Cloud Application Development: Portfolio Assignment

Deployed on: https://final-loyami.uw.r.appspot.com/

Account creation/login: https://final-loyami.uw.r.appspot.com/

Data Model

The app stores three kinds of entities in Datastore, Boats, Loads, and Users. A user can own 0 or more boats. A boat can carry 0 or more loads. A boat can only have one owner/user. A load can only be assigned to one boat at a time.

Boats

Property	Data Type	Notes
id	Integer	The id of the boat. Do not add it yourself. Datastore automatically generates it.
name	String	Name of the boat. Valid string inputs include lower case and uppercase characters, numbers and special characters.
type	String	Type of the boat. E.g., Sailboat, Catamaran, etc. Valid string inputs include lower case and uppercase characters, numbers and special characters.
length	Integer	The length of the boat in feet. Lengths must be positive integers
loads	List	List of dictionary objects where each object contains the attributes of load that is carried by the boat. Do not add this yourself. An empty loads list is initialized with the creation of a boat
owner	String	The owner of the boat. Do not add this yourself. When a new boat is created, the owner property is set to the value of the sub claim from the JWT payload.This links the boat to the user who created it
self	String	The direct URL or link to access the boat. Do not add this yourself. It is automatically generated upon creation.

Loads

Property	Data Type	Notes
id	Integer	The id of the boat. Datastore automatically generates it. Do not add it yourself
carrier	String	Name of the boat that carries the load. Do not add this yourself. It is initiated to None when the load is created.
volume	Integer	The volume of the load in cubic feet. Volumes must be positive

		integers.
item	String	The type of item stored in the load. Valid string inputs include lower case and uppercase characters, numbers and special characters.
creation_date	String	The date when the load was created. Valid string inputs include numbers in a valid data format (ex: 12/12/2022).
self	String	The direct URL or link to access the boat. Do not add this yourself. It is automatically generated upon creation.

Users

The app maps a supplied JWT (JSON Web Token) to the identifier of a user through a process involving the verification and decoding of the JWT. The user's unique identifier is extracted from the sub (subject) claim of the JWT payload. The sub claim in JWTs issued by Auth0. The user identifier (sub) becomes a link between the JWT and the app's user records in the datastore.

Property	Data Type	Notes
user_id	String	This property stores the unique identifier of the user. It's derived from the userinfo['sub'] field returned by Auth0.

Create a Boat

Allows you to create a new boat.

POST /boats

REQUEST

Protected endpoint - User needs to provide JWT Token in Authorization header of the request

Path Parameters

None

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

Name	Description	Required?
name	Name of the boat	Yes
type	Type of the boat. E.g., Sailboat, Catamaran, etc.	Yes
length	The length of the boat in feet.	Yes

Request Body Example
```
{
    "name": "Bleu's Boat",
    "type": "Pirate Ship",
    "length": 7
}
```

RESPONSE

Request Body Format
JSON

Response Statuses

Outcome	Status Code	Notes
Success	201 Created	

Failure	415	Client sends an unsupported MIME type to the endpoint
Failure	406	Accept MIME type not supported
Failure	401	Invalid or missing JWT
Failure	400	Unable to identify owner from JWT

Response Examples

Success

Status: 201 Created
```
{
    "id": 5069549128908800,
    "length": 7,
    "loads": [],
    "name": "Bleu's Boat",
    "owner": "auth0|655c1508022a9fc3be9be5c6",
    "self": "https://final-loyami.uw.r.appspot.com/boats/5069549128908800",
    "type": "Pirate Ship"
}
```

Failure

Status: 415
```
{
    "error": "Request must be JSON"

}
```
Status: 406
```
{
    "error": "Accept MIME type not supported"
}
```

Status: 401
```
{
    "error": "({'code': 'no auth header', 'description': 'Authorization header is missing'}, 401)"
}
```

Status: 400
```
{
    "error": "Unable to identify owner from JWT"
}
```

Get Boats

Allows you to retrieve a user's collection of boats

GET /boats

REQUEST

Protected endpoint - User needs to provide JWT Token in Authorization header of the request

Path Parameters

None

Request Body

None

RESPONSE

Response Body Format
JSON

Response Statuses

Outcome	Status Code	Notes
Success	200	
Failure	406	Accept MIME type not supported
Failure	401	Invalid or missing JWT

Additional Response Notes
The results will return paginated. The collection will be shown 5 entities at a time.

Response Examples

Success

Status: 200
```
{
    "boats": [
        {
            "id": 5069549128908800,
            "length": 7,
            "loads": [],
            "name": "Bleu's Boat",
            "owner": "auth0|655c1508022a9fc3be9be5c6",
            "self": "https://final-loyami.uw.r.appspot.com/boats/5069549128908800",
            "type": "Pirate Ship"
```

```
        },
        {
            "id": 5637476211228672,
            "length": 7,
            "loads": [],
            "name": "Bleu's Other Boat",
            "owner": "auth0|655c1508022a9fc3be9be5c6",
            "self": "https://final-loyami.uw.r.appspot.com/boats/5637476211228672",
            "type": "Paddle Boat"
        }
    ],
    "next": null,
    "prev": null,
    "total_count": 2
}
```

Failure

Status: 406
```
{
    "error": "Accept MIME type not supported"
}
```

Status: 401
```
{
    "error": "({'code': 'no auth header', 'description': 'Authorization header is missing'}, 401)"
}
```

Delete/Put/Patch Boats

None of these methods are supported

DELETE /boats, PUT /boats, PATCH /boats

RESPONSE

Response Body Format
JSON

Response Statuses

Outcome	Status Code	Notes
Failure	405	Accept MIME type not supported

Response Examples

Failure

Status: 405
DELETE, PUT, and PATCH requests are not supported on /boats

Get a Boat

Allows you to retrieve a boat

GET /boats/:boat_id

REQUEST

Protected endpoint - User needs to provide JWT Token in Authorization header of the 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	
Failure	401	Invalid or missing JWT
Failure	403	You are not the owner of this boat
Failure	404	No boat with this ID exists
Failure	406	Accept MIME type not supported

Response Examples

Success

Status: 200
```
{
    "id": 5637476211228672,
    "length": 7,
    "loads": [],
```

```
            "name": "Bleu's Other Boat",
            "owner": "auth0|655c1508022a9fc3be9be5c6",
            "self": "https://final-loyami.uw.r.appspot.com/boats/5637476211228672",
            "type": "Paddle Boat"
        }
```

Failure

Status: 406
```
{
    "error": "Accept MIME type not supported"

}
```
Status: 404
```
{
    "error": "No boat with this boat_id exists"

}
```
Status: 403
```
{
    "error": "You are not the owner of this boat"
}
```

Status: 401
```
{
    "error": "({'code': 'no auth header', 'description': 'Authorization header is missing'}, 401)"
}
```

Delete a Boat

Allows you to delete a boat

DELETE /boats/:boat_id

REQUEST

Protected endpoint - User needs to provide JWT Token in Authorization header of the 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	204	Deletion successful
Failure	401	Invalid or missing JWT
Failure	403	Unauthorized to delete the boat
Failure	404	No boat with this ID exists

Response Examples

Success

Status: 204 Created

Failure

Status: 404
```
{
    "error": "No boat with this boat_id exists"
```

```
}
```

Status: 403
```
{
    "error": "You are not the owner of this boat"
}
```

Status: 401
```
{
    "error": "({'code': 'no auth header', 'description': 'Authorization header is missing'}, 401)"
}
```

Patch a Boat

Allows you to update all or some attributes of a specified boat

PATCH /boats/:boat_id

REQUEST

Protected endpoint - User needs to provide JWT Token in Authorization header of the 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	Name of the boat	No
type	Type of the boat. E.g., Sailboat, Catamaran, etc.	No
length	The length of the boat in feet.	No

Request Body Example
```
{
  "name": "Bleu's patched boat",
  "length": 200
}
```

RESPONSE

Response Body Format
JSON

Response Statuses

Outcome	Status Code	Notes

Success	200	
Failure	415	Client sends an unsupported MIME type to the endpoint
Failure	406	Accept MIME type not supported
Failure	404	No boat with this boat_id exists
Failure	403	The user will receive this code for unauthorized actions. Users are not allowed to edit boats that don't belong to them, and users are not allowed to edit a boat's id.
Failure	401	Invalid or missing JWT

Response Examples

Success

Status: 200

```
{
    "id": 5637476211228672,
    "length": 200,
    "loads": [],
    "name": "Bleu's patched boat",
    "owner": "auth0|655c1508022a9fc3be9be5c6",
    "self": "https://final-loyami.uw.r.appspot.com/boats/5637476211228672",
    "type": "Paddle Boat"
}
```

Failure

Status: 415

```
{
    "error": "Request must be JSON"
}
```

Status: 406

```
{
    "error": "Accept MIME type not supported"
}
```

Status: 404

```
{
    "error": "No boat with this boat_id exists"

}
```

Status: 403

```
{
    "error": "You are not the owner of this boat"
}
```

Status: 401

```
{
    "error": "({'code': 'no auth header', 'description': 'Authorization header is missing'}, 401)"
}
```

PUT a Boat

Allows you to update all attributes of a specified boat

PUT /boats/:boat_id

REQUEST

Protected endpoint - User needs to provide JWT Token in Authorization header of the 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	Name of the boat	Yes
type	Type of the boat. E.g., Sailboat, Catamaran, etc.	Yes
length	The length of the boat in feet.	Yes

Request Body Example
```
{
    "name": "Bleu's edited boat",
    "type": "Bigger pirate ship",
    "length": 28
}
```

RESPONSE

Response Body Format
JSON
Response Statuses

Outcome	Status Code	Notes

Success	200	
Failure	415	Client sends an unsupported MIME type to the endpoint
Failure	406	Accept MIME type not supported
Failure	404	No boat with this boat_id exists
Failure	403	The user will receive this code for unauthorized actions. Users are not allowed to edit boats that don't belong to them, and users are not allowed to edit a boat's id.
Failure	401	Invalid or missing JWT
Failure	400	The request object is missing at least one of the required attributes

Response Examples

Success

   Status: 200

```
{
    "id": 5637476211228672,
    "length": 200,
    "loads": [],
    "name": "Bleu's patched boat",
    "owner": "auth0|655c1508022a9fc3be9be5c6",
    "self": "https://final-loyami.uw.r.appspot.com/boats/5637476211228672",
    "type": "Paddle Boat"
}
```

Failure

   Status: 415
```
{
    "error": "Request must be JSON"
}
```
   Status: 406
```
{
    "error": "Accept MIME type not supported"
}
```
   Status: 404
```
{
    "error": "No boat with this boat_id exists"
}
```
   Status: 403
```
{
    "error": "You are not the owner of this boat"
}
```
   Status: 401
```
{
    "error": "({'code': 'no auth header', 'description': 'Authorization header is missing'}, 401)"
}
```
   Status: 400
```
{
    "error": "The request object is missing at least one of the required attributes"
}
```

Create a Load

Allows you to create a new load.

POST /loads

REQUEST

Path Parameters

None

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

Name	Description	Required?
volume	The volume of the load in cubic feet.	Yes
item	The type of item stored in the load	Yes
creation_date	The date when the load was created	Yes

Request Body Example
```
{
  "volume": 5,
  "item": "Gold",
  "creation_date": "10/18/2021"
}
```

RESPONSE

Request Body Format
JSON

Response Statuses

Outcome	Status Code	Notes
Success	201 Created	
Failure	415	Client sends an unsupported MIME type to the endpoint
Failure	406	Accept MIME type not supported
Failure	400	Unable to identify owner from JWT

Response Examples

Success

Status: 201 Created

```
{
    "carrier": null,
    "creation_date": "10/18/2021",
    "id": 5070428590571520,
    "item": "Gold",
    "self": "https://final-loyami.uw.r.appspot.com/loads/5070428590571520",
    "volume": 5
}
```

Failure

Status: 415

```
{
    "error": "Request must be JSON"

}
```

Status: 406

```
{
    "error": "Accept MIME type not supported"
}
```

Status: 400

```
{
    "error": "Unable to identify owner from JWT"
}
```

Get Loads

Allows you to retrieve the collection of loads

GET /loads

REQUEST

Path Parameters

None

Request Body

None

Request Body Format

N/A

Request JSON Attributes

N/A

Request Body Example

N/A

RESPONSE

Response Body Format
JSON

Response Statuses

Outcome	Status Code	Notes
Success	200	
Failure	406	Accept MIME type not supported

Additional Response Notes
The results will return paginated. The collection will be shown 5 entities at a time.

Response Examples

Success

Status: 200

```
{
    "loads": [
        {
            "carrier": null,
            "creation_date": "10/18/2021",
            "id": 5070428590571520,
            "item": "Gold",
            "self": "https://final-loyami.uw.r.appspot.com/loads/5070428590571520",
            "volume": 5
        },
        {
            "carrier": null,
            "creation_date": "10/18/2021",
            "id": 5143677177430016,
            "item": "Silver",
            "self": "https://final-loyami.uw.r.appspot.com/loads/5143677177430016",
            "volume": 5
        },
        {
            "carrier": null,
            "creation_date": "10/18/2021",
            "id": 5635008819625984,
            "item": "Silver",
            "self": "https://final-loyami.uw.r.appspot.com/loads/5635008819625984",
            "volume": 5
        }
    ],
    "next": null,
    "prev": null,
    "total_count": 3
}
```

Failure

Status: 406

```
{
    "error": "Accept MIME type not supported"
}
```

Delete/Put/Patch Loads

None of these methods are supported

DELETE /loads, PUT /loads, PATCH /loads

RESPONSE

Response Body Format
JSON

Response Statuses

Outcome	Status Code	Notes
Failure	405	Accept MIME type not supported

Response Examples

Failure

Status: 405
DELETE, PUT, and PATCH requests are not supported on /loads

Get a Load

Allows you to retrieve a 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	
Failure	404	No load with this load_id exists
Failure	406	Accept MIME type not supported

Response Examples

Success

Status: 200
```
{
    "carrier": null,
    "creation_date": "10/18/2021",
    "id": 5070428590571520,
    "item": "Gold",
    "self": "https://final-loyami.uw.r.appspot.com/loads/5070428590571520",
    "volume": 5
}
```

Failure

Status: 406
```
{
```

```
    "error": "Accept MIME type not supported"

}Status: 404
{
    "error": "No boat with this boat_id exists"

}
```

Delete a Load

Allows you to delete a load from the collection

DELETE /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	204	Deletion successful
Failure	404	No load with this ID exists

Response Examples

Success
Status: 204 Created

Failure
Status: 404
```
{
    "error": "No load with this load_id exists"
}
```

Patch a Load

Allows you to update all or some attributes of a specified load

PATCH /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 volume of the load in cubic feet.	No
item	The type of item stored in the load	No
creation_date	The date when the load was created	No

Request Body Example
{
  "item": "Bronze"
}

RESPONSE

Response Body Format
JSON

Response Statuses

Outcome	Status Code	Notes

Success	200	
Failure	415	Client sends an unsupported MIME type to the endpoint
Failure	406	Accept MIME type not supported
Failure	404	No boat with this load_id exists
Failure	403	The user will receive this code for unauthorized actions. Users are not allowed to edit ids
Failure	400	The request attribute contains unsupported attributes

Response Examples

Success

Status: 200
```
{
    "carrier": null,
    "creation_date": "10/18/2021",
    "id": 5070428590571520,
    "item": "Bronze",
    "self": "https://final-loyami.uw.r.appspot.com/loads/5070428590571520",
    "volume": 5
}
```

Failure

Status: 415
```
{
    "error": "Request must be JSON"
}
```
Status: 406
```
{
    "error": "Accept MIME type not supported"
}
```
Status: 404
```
{
    "error": "No boat with this load_id exists"

}
```
Status: 403
```
{
    "error": "You are not the owner of this boat"
}
```

Status: 401
```
{
    "error": "({'code': 'no auth header', 'description': 'Authorization header is missing'}, 401)"
}
```
Status: 400
```
{
    "error": "The request attribute contains unsupported attributes"
}
```

Put a Load

Allows you to update all the attributes of a specified load

    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 volume of the load in cubic feet.	Yes
item	The type of item stored in the load	Yes
creation_date	The date when the load was created	Yes

Request Body Example
```
{
 "volume": 5,
 "item": "Gold",
 "creation_date": "10/18/2021"
}
```

RESPONSE

Response Body Format
JSON

Response Statuses

Outcome	Status Code	Notes
Success	200	
Failure	415	Client sends an unsupported MIME type to the endpoint
Failure	406	Accept MIME type not supported
Failure	404	No boat with this load_id exists
Failure	403	The user will receive this code for unauthorized actions. Users are not allowed to edit ids
Failure	400	The request attribute contains unsupported attributes or the request object is missing at least one of the required attributes

Response Examples

Success

Status: 200
```
{
    "carrier": null,
    "creation_date": "10/18/2021",
    "id": 5070428590571520,
    "item": "Gold",
    "self": "https://final-loyami.uw.r.appspot.com/loads/5070428590571520",
    "volume": 5
}
```

Failure

Status: 415
```
{
    "error": "Request must be JSON"
}
```
Status: 406
```
{
    "error": "Accept MIME type not supported"
}
```
Status: 404
```
{
    "error": "No boat with this load_id exists"

}
```
Status: 403
```
{
    "error": "You are not the owner of this boat"
}
```

Status: 401
```
{
    "error": "({'code': 'no auth header', 'description': 'Authorization header is missing'}, 401)"
}
```
Status: 400
```
{
    "error": "The request object is missing at least one of the required attributes"
}
```

Assign a Load

Allows you to assign a load to a boat

PUT boats/<boat_id> /loads/:load_id

REQUEST

Path Parameters

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

Request Body

None

RESPONSE

Response Body Format
JSON

Response Statuses

Outcome	Status Code	Notes
Success	204	
Failure	404	The specified boat and/or load does not exist
Failure	403	The load is already loaded on another boat

Response Examples

Success

Status: 200

Failure

Status: 404
{
    "error": "The specified boat and/or load does not exist"

}
Status: 403
{

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

Remove a Load

Allows you to remove a load from a boat

DELETE boats/<boat_id> /loads/:load_id

REQUEST

Path Parameters

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

Request Body

None

RESPONSE

Response Body Format
JSON

Response Statuses

Outcome	Status Code	Notes
Success	204	
Failure	404	The specified boat and/or load does not exist OR no boat with this boat_id is loaded with the load with this load_id

Response Examples

Success

Status: 200

Failure

Status: 404
{
    "error": "No boat with this boat_id is loaded with the load with this load_idt"

}

Get Users

Allows you to retrieve a list of users

GET /users

REQUEST

Path Parameters

None

Request Body

None

RESPONSE

Response Body Format
JSON

Response Statuses

Outcome	Status Code	Notes
Success	200	

Response Examples

Success

Status: 200
```
[
  {
    "user_id": "auth0|6576639c9fa97e13efcf6028"
  },
  {
    "user_id": "auth0|65754fc6e94488fb5f77d525"
  },
  {
    "user_id": "auth0|657662e7ef593280157c87f1"
  }
]
```