

# Portfolio Assignment: Final Project

CS 493: Cloud Application Development

Fall 2020

Oregon State University

Last Update: Dec 7, 2020. 11:00 am Pacific

URL where the application is deployed on GCP:

<https://xindi-finalproject.wl.r.appspot.com/>

Entities: User, Boat, Load

Relationship: User with Boat (Protected)

Boat with load (Unprotected)

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## Change log

Page	Change	Date
	Initial version.	M, Dec 7

## Post a Boat

Allows you to create a new boat.

POST /boats

### Request

#### Request Parameters

None

#### Request Body Required

#### Request Body Format

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
loads	Array	Load on the boat	Yes

#### Request Body Example

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

### Response

#### Response Body Format

JSON

## Response Statuses

Outcome	Status Code	Notes
Success	201 Created	
Failure	401 Unauthorized	If the request is without the JWT, the boat is not created and status code 401 returned.
Failure	403 Forbidden	If the request JWT is invalid which causes the boat not created and 403 status code is returned.
Failure	406 Not Acceptable	The request's Accept header is not application/json, boat is not created, status code 406 returned.

## 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 `self` attribute will contain the live link to the REST resource corresponding to this boat. In other words, this is the URL to get this newly created boat. You must not store the `self` attribute in Datastore

## Success

Status: 201 Created

```
{
  "id": "abc123",
  "name": "Sea Witch",
  "type": "Catamaran",
  "length": 28,
```

```
"self": "https://<your-app>/boats/abc123"
}
```

#### Failure

Status: 401 Unauthorized

```
{
  "Error": "Unauthorized"
}
```

Status: 403 Forbidden

```
{
  "Error": "Access to the specified boat from this account is forbidden"
}
```

Status: 406 Not Acceptable

```
{
  "Error": "Not acceptable in header"
}
```

## Get a Boat

Allows you to get an existing boat

```
GET /boats/:boat_id
```

### Request

#### Request Parameters

Name	Type	Description	Required?
boat_id	String	ID of the boat	Yes

#### Request Body

None

### Response

#### Response Body Format

JSON for 201, 403, and 406 Status Codes

HTML via express-jwt middleware for 401 Status Code

#### Response Statuses

Outcome	Status Code	Notes
Success	201 Created	
Failure	401 Unauthorized	The request is missing the JWT, 401 status code is returned without the boat.

Failure	403 Forbidden	The request contains an invalid JWT, 403 status code is returned without the boat.
Failure	406 Not Acceptable	The request's Accept header is not application/json, 406 status code is returned without the boat.

## Response Examples

### Success

```
Status: 200 OK

{
  "id": "324987329843",
  "name": "Sea Witch",
  "type": "Catamaran",
  "length": 28,
  "owner": "12321987938211",
  "loads": [],
  "self": "https://xindi-finalproject.wl.r.appspot.com/boats/324987329843"
}
```

### Failure

Status: 401 Unauthorized

```
{
  "Error": "Unauthorized"
}
```

Status: 403 Forbidden

```
{
  "Error": "Access to the specified boat from this account is forbidden"
}
```

Status: 406 Not Acceptable

```
{
  "Error": "Not acceptable in header"
}
```

## Get all Boats

List all the boats for a given user as identified by the express-jwt middleware. The results are paginated with a limit of five per page.

GET /boats

## Request

### Request Parameters

None

### Request Body

None

## Response

### Response Body Format

JSON

### Response Statuses

Outcome	Status Code	Notes
Success	201 Created	
Failure	401 Unauthorized	The request is missing the JWT, 401 status code is returned without the boat listings.
Failure	406 Not Acceptable	The request's Accept header is not application/json, 406 status code is returned without the boat listings.

### Response Examples

#### Success

```
Status: 200 OK

{
  "items": [
    {
      "type": "Merchant ship",
      "loads": [],
      "length": 91,
      "name": "HMS Bounty",
      "id": "5139943911325696",
      "owner": "12391783719231231",
      "self": "https://xindi-finalproject.wl.r.appspot.com/boats/5139943911325696"
    },
    {
      "name": "Merchant ship",
      "type": "HMS Bounty",
      "loads": [],
      "length": 91,
      "id": "5681150794137600",
      "owner": "12391783719231231",

```

```

    "self": " https://cs493mbfinalproject.wl.r.appspot.com/boats/5681150794137600"
  },
  {
    "type": "Merchant ship",
    "loads": [],
    "length": 91,
    "name": "HMS Bounty",
    "id": "5739956077068288",
    "owner": "12391783719231231",
    "self": " https://xindi-finalproject.wl.r.appspot.com/boats/5739956077068288"
  },
  {
    "type": "Merchant ship",
    "loads": [],
    "length": 91,
    "name": "HMS Bounty",
    "id": "5739956077068288",
    "owner": "12391783719231231",
    "self": " https://xindi-finalproject.wl.r.appspot.com/boats/5739956077068288"
  }
],
"next": " https://xindi-finalproject.wl.r.appspot.com
/boats?cursor=Ci8SKWoUbX5jczQ5M21iYXNzaWdubWVudDRyEQsSBEJvYXQYgICA2NqOmQoMGAAgA
A==",
"totalRecords": 6
}

```

#### Failure

Status: 401 Unauthorized

```

{
  "Error": "Unauthorized"
}

```

Status: 406 Not Acceptable

```

{
  "Error": "Not acceptable in header"
}

```

## Edit a Boat (PATCH)

Allows you to update some or all properties of a boat.

```
PATCH /boats/:boat_id
```

### Request

#### Request Parameters

Name	Type	Description	Required?
boat_id	String	ID of the boat	Yes

#### Request Body Required

#### Request Body Format

JSON

#### Request JSON Attributes

Name	Type	Description	Required?
name	String	The name of the boat.	No
type	String	The type of the boat. E.g., Sailboat, Catamaran, etc.	No
length	Integer	Length of the boat in feet.	No

#### Request Body Example

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

### Response

#### Response Body Format

JSON for 200, 403, and 406 Status Codes

HTML via express-jwt middleware for 401 Status Code

#### Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	401 Unauthorized	The request is missing the JWT, the boat is not updated.
Failure	403 Forbidden	The request contains an invalid JWT, the boat is not updated.



Failure	406 Not Acceptable	The request's Accept header is not application/json, the boat is not updated.
---------	--------------------	---

#### Success

<p>Status: 200 OK</p> <pre>{   "id": "52498732923",   "name": "Sea Witch",   "type": "catamaran",   "length": 100,   "owner": "1232198793821133",   "loads": [],   "self": "https://xindi-finalproject.wl.r.appspot.com/boats/52498732923" }</pre>
--

#### Failure

<p>Status: 401 Unauthorized</p> <pre>{   "Error": "Unauthorized" }</pre>
<p>Status: 403 Forbidden</p> <pre>{   "Error": "Access to the specified boat from this account is forbidden" }</pre>
<p>Status: 406 Not Acceptable</p> <pre>{   "Error": "Application/JSON data not specified as acceptable in header" }</pre>

## Edit a Boat (PUT)

Allows you to update some or all properties of a boat.

PUT /boats/:boat_id
---------------------

#### Request

##### Request Parameters

Name	Type	Description	Required?
boat_id	String	ID of the boat	Yes

## Request Body

Required

## Request Body Format

JSON

## Request JSON Attributes

Name	Type	Description	Required?
name	String	The name of the boat.	No
type	String	The type of the boat. E.g., Sailboat, Catamaran, etc.	No
length	Integer	Length of the boat in feet.	No

## Request Body Example

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

## Response

### Response Body Format

JSON for 200, 403, and 406 Status Codes

HTML via express-jwt middleware for 401 Status Code

## Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	401 Unauthorized	The request is missing the JWT, the boat is not updated.
Failure	403 Forbidden	The request contains an invalid JWT, the boat is not updated.
Failure	406 Not Acceptable	The request's Accept header is not application/json, the boat is not updated.

## Success

Status: 200 OK

```
{
  "id": "52498732923",
  "name": "Sea Witch",
  "type": "catamaran",
}
```

```
"length": 100,  
"owner": "1232198793821133",  
"loads": [],  
"self": "https://xindi-finalproject.wl.r.appspot.com/boats/52498732923"  
}
```

#### Failure

```
Status: 401 Unauthorized  
{  
  "Error": "Unauthorized"  
}
```

```
Status: 403 Forbidden  
  
{  
  "Error": "Access to the specified boat from this account is forbidden"  
}
```

```
Status: 406 Not Acceptable  
  
{  
  "Error": "Not acceptable in header"  
}
```

## 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

#### Request Parameters

None

#### 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 boat with this boat_id exists

## Response Examples

### Success

```
Status: 204 No Content
```

### Failure

```
Status: 404 Not Found

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

## Post a Load

Allows you to create a load, where all new loads are not associated to any boat.

```
POST /loads
```

## Request

### Request Parameters

None

### Request Body Required

### Request Body Format

JSON

### Request JSON Attributes

Name	Type	Description	Required?
weight	Integer	The weight of the load in kg.	Yes
content	String	The contents of the load.	Yes
delivery_date	String	The date on which the load should be delivered.	Yes

### Request Body Example

```
{
  "weight": 5
}
```

```
{
  "content": "LEGO Blocks"
  "delivery_date": "10/18/2020"
}
```

## Response

JSON

### Response Statuses

Outcome	Status Code	Notes
Success	201 Created	
Failure	406 Not Acceptable	The request's Accept header is not application/json, the load is not created.

### Response Examples

#### Success

Status: 201 Created

```
{
  "id": "1254736778071",
  "content": "LEGO Blocks",
  "weight": 5,
  "delivery_date": "10/18/2020",
  "carrier": null,
  "self": "https://xindi-finalproject.wl.r.appspot.com/loads/1254736778071"
}
```

#### Failure

Status: 406 Not Acceptable

```
{
  "Error": "Not acceptable in header"
}
```

## Get a Load

Allows you to get an existing load.

```
GET /load/:load_id
```

## Request

### Request Parameters

Name	Type	Description	Required?
------	------	-------------	-----------

load_id	String	ID of the load	Yes
---------	--------	----------------	-----

#### Request Body

None

#### Response

##### Response Body Format

JSON

##### Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	406 Not Acceptable	The request's Accept header is not application/json, nothing showed.

##### Response Examples

###### Success

```
Status: 200 OK

{
  "id": "13932320",
  "weight": 100
  "content": "Apple",
  "delivery_date": "10/30/2020",
  "self": "https://xindi-finalproject.wl.r.appspot.com/loads/13932320"
}
```

###### Failure

```
Status: 406 Not Acceptable

{
  "Error": "Not acceptable in header"
}
```

## Get all Loads

View all currently existing loads. Returned loads are paginated with a limit of five per page.

```
GET /loads
```

#### Request

##### Request Parameters

None

## Request Body

None

## Response

### Response Body Format

JSON

### Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	406 Not Acceptable	The request's Accept header is not application/json as an accepted type, nothing showed.

### Response Examples

#### Success

Status: 200 OK

```
{
  "items": [
    {
      "delivery_date": "5/1/2020",
      "content": "fresh produce",
      "weight": 10,
      "id": "4541809585815552",
      "self": "https://xindi-finalproject.wl.r.appspot.com/loads/4541809585815552",
      "carrier": null
    },
    {
      "weight": 10,
```

```
"content": "fresh produce",

"delivery_date": "5/1/2020",

"id": "4649438983225344",

"self": "https://xindi-finalproject.wl.r.appspot.com/loads/4649438983225344",

"carrier": null

},

{

"content": "fresh produce",

"weight": 10,

"delivery_date": "5/1/2020",

"id": "4652313792741376",

"self": "https://xindi-finalproject.wl.r.appspot.com/loads/4652313792741376",

"carrier": null

},

{

"content": "fresh produce",

"delivery_date": "5/1/2020",

"weight": 10,

"id": "4680510991237120",

"self": "https://xindi-finalproject.wl.r.appspot.com/loads/4680510991237120",
```



```
    "carrier": null

  },

  {

    "weight": 10,

    "content": "fresh produce",

    "delivery_date": "5/1/2020",

    "id": "4686473882238976",

    "self": "https://xindi-finalproject.wl.r.appspot.com/loads/4686473882238976",

    "carrier": null

  }

],

"next": "https://xindi-finalproject.wl.r.appspot.com/loads?cursor=Ci8SKWoUbX54aW5kaS1maW5hbHByb2plY3RyEQsSBExvYWQYglCA2KvKqQgMGAAgAA==",

"totalRecords": 110

}
```

#### Failure

Status: 406 Not Acceptable

```
{
  "Error": "Not acceptable in header"
}
```

## Update a Load (Patch)

Allows you to update all properties of a load.

```
PATCH /loads/:load_id
```

### Request

#### Request Parameters

Name	Type	Description	Required?
load_id	String	ID of the load	Yes

### Request Body

Required

#### Request Body Format

JSON

#### Request JSON Attributes

Name	Type	Description	Required?
content	String	The contents of the load.	No
weight	Integer	The weight of the load in kilograms.	No
delivery_date	String	The date on which the load is to be delivered.	No

#### Request Body Example

```
{
  "Weight": " 15 " ,
}
```

### Response

#### Response Body Format

JSON

#### Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	406 Not Acceptable	The request's Accept header is not application/json, the load is not updated.

#### Success

```
Status: 200 OK
```

```
{
```

```
{
  "id": "62498837653",
  "content": "oranges",
  "weight": 15,
  "delivery_date": "1/23/2021",
  "carrier": null,
  "self": "https://xindi-finalproject.wl.r.appspot.com/loads/624988327653"
}
```

#### Failure

Status: 406 Not Acceptable

```
{
  "Error": "Not acceptable in header"
}
```

## Update a Load (Put)

Allows you to update all properties of a load.

PUT /loads/:load\_id

#### Request

##### Request Parameters

Name	Type	Description	Required?
load_id	String	ID of the load	Yes

#### Request Body

Required

#### Request Body Format

JSON

##### Request JSON Attributes

Name	Type	Description	Required?
content	String	The contents of the load.	Yes
weight	Integer	The weight of the load in kilograms.	Yes
delivery_date	String	The date on which the load is to be delivered	Yes

#### Request Body Example

```
{
```

```
"content": "Apple",  
"weight": 100,  
"delivery_date": 1/2/2021,  
}
```

## Response

### Response Body Format

JSON

### Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	406 Not Acceptable	The request's Accept header is not application/json, the load is not updated.

#### Success

```
Status: 200 OK  
  
{  
  "id": "124987631843",  
  "content": "Apple",  
  "weight": 100,  
  "delivery_date": 1/2/2021,  
  "carrier": null,  
  "self": "https://xindi-finalproject.wl.r.appspot.com/loads/124987631843"  
}
```

#### Failure

```
Status: 406 Not Acceptable  
  
{  
  "Error": "Application/JSON data not specified as acceptable in header"  
}
```

## Delete a Load

Allows you to remove a load. This action updates the carrier boat to indicate that the load is no longer present.

```
DELETE /loads/:load_id
```

## Request

### Request Parameters

None

### 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	406 Not Acceptable	The request's Accept header is not application/json, nothing deleted.

### Response Examples

#### Success

Status: 204 No Content

#### Failure

Status: 406 Not Acceptable

```
{
  "Error": "Not acceptable in header"
}
```

## Put a Load on a Boat

Allows a load to be associated to a boat via the load's "carrier" property and removes the load from the list of loads carried by that boat.

PUT /boats/:boat\_id/loads/:load\_id

## Request

### Request Parameters

None

### Request Body

None

## Response No

body

Response Body Format Success:

No body

Failure:

JSON for 201 and 403 Status Codes

HTML via express-jwt middleware for 401 Status Code

## Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	Successfully assigned a load to a boat.
Failure	401 Unauthorized	The request is missing the JWT, the load is not assigned.
Failure	403 Forbidden	The request contains an invalid JWT, the load is not assigned.
Failure	403 Forbidden	The specified load is already assigned to a boat, the load is not reassigned.

## Response Examples

### Success

Status: 204 No Content

### Failure

Status: 401 Unauthorized

```
{
  "Error": "Unauthorized"
}
```

Status: 403 Forbidden

```
{
  "Error": "Access to the specified boat from this account is forbidden"
}
```

Status: 403 Forbidden

```
{
  "Error": "The load is already associated to a boat"
}
```

## Take off a Load from a Boat

Allows a load to be removed from a boat via the load's "carrier property" and removes the load from the list of loads carried by that boat.

```
DELETE /boat/:boat_id/loads/:load_id
```

### Request

#### Request Parameters

None

#### Request Body

None

### Response

No body

#### Response Body Format Success:

No body

Failure:

JSON for 201 and 403 Status Codes

HTML via express-jwt middleware for 401 Status Code

#### Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	Succeeds remove a load from a boat.
Failure	401 Unauthorized	The request is missing the JWT, the load is not removed from the boat.
Failure	403 Forbidden	The request contains an invalid JWT, the load is not removed from the boat.

#### Response Examples

##### Success

```
Status: 204 No Content
```

##### Failure

```
Status: 401 Unauthorized
{
  "Error": "Unauthorized"
}
```

Status: 403 Forbidden

```
{
  "Error": "Access to the specified boat from this account is forbidden"
}
```

## View all Users

List all the users.

GET /users

### Request

#### Request Parameters

None

#### Request Body

None

### Response

#### Response Body Format

JSON

#### Response Statuses

Outcome	Status Code	Notes
Success	200 OK	Return all users
Failure	406 Not Acceptable	The request's Accept header is not application/json, status code 406 returned.

#### Response Examples

##### Success

Status: 200 OK

```
{
  [
    {
      "userID": "114196981612215203470",
      "id": "6344513190625280"
    },
    {
      "userID": "114196981612215203470",
```



```
{
  "id": "6481901141360640"
}
```

## Users Login

List all the users.

<https://xindi-finalproject.wl.r.appspot.com>

### Description:

Enter the page through the link and click the login button to log in.

## Users Login

Log in to user's account.

<https://xindi-finalproject.wl.r.appspot.com>

### Description:

Enter the page through the link and click the login button to log in.

Success example:

After logging into the account, user will get into a page with token and user id generated by google.

The redirect URL: <https://xindi-finalproject.wl.r.appspot.com/oauth>

## User Info

This page shows the page with a new JWT issued by Google

## Token

[illegible]

## User Id

117659231052572461560

## Create Account

Create an account

<https://xindi-finalproject.wl.r.appspot.com>

Description:

Enter the page through the link and click the login button to log in or create a account.