Portfolio Project
Document Retained for demonstration purposes only
App URL: [NOT ACTIVE]
Account Creation / Login: [NOT ACTIVE]

CS 493: Cloud Application Development
Spring 2021

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Change log

Version	Change	Date
1.0	Initial version.	Wednesday, May 19, 2021
1.1	Removed dead hyperlinks	March 16, 2024

Data Model

Boats – protected entity

Name	Type	Description	Required?
id	Integer	Datastore automatically generates it.	Auto-generated
name	String	The name of the boat.	Yes
type	String	The type of the boat. E.g., Pirate, Navy, Ghost, etc.	Yes
length	Integer	Length of the boat in feet.	Yes
loads	Array	list of loads carried by boat (load_id)	Default Empty

Loads

Name	Type	Description	Required?
id	Integer	Datastore automatically generates it.	Auto-generated
volume	Integer	The capacity of the load	Yes
content	String	What is in the load.	Yes
creation_date	Integer	The date the load was created	Auto-generated
carrier	Object	Contains boat_id of the boat carrying the load	Default NULL

Users

Name	Type	Description	Required?
id	Integer	Datastore automatically generates it.	Auto-generated
user_name	String	Unique – used as the owner attribute of a boat.	JWT-Derived
real_name	String	The actual name of the user (i.e. - "Joe Dirt")	JWT-Derived

Create a Boat

Creates a new boat in the datastore.

```
POST /boats
```

Request

Path Parameters
None

Authorization
Bearer Token "{valid JWT}"

Accept
application/json

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. (i.e. - Pirate, Navy, Ghost, etc.)	Yes
length	Integer	Length of the boat in feet.	Yes

Request Body Example

```
{
 "name": "The Going Mary",
 "type": "pirate",
"length": 500
}
```

Response

Response Body Format
JSON

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 will not be created, and 400 status code is returned.
Failure	401 Unauthorized	The JWT was invalid or no JWT was supplied.

| Failure | 406 Not Acceptable | The accept type is not application/json |

Response Examples
- • Datastore will automatically generate an ID and store it with the entity being created.
- • The ID will be returned in the response.
- • The self attribute will contain the live link to the REST resource corresponding to this boat.

Success

```
Status: 201 Created

{
    "id": 5675594515742720,
    "length": 500,
    "loads": [],
    "name": "The Going Mary",
    "owner": "111062291918128608857",
    "self":
        "https://allend2-portfolio-project.wl.r.appspot.com/boats/5675594515742720",
    "type": "pirate"
}
```

Failure

```
Status: 400 Bad Request

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

Failure

```
Status: 401 Unauthorized

{
    "Error": "Invalid or missing JWT."
}
```

Failure

```
Status: 406 Not Acceptable

{
    "Error": "Your request must accept 'application/json'"
}
```

Change a Boat (All Attributes)

Updates all attributes of a boat. If an attribute is not given, it is set to null.

```
PUT /boats/:boat_id
```

Request

Path Parameters

Name	Type	Description
boat_id	String	ID of the boat

Authorization
Bearer Token "{valid JWT}"

Accept
application/json

Request Body
Required

Request Body
JSON

Request Body Example

```
{
  "name": "New Name",
  "type": "New Type",
  "length": 100000000
}
```

Values not part of the data model will be ignored by the server as will attempts to change the boat_id by passing as a part of the body. Additionally, the owner attribute is not mutable. If any of the other attributes from the data model are omitted, the value will be set to null.

Response

Response Body Format
JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	403 Forbidden	The JWT does not match the owner of the boat.
Failure	404 Not Found	No boat with this boat_id exists
Failure	406 Not Acceptable	The accept type is not application/json

Response Examples
Success – No Missing Attributes

```
Status: 200 OK

{
    "id": 5675594515742720,
    "length": 100000000,
    "loads": [
        {
            "id": 5660308458700800
        }
    ],
    "name": "New Name",
    "owner": "111062291918128608857",
    "self":
        "https://allend2-portfolio-project.wl.r.appspot.com/boats/5675594515742720",
    "type": "New Type"
}
```

Success – Only the name *attribute in body*

```
Status: 200 OK

{
    "id": 5675594515742720,
    "length": null,
    "loads": [
        {
            "id": 5660308458700800
        }
    ],
    "name": "Just the name",
    "owner": "111062291918128608857",
    "self":
        "https://allend2-portfolio-project.wl.r.appspot.com/boats/5675594515742720",
    "type": ""
}
```

Failure

```
Status: 403 Forbidden

{
    "Error": "This is not your boat."
}
```

Failure

Status: 404 Not Found

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

Failure

Status: 406 Not Acceptable

```
{
    "Error": "Your request must accept 'application/json'"
}
```

Edit a Boat (Specified Attributes)

Updates only provided attributes of a boat. If an attribute is not given, it is left unchanged.

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

Request

Path Parameters

Name	Type	Description
boat_id	String	ID of the boat

Authorization
Bearer Token "{valid JWT}"

Accept
application/json

Request Body
JSON

Request Body Example

```
{
  "name": "Change the Name and Keep Everything Else"
}
```

Values not part of the data model will be ignored by the server as will attempts to change the boat_id by passing as a part of the body. The owner attribute cannot be changed using this route.

Response

Response Body Format
JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	403 Forbidden	The JWT does not match the owner of the boat.
Failure	404 Not Found	No boat with this boat_id exists
Failure	406 Not Acceptable	The accept type is not application/json

Response Examples
Success

```
Status: 200

{
```

```
    "id": 5658646574792704,
    "length": 20,
    "loads": [],
    "name": "Change the Name and Keep Everything Else",
    "owner": "111062291918128608857",
    "self":
        "https://allend2-portfolio-project.wl.r.appspot.com/boats/5658646574792704",
    "type": "submarine"
}
```

Failure

```
Status: 403 Forbidden

{
    "Error": "This is not your boat."
}
```

Failure

```
Status: 404 Not Found

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

Failure

```
Status: 406 Not Acceptable

{
    "Error": "Your request must accept 'application/json'"
}
```

Get a Boat

Get a boat with a specific `boat_id`.

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

Request

Path Parameters

Name	Type	Description
`boat_id`	String	ID of the boat

Authorization
Bearer Token "{valid JWT}"

Accept
application/json

Request Body
Required

Request Body
None

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	406 Not Acceptable	The accept type is not application/json

Response Examples
Success (no loads)

```
Status: 200 OK

{
    "id": 5675594515742720,
    "length": 500,
    "loads": [],
    "name": "The Going Mary",
    "owner": "111062291918128608857",
    "self":
        "https://allend2-portfolio-project.wl.r.appspot.com/boats/5675594515742720",
    "type": "pirate"
}
```

Success (loads)

```
Status: 200 OK

{
    "id": 5675594515742720,
    "length": 500,
    "loads": [
        {
            "id": 5660308458700800,
            "self":
         "https://allend2-portfolio-project.wl.r.appspot.com/loads/5660308458700800"
        }
    ],
    "name": "The Going Mary",
    "owner": "111062291918128608857",
    "self":
        "https://allend2-portfolio-project.wl.r.appspot.com/boats/5675594515742720",
    "type": "pirate"
}
```

Failure

```
Status: 401 Unauthorized

{
    "Error": "Invalid or missing JWT."
}
```

Failure

```
Status: 404 Not Found

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

Failure

```
Status: 406 Not Acceptable

{
    "Error": "Your request must accept 'application/json'"
}
```

Get all Boats

Get a list of all boats in the datastore. The API will return **five** records per page with a "next" attribute when there are more boats than the three returned. Only the boats associated with that `owner` will be returned. If no authorization is provided, no boats will be returned.

GET /boats

Request

Path Parameters
None

Authorization
Bearer Token "{valid JWT}", None

Accept
application/json

Request Body
Required

Request Body
None

Response

Response Body Format
JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	406 Not Acceptable	The accept type is not application/json

Response Examples

Success (no JWT)

```
Status: 200 OK

{
    "boats": [],
    "length": 0
}
```

```
Status: 200 OK

{
    "boats": [
        {
            "id": 5180720062398464,
            "length": 5000,
            "loads": [],
            "name": "Yellow Submarine",
            "owner": "103440954164652057290",
            "self":
"https://allend2-portfolio-project.wl.r.appspot.com/boats/5180720062398464",
            "type": "Musical"
        },
        {
            "id": 5735810494103552,
            "length": 800,
            "loads": [],
            "name": "The Flying Dutchman",
            "owner": "103440954164652057290",
            "self":
"https://allend2-portfolio-project.wl.r.appspot.com/boats/5735810494103552",
            "type": "Ghost"
        },
        {
            "id": 5743670015819776,
            "length": 3000,
            "loads": [],
            "name": "Battleship",
            "owner": "103440954164652057290",
            "self":
"https://allend2-portfolio-project.wl.r.appspot.com/boats/5743670015819776",
            "type": "Navy"
        }
    ],
    "length": 3
}
```

Failure

```
Status: 406 Not Acceptable

{
    "Error": "Your request must accept 'application/json'"
}
```

Delete a Boat

Delete a boat with the given `boat_id`. Note that if the boat is carrying load(s), deleting the boat removes the `boat_id` from the carrier attribute of the affected load(s). Boats can only be deleted by the boat's `owner`.

DELETE /boats/:boat_id

Request

Path Parameters

Name	Type	Description
`boat_id`	String	ID of the boat

Authorization
Bearer Token "{valid JWT}"

Request Body
None

Response

Response Body Format
Success: No body
Failure: JSON

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	
Failure	401 Unauthorized	The JWT supplied was not valid
Failure	403 Forbidden	The boat does not belong to the requester.
Failure	404 Not Found	No boat with this `boat_id` exists
Failure	406 Not Acceptable	The accept type is not application/json

Response Examples

Success

Status: 204 No Content

Failure

```
Status: 401 Unauthorized

{
    "Error": "Invalid or missing JWT."
}
```

Failure

Status: 403 Forbidden

```
{
    "Error": "This is not your boat."
}
```

Failure

Status: 404 Not Found

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

Failure

Status: 406 Not Acceptable

```
{
    "Error": "Your request must accept 'application/json'"
}
```

Get all Users

List all users that have registered to use the API.

```
GET /users
```

Request

Path Parameters
None

Accept
application/json

Request Body
None

Response

Response Body Format
JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	406 Not Acceptable	The accept type is not application/json

Response Examples
Success

```
Status: 200 OK

{
    "length": 2,
    "users": [
        {
            "id": 5071211717459968,
            "real_name": "Dan Allen",
            "user_name": "103440954164652057290"
        },
        {
            "id": 5644004762845184,
            "real_name": "Daniel James Allen",
            "user_name": "111062291918128608857"
        }
    ]
}
```

Failure

```
Status: 406 Not Acceptable

{
    "Error": "Your request must accept 'application/json'"
}
```

Delete A User

Delete a user with the given `user_id` – this is the value assigned by the datastore and not the value used in the `owner` attribute of the boats.

DELETE /users/:user_name

Request

Path Parameters

Name	Type	Description
`user_id`	String	ID of the user

Request Body
None

Response

Response Body Format
JSON

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	
Failure	404 Not Found	No user with this `user_id` exists

Response Examples
Success

Status: 204 No Content

Failure

```
Status: 404 Not Found

{
    "Error": "No user with this user_id exists."
}
```

Create a Load

Creates a new load in the datastore.

POST /loads

Request

Path Parameters
None

Accept
application/json

Request Body
Required

Request Body Format
JSON

Request JSON Attributes

Name	Type	Description	Required?
volume	Integer	The capacity of the load	Yes
content	String	What is contained in the load	Yes

Request Body Example

```
{
  "volume": 100,
  "content": "widgets"
}
```

Response

Response Body Format
JSON

Response Statuses

Outcome	Status Code	Notes
Success	201 Created	
Failure	400 Bad Request	If the request is missing either the volume or content, the load will not be created, and 400 status code will be returned.
Failure	406 Not Acceptable	The accept type is not application/json

Response Examples

- Datastore will automatically generate an ID and store it with the entity being created. This value is sent in the response body as shown in the example.
- The value of the attribute carrier is the ID of the boat currently carrying the load. If the load is not on a boat, the value of carrier is null. This value is initialized as null.
- The value of creation_date is generated automatically using the current date when the load is created.
- The value of the attribute self is a live link to the REST resource corresponding to this load.

Success

```
Status: 201 Created

{
    "carrier": null,
    "content": "widgets",
    "creation_date": "05/23/2021",
    "id": 5660308458700800,
    "self":
        "https://allend2-portfolio-project.wl.r.appspot.com/loads/5660308458700800",
    "volume": 100
}
```

Failure

```
Status: 400 Bad Request

{
    "Error": "The load must have a volume and content attribute."
}
```

Failure

```
Status: 406 Not Acceptable

{
    "Error": "Your request must accept 'application/json'"
}
```

Change a Load (All Attributes)

Updates all attributes of a load. If an attribute is not given, it is set to null.

```
PUT /boats/:load_id
```

Request

Path Parameters

Name	Type	Description
load_id	String	ID of the load

Accept
application/json

Request Body
JSON

Request Body Example

```
{
   "name": "Change the Name and Keep Everything Else"
}
```

Values not part of the data model will be ignored by the server as will attempts to change the load_id by passing as a part of the body.

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	406 Not Acceptable	The Accept type of the request is not one of the supported MIME types of the server

Response Examples
Success – No Missing Attributes

```
Status: 200 OK

{
    "carrier": null,
    "content": "New Contents",
    "creation_date": "05/23/2021",
    "id": 5655374346584064,
    "self":
        "https://allend2-portfolio-project.wl.r.appspot.com/loads/5655374346584064",
    "volume": 9999999
```

```
    }
```

Success – name *attribute omitted in body*

```
Status: 200 OK

{
    "carrier": null,
    "content": "There should be no volume",
    "creation_date": "05/23/2021",
    "id": 5655374346584064,
    "self":
        "https://allend2-portfolio-project.wl.r.appspot.com/loads/5655374346584064",
    "volume": null
}
```

Failure

```
Status: 404 Not Found

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

Failure

```
Status: 406 Not Acceptable

{
    "Error": "Your request must accept 'application/json'"
}
```

Edit a Load (Specified Attributes)

Updates attributes of a load. If an attribute is not given, it is unchanged.

PUT /boats/:load_id

Request

Path Parameters

Name	Type	Description
load_id	String	ID of the load

Accept
application/json

Request Body
JSON

Request Body Example

```
{
   "content": "Just change the contents"
}
```

Values not part of the data model will be ignored by the server as will attempts to change the load_id *by passing as a part of the body.*

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	406 Not Acceptable	The Accept type of the request is not one of the supported MIME types of the server

Response Examples
Success

```
Status: 200 OK

{
    "carrier": null,
    "content": "Just change the contents",
    "creation_date": "05/23/2021",
    "id": 5655374346584064,
    "self":
        "https://allend2-portfolio-project.wl.r.appspot.com/loads/5655374346584064",
    "volume": 100
```

```
   }
```

Failure

```
Status: 404 Not Found

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

Failure

```
Status: 406 Not Acceptable

{
    "Error": "Your request must accept 'application/json'"
}
```

Get a Load

Get the load with the given `load_id` from the datastore.

GET /loads/:load_id

Request

Path Parameters

Name	Type	Description
`load_id`	String	ID of the load

Accept
application/json

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 accept type is not application/json

Response Examples
Success (no carrier)

```
Status: 200 OK

{
    "carrier": null,
    "content": "widgets",
    "creation_date": "05/23/2021",
    "id": 5660308458700800,
    "self":
        "https://allend2-portfolio-project.wl.r.appspot.com/loads/5660308458700800",
    "volume": 100
}
```

Success (carrier)

```
Status: 200 OK

{
    "carrier": {
        "id": 5675594515742720
```

```
    },
    "content": "widgets",
    "creation_date": "05/23/2021",
    "id": 5660308458700800,
    "self":
        "https://allend2-portfolio-project.wl.r.appspot.com/loads/5660308458700800",
    "volume": 100
}
```

Failure

```
Status: 404 Not Found

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

Failure

```
Status: 406 Not Acceptable

{
    "Error": "Your request must accept 'application/json'"
}
```

Get all Loads

Get a list of all loads in the datastore. The API will return **five** records per page with a "next" attribute when there are more loads than the three returned.

```
GET /loads
```

Request

Path Parameters
None

Accept
application/json

Request Body
None

Response

Response Body Format
JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	406 Not Acceptable	The accept type is not application/json

Response Examples

Success

Status: 200 OK

```
{
    "length": 5,
    "loads": [
        {
            "carrier": null,
            "content": "the goods",
            "creation_date": "05/23/2021",
            "id": 5097358505279488,
            "self":
"https://allend2-portfolio-project.wl.r.appspot.com/loads/5097358505279488",
            "volume": 20
        },
        {
            "carrier": null,
            "content": "all of the things",
            "creation_date": "05/23/2021",
            "id": 5106202648248320,
            "self":
"https://allend2-portfolio-project.wl.r.appspot.com/loads/5106202648248320",
            "volume": 1000000
        },
        {
            "carrier": {
                "id": 5675594515742720,
                "self":
"https://allend2-portfolio-project.wl.r.appspot.com/boats/5675594515742720"
            },
            "content": "widgets",
            "creation_date": "05/23/2021",
            "id": 5660308458700800,
            "self":
"https://allend2-portfolio-project.wl.r.appspot.com/loads/5660308458700800",
            "volume": 100
        },
        {
            "carrier": null,
            "content": "just stuff",
            "creation_date": "05/23/2021",
            "id": 5669152601669632,
            "self":
"https://allend2-portfolio-project.wl.r.appspot.com/loads/5669152601669632",
            "volume": 5
        },
        {
            "carrier": null,
            "content": "More straws",
            "creation_date": "05/23/2021",
            "id": 5738709764800512,
            "self":
"https://allend2-portfolio-project.wl.r.appspot.com/loads/5738709764800512",
            "volume": 10
        }
```

```
    ],
    "next": "https://allend2-portfolio-project.wl.r.appspot.com/loads?
limit=5&offset=5"
}
```

Failure

```
Status: 406 Not Acceptable

{
    "Error": "Your request must accept 'application/json'"
}
```

Delete a Load

Allows you to delete a load. If the load being deleted is on a boat, the `load_id` is removed from the boat's `loads` array.

DELETE /loads/:loads_id

Request

Path Parameters

Name	Type	Description
`load_id`	String	ID of the load

Request Body
None

Response

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 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."
}
```

Load Added to Boat

A load has been added to a boat's loads array.

PUT /boats/:boat_id/loads/:load_id

Request

Path Parameters

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

Authorization
Bearer Token "{valid JWT}", None

Request Body
None

Response

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 is not on another boat already.
Failure	403 Forbidden	The JWT does not refer to the boat's `owner`
Failure	403 Forbidden	Load is already on a boat and cannot be carried by two boats.
Failure	404 Not Found	No boat with this `boat_id` exists.
Failure	404 Not Found	No load with this `load_id` exits.
Failure	404 Not Found	No boat or load with these ids exist.

Response Examples
Success

Status: 204 No Content

Failure (wrong owner)

```
Status: 403 Forbidden

{
    "Error": "This is not your boat."
}
```

Failure (Load already on a boat)

```
Status: 403 Forbidden

{
    "Error": "Load is already on a boat and cannot be carried by two boats."
}
```

Failure (Invalid boat_id)

```
Status: 404 Not Found

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

Failure (Invalid load_id)

```
Status: 404 Not Found

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

Failure (Invalid boat_id and load_id)

```
Status: 404 Not Found

{
    "Error": "No boat or load with these ids exist."
}
```

Comment
- A load cannot be assigned to multiple boats.
- Adding a load to boat will add the load_id to the loads attribute of the boat and add the boat_id to the load's carrier attribute

Load Removed from Boat

Load is taken of a boat. The load is removed from the the boat's loads attribute and the load's carrier attribute is set to null.

DELETE /boats/:boat_id/loads/:load_id

Request

Path Parameters

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

Authorization
Bearer Token "{valid JWT}", None

Request Body
None

Response

Response Body Format
Success: No body
Failure: JSON

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	Succeeds only if a boat with this `boat_id` exists and has a load with this `load_id`
Failure	403 Forbidden	The JWT does not refer to the boat's `owner`
Failure	403 Forbidden	Load is not on this boat.
Failure	403 Forbidden	Load is not on a boat.
Failure	404 Not Found	No boat with this `boat_id` exists.
Failure	404 Not Found	No load with this `load_id` exits.
Failure	404 Not Found	No boat or load with these ids exist.

Response Examples
Success

Status: 204 No Content

Failure (wrong owner)

```
Status: 403 Forbidden

{
     "Error": "This is not your boat."
}
```

Failure (load not on given boat)

```
Status: 403 Forbidden

{
    "Error": "This load is not on this boat."
}
```

Failure (load not on any boat)

```
Status: 403 Forbidden

{
    "Error": "This load is not on a boat."
}
```

Failure (Invalid boat_id)

```
Status: 404 Not Found

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

Failure (Invalid load_id)

```
Status: 404 Not Found

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

Failure (Invalid boat_id and load_id)

```
Status: 404 Not Found

{
    "Error": "No boat or load with these ids exist."
}
```