

# Final: API Spec

CS 493: Cloud Application Development

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## Data Model

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

### Boats

Property	Data Type	Required	Notes
id	Integer	N/A	The id of the boat. Datastore automatically generates it. Don't add it yourself as a property of the entity.
name	String	Yes	Name of the boat.
type	String	Yes	Type of the boat. E.g., Sailboat, Catamaran, etc.
length	Integer	Yes	The length of the boat in feet.
owner	String	Yes	The oauth_id of user who owns the boat.

### Loads

Property	Data Type	Required	Notes
id	Integer	N/A	The id of the slip. Datastore automatically generates it. Don't add it yourself as a property of the entity.
volume	Integer	Yes	Volume of the load
item	String	Yes	What the load is
creation_date	String	Yes	Date the load was created
carrier	String	No	Id of the boat the load is on.

### Users

Property	Data Type	Required	Notes
id	Integer	N/A	The Datastore Id of the user. Unique identifier.
oauth_id	Integer	Yes	Sub from JWT token.
Name	String	Yes	Name of user

## List all Users

List all the users.

GET /boats
------------

Protected

No

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
<pre>[ {   "oauth_id": "123456789",   "id": "5079418695319552",   "name": "Mikayla Friend" }, ]</pre>

## Create a Boat

Allows you to create a new boat.

POST /boats

Protected

Yes

Request

Path Parameters

None

Request Body

Required

Request Header

JWT

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

Request Body Example

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

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	201 Created	
Failure	400 Bad Request	
Failure	401 Unauthorized	
Failure	406 Not Acceptable	
Failure	415 Unsupported Media Type	

## Response Examples

### *Success*

Status: 201 Created

```
{
  "name": "Sea Witch",
  "type": "Catamaran",
  "length": 28,
  "id": "4646508943114240",
  "owner": "107027575270420920977",
  "self": "http://127.0.0.1:8080/boats/4646508943114240"
}
```

### *Failure*

Status: 400 Bad Request

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

Status: 401 Unauthorized

```
{
  "Error": "Bad JWT."
}
```

Status: 406 Not Acceptable

```
{
  "Error": "Server only sends application/json data."
}
```

Status: 415 Unsupported Media Type

```
{
  "Error": "Server only accepts application/json data."
}
```

## Get a Boat

Allows you to get an existing boat.

GET /boats/:boat\_id

Protected

Yes

Request

Path Parameters

Name	Description
boat_id	ID of the boat

Request Body

None

Request Header

JWT

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	401 Unauthorized	
Failure	403 Forbidden	
Failure	404 Not Found	
Failure	406 Not Acceptable	

Response Examples

*Success*

Status: 200 OK

```
{
  "id": 123,
  "name": "Sea Witch",
  "type": "Catamaran",
  "length": 28,
  "owner": "123456"
  "self": "https://appspot.com/boats/123"
}
```

### *Failure*

Status: 401 Unauthorized

```
{  
  "Error": "Bad JWT."  
}
```

Status: 403 Forbidden

```
{  
  "Error": "You don't have permission to access this entity."  
}
```

Status: 404 Not Found

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

Status: 406 Not Acceptable

```
{  
  "Error": "Server only sends application/json."  
}
```

## Get a Load

Allows you to get an existing Load

GET /loads/:load\_id

Protected

No

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	
Failure	406 Not Acceptable	

Response Examples

*Success*

Status: 200 OK

```
{
  "id": 123,
  "name": "Sea Witch",
  "type": "Catamaran",
  "length": 28,
  "owner": "123456"
  "self": "https://appspot.com/boats/123"
}
```



### *Failure*

Status: 404 Not Found

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

Status: 406 Not Acceptable

```
{  
  "Error": "Server only sends application/json."  
}
```

## Create a Load

Allows you to create a new load.

POST /loads

Protected

No

Request

Path Parameters

None

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

Name	Type	Description	Required?
volume	Int	Volume of the load.	Yes
item	String	What the load is carrying	Yes
creation_date	String	Date the load was created	Yes

Request Body Example

```
{
  "volume": 5,
  "item": "LEGO Blocks",
  "creation_date": "10/18/2021"
}
```

Response

Response Body Format

JSON

Response Status

Outcome	Status Code	Notes
Success	201 Created	
Failure	400 Bad Request	
Failure	406 Not Acceptable	
Failure	415 Unsupported Media Type	

## Response Examples

### Success

Status: 201 Created

```
{
  "volume": 5,
  "item": "LEGO Blocks",
  "carrier": null,
  "creation_date": "10/18/2021",
  "id": "5706627130851328",
  "self": "http://127.0.0.1:8080/loads/5706627130851328"
}
```

### Failure

Status: 400 Bad Request

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

Status: 406 Not Acceptable

```
{
  "Error": "Server only sends application/json data."
}
```

Status: 415 Unsupported Media Type

```
{
  "Error": "Server only accepts application/json data."
}
```

## Delete a Boat

Allows you to delete a boat.

DELETE /boats/:boat_id
------------------------

Protected

Yes

### Request

Path Parameters

Name	Description
boat_id	ID of the boat

Request Body

None

Request Header

JWT

### Response

No body

Response Body Format

Success: No body

Failure: JSON

Response Statuses

Outcome	Status Code	Notes
Success	204 OK	
Failure	403 Forbidden	
Failure	404 Not Found	

Response Examples

*Success*

Status: 204 No Content
------------------------

*Failure*

Status: 403 Forbidden
-----------------------

<pre>{   "Error": "You don't have permission to access this entity." }</pre>
--

Status: 404 Not Found
-----------------------

<pre>{   "Error": "No entity with this id exists." }</pre>
--



## Delete a Load

Allows you to delete a load.

DELETE /loads/:load_id
------------------------

Protected

No

### 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 OK	
Failure	404 Not Found	

Response Examples

*Success*

Status: 204 No Content
------------------------

*Failure*

Status: 404 Not Found
-----------------------

<pre>{   "Error": "No entity with this id exists." }</pre>
--

## Assign Load to Boat

Load is assigned to a boat.

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

Protected

No

Request

Path Parameters

Name	Description
load_id	ID of the load
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	404 Not Found	

Response Examples

*Success*

Status: 204 No Content

*Failure*

Status: 404 Not Found

```
{  
  "Error": "No entity with this id exists."  
}
```

## Remove Load to Boat

Load is assigned to a boat.

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

Protected

No

Request

Path Parameters

Name	Description
load_id	ID of the load
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	404 Not Found	

Response Examples

*Success*

Status: 204 No Content

*Failure*

Status: 404 Not Found

```
{  
  "Error": "No entity with this id exists."  
}
```



## Partial Edit a Boat - Protected

Partial edit of attributes of a boat.

PATCH /boats/:boat\_id

Protected

Yes

Request

Path Parameters

Name	Description
boat_id	ID of the boat

Request Body

Required

Request Header

JWT

Request Body Format

JSON

Request JSON Attributes

Name	Type	Description	Required?
name	String	The name of the boat.	Optional
type	String	The type of the boat. E.g., Sailboat, Catamaran, etc.	Optional
length	Integer or float	Length of the boat in feet.	Optional

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	
Failure	403 Forbidden	
Failure	404 Not Found	
Failure	406 Not Acceptable	
Failure	415 Unsupported Media Type	



## Response Examples

### Success

Status: 200 OK

```
{
  "name": "Sea Witch",
  "type": "Catamaran",
  "length": 28,
  "id": "4646508943114240",
  "owner": "107027575270420920977",
  "self": "http://127.0.0.1:8080/boats/4646508943114240"
}
```

### Failure

Status: 401 Unauthorized

```
{
  "Error": "Bad JWT."
}
```

Status: 403 Forbidden

```
{
  "Error": "You don't have permission to access this entity."
}
```

Status: 404 Not Found

```
{
  "Error": "No entity with this id exists."
}
```

Status: 406 Not Acceptable

```
{
  "Error": "Server only sends application/json data."
}
```

Status: 415 Unsupported Media Type

```
{
  "Error": "Server only accepts application/json data."
}
```

## Partial Edit a Load

Partial edit of attributes of a load.

PATCH /boats/:boat\_id

Protected

No

Request

Path Parameters

Name	Description
load_id	ID of the load

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

Name	Type	Description	Required?
volume	Integer	Volume of the load.	Optional
item	String	What the load is carrying	Optional
creation_date	String	Date the load was created	Optional

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	
Failure	406 Not Acceptable	
Failure	415 Unsupported Media Type	

## Response Examples

### Success

Status: 200 OK

```
{
  "volume": 5,
  "item": "LEGO Blocks",
  "carrier": null,
  "creation_date": "10/18/2021",
  "id": "5706627130851328",
  "self": "http://127.0.0.1:8080/loads/5706627130851328"
}
```

### Failure

Status: 404 Not Found

```
{
  "Error": "No entity with this id exists."
}
```

Status: 406 Not Acceptable

```
{
  "Error": "Server only sends application/json data."
}
```

Status: 415 Unsupported Media Type

```
{
  "Error": "Server only accepts application/json data."
}
```

## Full Edit a Boat

Partial edit of attributes of a boat.

PATCH /boats/:boat\_id

Protected

Yes

Request

Path Parameters

Name	Description
boat_id	ID of the boat

Request Body

Required

Request Header

JWT

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 or float	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	
Failure	401 Unauthorized	
Failure	403 Forbidden	
Failure	404 Not Found	
Failure	406 Not Acceptable	

Failure	415 Unsupported Media Type	
---------	-------------------------------	--

## Response Examples

### Success

Status: 200 OK

```
{
  "name": "Sea Witch",
  "type": "Catamaran",
  "length": 28,
  "id": "4646508943114240",
  "owner": "107027575270420920977",
  "self": "http://127.0.0.1:8080/boats/4646508943114240"
}
```

### Failure

Status: 400 Bad Request

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

Status: 401 Unauthorized

```
{
  "Error": "Bad JWT."
}
```

Status: 403 Forbidden

```
{
  "Error": "You don't have permission to access this entity."
}
```

Status: 404 Not Found

```
{
  "Error": "No entity with this id exists."
}
```

Status: 406 Not Acceptable

```
{
  "Error": "Server only sends application/json data."
}
```

Status: 415 Unsupported Media Type

```
{
  "Error": "Server only accepts application/json data."
}
```



## Full Edit a Load

Partial edit of attributes of a load.

PATCH /loads/:load\_id

Protected

No

Request

Path Parameters

Name	Description
load_id	ID of the load

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

Name	Type	Description	Required?
volume	Integer	Volume of the load.	Yes
item	String	What the load is carrying	Yes
creation_date	String	Date the load was created	Yes

Request Body Example

```
{
  "volume": 5,
  "item": "LEGO Blocks",
  "creation_date": "12/4/2022"
}
```

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	400 Bad Request	
Failure	404 Not Found	
Failure	406 Not Acceptable	
Failure	415 Unsupported Media Type	

## Response Examples

### Success

Status: 200 OK

```
{
  "volume": 5,
  "item": "LEGO Blocks",
  "carrier": null,
  "creation_date": "12/4/2022",
  "id": "5706627130851328",
  "self": "http://127.0.0.1:8080/loads/5706627130851328"
}
```

### Failure

Status: 400 Bad Request

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

Status: 404 Not Found

```
{
  "Error": "No entity with this id exists."
}
```

Status: 406 Not Acceptable

```
{
  "Error": "Server only sends application/json data."
}
```

Status: 415 Unsupported Media Type

```
{
  "Error": "Server only accepts application/json data."
}
```

## List all Boats

List all the boats for owner.

GET /boats
------------

Protected

Yes

Request

Path Parameters

None

Request Body

None

Request Header

JWT

Response

Response Body Format

JSON

Response Statuses

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	401 Unauthorized	
Failure	406 Not Acceptable	

## Response Examples

### Success

Status: 200 OK

```
{
  "total_items": 1,
  "boats": [
    {
      "type": "Yatch",
      "name": "Odyssey",
      "length": 99,
      "owner": "107027575270420920977",
      "id": "5077875795427328",
      "loads": [
        {
          "item": "LEGO Blocks",
          "creation_date": "10/18/2021",
          "volume": 1,
          "carrier": "5077875795427328",
          "id": "6588094945951744",
          "self": "http://localhost:8080/loads/6588094945951744"
        }
      ],
      "self": "http://localhost:8080/boats/5077875795427328"
    }
  ]
}
```

### Failure

Status: 401 Unauthorized

```
{
  "Error": "Bad JWT."
}
```

Status: 406 Not Acceptable

```
{
  "Error": "Server only sends application/json."
}
```

## List all Loads

List all the loads.

GET /loads
------------

Protected

No

Request

Path Parameters

None

Request Body

None

Response

Response Body Format

JSON

Response Statuses

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	406 Not Acceptable	

## Response Examples

### Success

Status: 200 OK

```
{
  "total_items": 7,
  "next":
"http://localhost:8080/loads?cursor=CjISLGoWenV3fmNzNDkzLWZpbmFsLTM3MDQwNXISCxIFTG9hZH
MYgICAmMW9ygoMGAAGAA%3D%3D",
  "loads": [
    {
      "item": "LEGO Blocks",
      "carrier": null,
      "volume": 3,
      "creation_date": "10/18/2021",
      "id": "4895531146936320",
      "self": "http://localhost:8080/loads/4895531146936320"
    },
    {
      "creation_date": "10/18/2021",
      "carrier": null,
      "volume": 4,
      "item": "LEGO Blocks",
      "id": "5186940114567168",
      "self": "http://localhost:8080/loads/5186940114567168"
    },
    {
      "volume": 2,
      "item": "LEGO Blocks",
      "carrier": null,
      "creation_date": "10/18/2021",
      "id": "5750704903815168",
      "self": "http://localhost:8080/loads/5750704903815168"
    },
    {
      "creation_date": "10/18/2021",
      "volume": 6,
      "carrier": null,
      "item": "LEGO Blocks",
      "id": "5918951187939328",
      "self": "http://localhost:8080/loads/5918951187939328"
    },
    {
      "creation_date": "10/18/2021",
```

```
    "volume": 5,  
    "carrier": null,  
    "item": "LEGO Blocks",  
    "id": "5957069492453376",  
    "self": "http://localhost:8080/loads/5957069492453376"  
  }  
]  
}
```

#### *Failure*

```
Status: 406 Not Acceptable  
  
{  
  "Error": "Server only sends application/json."  
}
```