not acceptable
Failure	403 Forbidden	The user does not have permission
Failure	404 Not Found	No boat with this boat_id exists
Failure	406 Not Acceptable	The endpoint cannot return data in the specified accepted mime types.

Response Examples

Success

Status: 200 OK

```
{
    "id": 5644523313037312,
    "length": 23,
    "loads": [],
    "name": "Iliad",
    "owner": "auth0|64824f251ed1b7c930dc5694",
    "self": "https://cloud-final-388620.uc.r.appspot.com/boats/5644523313037312",
    "type": "Car"
}
```

Failure

Status: 400 Bad Request

```
{
"Error":  "The request object is missing required attributes or contains invalid attributes."
}
```

Status: 401 Unauthorized

```
{
    "Error": "The jwt is missing or not valid."
}
```

Status: 403 Forbidden

```
{

    "Error": "The user does not have permission for this."

}
```

Status: 404 Not Found

```
{
    "Error": "The requested entity was not found."
}
```

Status: 406 Not Acceptable

```
{
"Error": "Cannot produce acceptable response body."
}
```

Patch a Boat PROTECTED

Allows you to edit parts of an existing boat with PATCH

PUT /boats/:boat_id

Request

Path Parameters

Name	Description
boat_id	ID of the boat

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

Name	Description	Required?
name	The name of the boat.	No
type	The type of the boat. E.g., Sailboat, Catamaran, etc.	No
length	Length of the boat in feet.	No
loads	Array of loads carried (id of load)	No

Request Body Example

```
{
  "name": "Patch Test",
  "type": "Patch Test"
}
```

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	400 Bad Request	The boat was either missing one or more of the required attributes or the input was invalid.
Failure	401 Unauthorized	The jwt was missing or not acceptable
Failure	403 Forbidden	The user does not have permission
Failure	404 Not Found	No boat with this boat_id exists
Failure	406 Not Acceptable	The endpoint cannot return data in the specified accepted mime types.

Response Examples

Success

Status: 200 OK

```
{
    "id": 5644523313037312,
    "length": 23,
    "loads": [],
    "name": "Patch Test",
    "owner": "auth0|64824f251ed1b7c930dc5694",
    "self": "https://cloud-final-388620.uc.r.appspot.com/boats/5644523313037312",
    "type": "Patch Test"
}
```

Failure

```
Status: 400 Bad Request

{
"Error":  "The request object is missing required attributes or contains invalid
attributes."
}
```

```
Status: 401 Unauthorized

{
    "Error": "The jwt is missing or not valid."
}
```

```
Status: 403 Forbidden

{

    "Error": "The user does not have permission for this."

}
```

```
Status: 404 Not Found

{
    "Error": "The requested entity was not found."
}
```

```
Status: 406 Not Acceptable

{
"Error": "Cannot produce acceptable response body."
}
```

Delete a Boat PROTECTED

Allows you to delete a boat. Note that if the boat currently has a load, deleting the boat makes the load change its carrier to null. It also removes boat from owner's boats list.

DELETE /boats/:boat_id

Request

Path Parameters

Name	Description
boat_id	ID of the boat

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	401 Unauthorized	The jwt was missing or not acceptable
Failure	403 Forbidden	The user does not have permission
Failure	404 Not Found	No boat with this boat_id exists

Response Examples

Success

Status: 204 No Content

Failure

Status: 401 Unauthorized
 	
{
    "Error": "The jwt is missing or not valid."
}

Status: 403 Forbidden
 	
{
 	
    "Error": "The user does not have permission for this."
 	
}

Status: 404 Not Found {   "Error": "The requested entity was not found."

```
}
```

Create a Load

Allows you to create a new load. NOTE: Do not include carrier in POST request, this must be added later.

POST /loads

Request

Path Parameters

None

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

Name	Description	Required?
volume	Volume number of load	Yes
description	Description of the load.	Yes

Request Body Example

```
{
    "volume": 23,
    "description": "Twenty-three large male zebras."
}
```

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	201 Created	
Failure	400 Bad Request	The load was either missing one or more of the required attributes or the input was invalid.
Failure	405 Method not allowed	The method of the request is not acceptable for this endpoint.
Failure	406 Not Acceptable	The endpoint cannot return data in the specified accepted mime types.

Response Examples

Success

```
Status: 201 Created

{
    "carrier": null,
    "creation_date": "10/06/2023",
    "description": "Twenty-three large male zebras.",
```

```
    "id": 5155796803387392,
    "self": "https://cloud-final-388620.uc.r.appspot.com/loads/5155796803387392",
    "volume": 23
}
```

Failure

Status: 400 Bad Request

```
{
"Error":  "The request object is missing required attributes or contains invalid
attributes."
}
```

Status: 405 Method Not Allowed

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

Status: 406 Not Acceptable

```
{
"Error": "Cannot produce acceptable response body."
}
```

View a Load

Allows you to get an existing load

GET /loads/:load_id

Request

Path Parameters

Name	Description
load_id	ID of the load

Request Body

None

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
Failure	406 Not Acceptable	The endpoint cannot return data in the specified accepted mime types.

Response Examples

Success

```
Status: 200 OK

{
    "volume": 23,
    "carrier": null,
    "description": "Twenty-three large male zebras.",
    "creation_date": "10/06/2023",
    "id": 5726177821982720,
    "self": "https://cloud-final-388620.uc.r.appspot.com/loads/5726177821982720"
}
```

Failure

```
Status: 404 Not Found

{
    "Error": "The requested entity was not found."
}
```

View all Loads

List all the loads.

GET /loads

Request

Path Parameters

None

Request Body

None

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	406 Not Acceptable	The endpoint cannot return data in the specified accepted mime types.

Response Examples

Success

```
Status: 200 OK

{
   "loads": [
     {
        "volume": 23,
        "carrier": null,
        "creation_date": "10/06/2023",
        "description": "Twenty-three large male zebras.",
        "id": 5155796803387392
     },
     {
        "carrier": null,
        "volume": 2,
        "creation_date": "10/06/2023",
        "description": "Test two.",
        "id": 5660308458700800
     },
     {
        "description": "Test four.",
        "creation_date": "10/06/2023",
        "carrier": null,
        "volume": 4,
        "id": 5681931941314560
```

```
        },
        {
            "description": "Test five.",
            "volume": 5,
            "carrier": null,
            "creation_date": "10/06/2023",
            "id": 5685839489138688
        },
        {
            "carrier": null,
            "description": "Test six.",
            "creation_date": "10/06/2023",
            "volume": 6,
            "id": 5688703292801024
        }
    ],
    "next": "https://cloud-final-388620.uc.r.appspot.com/loads?limit=5&offset=5"
}
```

Failure

Status: 406 Not Acceptable

```
{
"Error": "Cannot produce acceptable response body."
}
```

Put a Load

Allows you to edit an existing load with PUT

PUT /loads/:load_id

Request

Path Parameters

Name	Description
load_id	ID of the load

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

Name	Description	Required?
volume	The number of the load.	Yes
description	Description of the load.	Yes

Request Body Example

```
{
    "volume": 5,
    "description": "Test put three."
}
```

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	400 Bad Request	The load was either missing one or more of the required attributes or the input was invalid.
Failure	404 Not Found	No load with this load_id exists
Failure	406 Not Acceptable	The endpoint cannot return data in the specified accepted mime types.

Response Examples

Success

```
Status: 200 OK

{
    "volume": 5,
    "carrier": null,
    "description": "Test put three.",
```

```
   "creation_date": "10/06/2023",
   "id": 5755374237908992,
   "self": "https://cloud-final-388620.uc.r.appspot.com/loads/5755374237908992"
}
```

Failure

```
Status: 400 Bad Request

{
"Error":  "The request object is missing required attributes or contains invalid
attributes."
}
```

```
Status: 404 Not Found

{
   "Error": "The requested entity was not found."
}
```

```
Status: 406 Not Acceptable

{
"Error": "Cannot produce acceptable response body."
}
```

Patch a Load

Allows you to edit parts of an existing load with PATCH

PUT /loads/:load_id

Request

Path Parameters

Name	Description
load_id	ID of the load

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

Name	Description	Required?
volume	The number of the load.	No
description	Description of the load.	No
carrier	Boat that is carrying load. Nullable.	No

Request Body Example

```
{
    "description": "Test number four."
}
```

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	400 Bad Request	The load was either missing one or more of the required attributes or the input was invalid.
Failure	404 Not Found	No load with this load_id exists
Failure	406 Not Acceptable	The endpoint cannot return data in the specified accepted mime types.

Response Examples

Success

```
Status: 200 OK

{
    "volume": 4,
    "carrier": null,
    "creation_date": "10/06/2023",
```

```
    "description": "Test number four.",
    "id": 5681931941314560,
    "self": "https://cloud-final-388620.uc.r.appspot.com/loads/5681931941314560"
}
```

Failure

Status: 400 Bad Request

```
{
"Error":  "The request object is missing required attributes or contains invalid
attributes."
}
```

Status: 404 Not Found

```
{
    "Error": "The requested entity was not found."
}
```

Status: 406 Not Acceptable

```
{
"Error": "Cannot produce acceptable response body."
}
```

Delete a Load

Allows you to delete a load. Note that if the load currently has a carrier, deleting the load makes the carrier remove that load id from its list.

DELETE /loads/:load_id

Request

Path Parameters

Name	Description
load_id	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	Entity not found

Response Examples

Success

Status: 204 No Content

Failure

```
Status: 404 Not Found

{
    "Error": "The requested entity was not found."
}
```

Assign Load to Boat

Boat has been loaded with a load.

PUT loads/<load_id>/boats/<boat_id>

Request

Path Parameters

Name	Description
boat_id	ID of the boat
load_id	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	Succeeds only if a boat exists with this boat_id, a load exists with this load_id and the load has no carrier.
Failure	400 Bad Request	The load id or boat id was invalid.
Failure	404 Not Found	The specified boat and/or load does not exist

Response Examples

Success

Status: 204 No Content

Failure

Status: 400 Bad Request
 	
{
"Error": "The request object is missing required attributes or contains invalid attributes."
}

Status: 404 Not Found
 	
{
"Error": "The specified boat and/or load does not exist"
}

Remove Load from Boat

The load has been removed from the boat.

DELETE loads/<load_id>/boats/<boat_id>

Request

Path Parameters

Name	Description
boat_id	ID of the boat
load_id	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	Succeeds only if a boat exists with this boat_id, a load exists with this load_id and this boat is at this load.
Failure	400 Bad Request	The load id or boat id was invalid.
Failure	404 Not Found	The specified boat and/or load does not exist

Response Examples

Success

Status: 204 No Content

Failure

Status: 400 Bad Request
 	
{
"Error": "The request object is missing required attributes or contains invalid attributes."
}

Status: 404 Not Found
 	
{
"Error": "The specified boat and/or load does not exist"
}