Portfolio Project: API Spec

CS 493: Cloud Application Development

Fall 2023

Oregon State University

Deployment/Account Creation URL: https://portfolio-critchfn.uw.r.appspot.com/

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. Datastore automatically generates it. Don't add it yourself as a property of the entity. Required.
user_id	String	The "sub" value from the JWT is saved as the user_id. Required.

Boats

Property	Data Type	Notes
id	Integer	The id of the boat. Datastore automatically generates it. Don't add it yourself as a property of the entity. Required.
name	String	Name of the boat. Valid values are alphanumeric, underscore, space. Required.
type	String	Type of the boat. E.g., Sailboat, Catamaran, etc. Valid values are alphanumeric, underscore, space. Required.
length	Integer	The length of the boat in feet. Valid values are integers from 1 to 1000. Required.
owner	String	The "user_id" value from the Users entity; also the "sub" value from the JWT of the user creating the boat. Required.
loads	Array	Array of load IDs. Optional.

Loads

Property	Data Type	Notes
id	Integer	The id of the load. Datastore automatically generates it. Don't add it yourself as a property of the entity. Required.
volume	Integer	The volume of the load. Valid values are integers from 1 to 1000. Required.
item	String	The item of the load. Valid values are alphanumeric, underscore, space. Required.
creation_date	String	Creation date for load. Valid values are alphanumeric, underscore, space. Required.
carrier	Object	If there is a load is being carried by a boat, object contains id and name properties of the boat. Otherwise null. Optional.

List all Users

List all users.

GET /users

Request

Path Parameters

None

Protected?

False

Request Body

None

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	

Response Examples

Success

```
Status: 200 OK

[ "users":
[{
  "id": 123,
  "user_id": "auth123"
},
{
  "id": 456,
  "user_id": "auth456"

}]
```

Create a Boat

Allows you to create a new boat.

POST /boats

Request

Path Parameters

None

Protected?

True

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

Request Body Example

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

Response

Response Body Format

JSON (or HTML for 401)

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.
Failure	401 Unauthorized	A valid JWT is required to post a boat. If not provided, 401 is returned.
Failure	406 Not Acceptable	Accept header must be set to 'application/json'

Response Examples

- Datastore will automatically generate an ID and store it with the entity being created. Your app must send back this value in the response body as shown in the example.
- "Owner" will be set to the sub value of the JWT of the user making the request.

- "Loads" will be empty by default.

Success

```
Status: 201 Created

{
  "id": 123,
  "name": "Sea Witch",
  "type": "Catamaran",
  "length": 28,
  "loads": [],
  "owner": "auth123",
  "self": "https://portfolio-critchfn.uw.r.appspot.com/boats/123"
}
```

Failure

```
Status: 400 Bad Request

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

```
Status: 401 Unauthorized

<!DOCTYPE html>
<html lang="en">

<head>
   <meta charset="utf-8">
   <title>Error</title>
</head>

<body>
   <pre>Unauthorized</pre>
</body>

</html>
```

```
Status: 406 Not Acceptable

{
"Error":  " Accept type not supported"
}
```

Get a Boat

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

Protected?

True

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	404 Not Found	No boat with this boat_id exists
Failure	401 Unauthorized	A valid JWT associated with the boat owner is required to read a boat. If not provided, 401 is returned.
Failure	406 Not Acceptable	Accept header must be set to 'application/json'

Response Examples

Success

Status: 200 OK

```
{
  "id": 123,
  "name": "Sea Witch",
  "type": "Catamaran",
  "length": 28,
  "owner": auth123,
  "loads": ["id": 5678, "self": https://portfolio-
critchfn.uw.r.appspot.com/loads/5678],
  "self": "https://portfolio-critchfn.uw.r.appspot.com/boats/123"
}
```

Failure

Status: 404 Not Found

```
{
"Error": "No boat with this boat_id exists"
}
```
Status: 401 Unauthorized

```
{
"Error":  "Access Denied"
}
```

Status: 406 Not Acceptable

```
{
"Error":  " Accept type not supported"
}
```

List all Boats for User

List all the boats owned by the user making the request.

GET /boats

Request

Path Parameters

None

Protected?

True

Request Body

None

Response

Response Body Format

JSON (or HTML for 401)

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	401 Unauthorized	A valid JWT is required to list boats. If not provided, 401 is returned.
Failure	406 Not Acceptable	Accept header must be set to 'application/json'

Response Examples

Success

```
Status: 200 OK

[ "boats":
[{
  "id": 123,
  "name": "Sea Witch",
  "type": "Catamaran",
  "length": 28,
  "owner": "auth123",
  "loads": [],
  "self": "https://portfolio-critchfn.uw.r.appspot.com/boats/123"
},
{
  "id": 456,
  "name": "Adventure",
  "type": "Sailboat",
  "length": 50,
  "owner": "auth123",
  "loads": [],
  "self": "https://portfolio-critchfn.uw.r.appspot.com/boats/456"
},
{
```

```
    "id": 789,
    "name": "Hocus Pocus",
    "type": "Sailboat",
    "length": 100,
    "owner": "auth123",
    "loads": [],
    "self": "https://portfolio-critchfn.uw.r.appspot.com/boats/789"
}],
"collection_count": 6,
"next": "https://portfolio-
critchfn.uw.r.appspot.com/boats?cursor=CisSJWoQenV3fmh3NC1jcml0Y2hmbnIRCxIEQm9hdBiAgI
D4oJfLCQwYACAA"
]
```

Failure

```
Status: 401 Unauthorized

<!DOCTYPE html>
<html lang="en">

<head>
    <meta charset="utf-8">
    <title>Error</title>
</head>

<body>
    <pre>Unauthorized</pre>
</body>

</html>
```

```
Status: 406 Not Acceptable

{
"Error": " Accept type not supported"
}
```

Response Examples

- 5 results will be provided per response

Update a Boat (PUT)

Allows you to update an existing boat.

PUT /boats/:boat_id

Request

Path Parameters

None

Protected?

True

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

Request Body Example

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

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	400 Bad Request	If the request is missing any of the 3 required attributes, the boat must not be updated, and 400 status code must be returned.
Failure	401 Unauthorized	A valid JWT is required to update a boat. If not provided, 401 is returned.
Failure	404 Not Found	No boat with this boat_id exists
Failure	406 Not Acceptable	Accept header must be set to 'application/json'

Response Examples

- "Owner" cannot be changed and is not a required field for a PUT request.

Success

```
Status: 200 OK


{
  "id": 123,
  "name": "Sea Witch",
  "type": "Catamaran",
  "length": 28,
  "loads": [],
  "owner": "auth123",
  "self": "https://portfolio-critchfn.uw.r.appspot.com/boats/123"
}
```

Failure

```
Status: 400 Bad Request

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

```
Status: 401 Unauthorized


{
"Error":  "Access Denied"
}
```

```
Status: 406 Not Acceptable


{
"Error":  " Accept type not supported"
}
```

Update a Boat (PATCH)

Allows you to create a new boat.

PATCH /boats/:boat_id

Request

Path Parameters

None

Protected?

True

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

Request Body Example

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

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	401 Unauthorized	A valid JWT is required to post a boat. If not provided, 401 is returned.
Failure	404 Not Found	No boat with this boat_id exists
Failure	406 Not Acceptable	Accept header must be set to 'application/json'

Response Examples

- Not all attributes are required in request body.
- "Owner" attribute cannot be changed.

Success

Status: 200 OK {

```
  "id": 123,
  "name": "Sea Witch",
  "type": "Catamaran",
  "length": 28,
  "loads": [],
  "owner": "auth123",
  "self": "https://portfolio-critchfn.uw.r.appspot.com/boats/123"
}
```

Failure

Status: 401 Unauthorized

```
{
"Error":  "Access Denied"
}
```

Status: 406 Not Acceptable

```
{
"Error":  " Accept type not supported"
}
```

Delete a Boat

Allows you to delete a boat. Note that if the boat is currently in a slip, deleting the boat makes the slip empty.

DELETE /boats/:boat_id

Request

Path Parameters

Name	Description
boat_id	ID of the boat

Request Body

None

Protected?

True

Response

No body

Response Body Format

Success: No body

Failure: JSON

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	
Failure	404 Not Found	No boat with this boat_id exists
Failure	401 Unauthorized	A valid JWT associated with the boat owner is required to delete a boat. If not provided, 401 is returned.

Response Examples

Success

Status: 204 No Content

Failure

Status: 404 Not Found
 	
{
"Error": "No boat with this boat_id exists"
}

Status: 401 Unauthorized
 	
{
"Error": "Access Denied"
}

- For any loads the boat is carrying, the load entity will have the carrier removed.

Create a Load

Allows you to create a new load.

POST /loads

Request

Path Parameters

None

Protected?

False

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

Name	Description	Required?
volume	The volume of the load.	Yes
item	The item being carried.	Yes
creation_date	Date of creation for load.	Yes

Request Body Example

```
{
  "volume": 5,
  "item": "LEGO blocks",
  "creation_date": "10/18/2020"
}
```

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	201 Created	
Failure	400 Bad Request	If the request is missing the volume, item, or creation_date attributes, the load must not be created, and 400 status code must be returned.
Failure	406 Not Acceptable	Accept header must be set to 'application/json'

Response Examples

- Datastore will automatically generate an ID and store it with the entity being created. This value needs to be sent in the response body as shown in the example.

- The value of the attribute `carrier`   is an object containing the id and name of the boat carrying the load. For new loads it will be empty.

Status: 201 Created

```
{
  "id": 1234,
  "volume": 5,
  "item": "LEGO blocks",
  "creation_date": "10/18/2020",
  "carrier": [],
  "self": "https://portfolio-critchfn.uw.r.appspot.com/loads/1234"
}
```

Status: 400 Bad Request

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

Status: 406 Not Acceptable

```
{
"Error":  " Accept type not supported"
}
```

Get a Load

Allows you to get an existing slip.

GET /loads/:load_id

Request

Path Parameters

Name	Description
load_id	ID of the load

Protected?

False

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	Accept header must be set to 'application/json'

Response Examples

Success

Status: 200 OK
 	
{
  "id": 1234,
  "volume": 5,
  "item": "LEGO blocks",
  "creation_date": "10/18/2020",
  "carrier": {},
  "self": "https://portfolio-critchfn.uw.r.appspot.com/loads/1234"
}

Failure

Status: 404 Not Found
 	
{
"Error": "No load with this load_id exists"
}

Status: 406 Not Acceptable
 	
{
"Error": " Accept type not supported"
}

List all Loads

List all the loads.

GET /loads

Request

Path Parameters

None

Protected?

False

Request Body

None

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	

Response Examples

Success

```
Status: 200 OK

[
{
  "id": 1234,
  "volume": 5,
  "item": "LEGO blocks",
  "creation_date": "10/18/2020",
  "carrier": {"id": 1, "name": "name one", "self": "https://portfolio-
critchfn.uw.r.appspot.com/boats/1"},
  "self": "https://portfolio-critchfn.uw.r.appspot.com/loads/1234"
},
{
  ""id": 1235,
  "volume": 7,
  "item": "LEGO blocks",
  "creation_date": "10/19/2020",
  "carrier": {"id": 2, "name": "name two", "self": "https://portfolio-
critchfn.uw.r.appspot.com/boats/2"},
  "self": "https://portfolio-critchfn.uw.r.appspot.com/loads/1235"
},
"collection_count": 6,
"next": "https://portfolio-
critchfn.uw.r.appspot.com/loads?cursor=CisSJWoQenV3fmh3NC1jcml0Y2hmbnIRCxIEQm9hdBiAgI
D4oJfLCQwYACAA"
```

```
]
```

Response Examples

- 5 results will be provided per response

Update a Load (PUT)

Allows you to update an existing load.

PUT /loads/:load_id

Request

Path Parameters

None

Protected?

False

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

Name	Description	Required?
volume	The volume of the load.	Yes
item	The item being carried.	Yes
creation_date	The date of creation for the load.	Yes

Request Body Example

```
{
  "volume": 5,
  "item": "LEGO blocks",
  "creation_date": "10/18/2020"
}
```

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	400 Bad Request	If the request is missing any of the 3 required attributes, the load must not be updated, and 400 status code must be returned.
Failure	404 Not Found	No load with this load_id exists
Failure	406 Not Acceptable	Accept header must be set to 'application/json'

Success

Status: 200 OK

```
{
  "id": 1234,
  "volume": 5,
  "item": "LEGO blocks",
  "creation_date": "10/18/2020",
  "carrier": {"id": 1, "name": "name one", "self": "https://portfolio-
critchfn.uw.r.appspot.com/boats/1"},
  "self": "https://portfolio-critchfn.uw.r.appspot.com/loads/1234"
}
```

Failure

```
Status: 400 Bad Request

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

```
Status: 406 Not Acceptable

{
"Error":  " Accept type not supported"
}
```

Update a Load (PATCH)

Allows you to create a new load.

PATCH /loads/:load_id

Request

Path Parameters

None

Protected?

False

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

Name	Description	Required?
volume	The volume of the load.	No
item	The item being carried.	No
creation_date	The date of creatio for the load.	No

Request Body Example

```
{
  "volume": 5,
  "item": "LEGO blocks"
}
```

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	Accept header must be set to 'application/json'

Response Examples

- Not all attributes are required in request body.

Success

```
Status: 200 OK

{
  "id": 1234,
  "volume": 5,
  "item": "LEGO blocks",
```

```
  "creation_date": "10/18/2020",
  "carrier": {"id": 1, "name": "name one", "self": "https://portfolio-
critchfn.uw.r.appspot.com/boats/1"},
  "self": "https://portfolio-critchfn.uw.r.appspot.com/loads/1234"
}
```

Failure

```
Status: 406 Not Acceptable

{
"Error":  " Accept type not supported"
}
```

Delete a Load

Allows you to delete a slip. If the slip being deleted has a boat, the boat is now considered "at sea."

DELETE /loads/:load_id

Request

Path Parameters

Name	Description
load_id	ID of the load

Protected?

False

Request Body

None

Response

No body

Response Body Format

Success: No body

Failure: JSON

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	
Failure	404 Not Found	No load with this load_id exists

Response Examples

Success

Status: 204 No Content

Failure

Status: 404 Not Found
 	
{
"Error": "No load with this load_id exists"
}

- If the load is being carried by a boat, deleting the load will cause the load to be removed from the Loads attribute of the boat.

Assign Load to Boat

Boat has arrived at a slip.

PUT /boats/:boat_id/loads/:load_id

Request

Path Parameters

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

Protected?

True

Request Body

None

Note: Set Content-Length to 0 in your request when calling out to this endpoint.

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 hasn't already been assigned.
Failure	403 Forbidden	The load cannot be assigned because it is already assigned to another boat.
Failure	404 Not Found	The specified boat and/or load does not exist
Failure	401 Unauthorized	A valid JWT associated with the owner of the boat is required to add a load.

Response Examples

Success

Status: 204 No Content

Failure

Status: 403 Forbidden
 	
{
"Error": "The load is already loaded on another boat"
}

Status: 404 Not Found

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

Status: 401 Unauthorized

```
{
"Error": "Access Denied"
}
```

Remove Load From Boat

Boat has left the slip to go to sea. The slip is now empty.

DELETE /boats/:boat_id/loads/:load_id

Request

Path Parameters

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

Protected?

True

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 carrying this load.
Failure	404 Not Found	No load with this load_id is being carried by the boat with this boat_id. This could be because no boat with this boat_id exists, or because no load with load_id exists, or even if both boat_id and load_id are valid, the boat with this boat_id is not carrying the load with this load_id.
Failure	401 Unauthorized	A valid JWT associated with the boat's owner is required to remove a load.

Response Examples

Success

Status: 204 No Content

Failure

Status: 404 Not Found
{
"Error": "No boat with this boat_id is loaded with the load with this load_id"
}

Status: 401 Unauthorized { "Error": "Access Denied"

```
}
```