

Portfolio Assignment: API Spec

CS 493: Cloud Application Development

Fall 2023

Oregon State University

Link to application and account creation: <https://cs493-portfolio-406520.uw.r.appspot.com/>

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Change log

Version	Change	Date
1.0	Initial version.	Dec 10,2023

Data Model

This application models a typical blog web application. The app stores three kinds of entities in Datastore, Users, Posts, and Collections.

Users

Property	Data Type	Notes
id	Integer	The id of the User. Datastore automatically generates it.
userId	String	Unique User ID generated by Auth0
email	String	Email of user
posts	Array[Integer]	Array containing post IDs of user's posts
collections	Array[Integer]	Array containing collection IDs of user's collections
Join_date	String	Date user's account was created

Posts

Property	Data Type	Notes
id	Integer	The id of the blog post. Datastore automatically generates it.
title	String	Title of post
content	String	Text content of post
creationDate	String	The date and time the post was created
collections	Array	Collection IDs containing the post

Collections

Property	Data Type	Notes
id	Integer	The id of the load. Datastore automatically generates it.
name	String	Name of collection
description	String	Description of collection
creationDate	String	The date and time collection was created
posts	Array	Array of Post IDs in collection
owner	String	userID of user who created collection

- A Collection can hold multiple Posts.
- A Post can be in multiple Collections
- The user unique identifier is the "sub" value returned after authenticating with Auth0
- The application takes the supplied JWT, decodes it, and extracts the "sub" value which is the User's unique identifier
- A User can store multiple Posts and multiple Collections

Authorized Access

Every method to the `/posts`, `/posts/:post_id`, `/collections`, `/collections/:collection_id` endpoints are protected resources and only authorized users are granted access.

After user authentication, include JWT as a Bearer Token in the Authentication Header of request to perform method. In the case of any errors, expect the following responses.

Response Statuses

Outcome	Status Code	Notes
Failure	401 Unauthorized	Invalid Authorization. Can be due to invalid token, expired token, or missing token.
Failure	403 Forbidden	Authentication is valid but access resources that do not belong to the user.

Request Body Examples

```
401
{
  "code": "invalid_header",
  "description": "Invalid header. Use an RS256 signed JWT Access Token"
}
```

```
403
{
  "Error": "This post does not belong to you"
}
```

Create a Post (Protected)

Allows you to create a new post.

POST /posts

Request

Path Parameters

None

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

Name	Description	Required?
title	The name of the post.	Yes
content	The text content of the post.	Yes

Request Body Example

```
{
  "title": "User 1 Post",
  "content": "This is my first post"
}
```

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 must not be created, and 400 status code must be returned.

Response Examples

- Datastore will automatically generate an ID and store it with the entity being created.

Success

Status: 201 Created

```
{
  "collections": [],
  "content": " This is my first post ",
  "creationDate": "2023-12-11 04:02:26",
  "id": 5082810578632704,
  "self": "https://cs493-portfolio-
```

```
406520.uw.r.appspot.com/posts/5082810578632704",  
  "title": "User 1 Post"  
}
```

Get a Post (Protected)

Allows you to get an existing post

GET /posts/:post_id

Request

Path Parameters

Name	Description
Post_id	ID of the post

Request Body

None

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	404 Not Found	Invalid Post ID

Response Examples

Success

Status: 200 OK

```
{
  "collections": [],
  "content": " This is my first post ",
  "creationDate": "2023-12-11 04:02:26",
  "id": 5082810578632704,
  "self": "https://cs493-portfolio-406520.uw.r.appspot.com/posts/5082810578632704",
  "title": "User 1 Post"
}
```

Failure

Status: 404 Not Found

```
{
  "Error": "Invalid Post ID"
}
```

List all Posts (Protected)

List all the posts.

GET /posts

Request

Path Parameters

Limit – results per page (default 5)

Offset- Starting point of results

Request Body

None

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	Responses are paginated, 5 results per page. Next URL displays the next 5 results.

Response Examples

Success

```
Status: 200 OK
{
  "next": "https://cs493-portfolio-406520.uw.r.appspot.com/posts?limit=5&offset=5",
  "posts": [
    {
      "author": "auth0|657170004c1cb0e3e43caaaa",
      "collections": [],
      "content": "Ut architecto ut iusto adipisci magni. Nihil tempore temporibus voluptatem exercitationem. Laborum tenetur nihil expedita optio et sint nostrum.",
      "creationDate": "2023-12-11 04:02:26",
      "id": "5082810578632704",
      "self": "https://cs493-portfolio-406520.uw.r.appspot.com/posts/5082810578632704",
      "title": "User 1 Post 568"
    },
    {
      "author": "auth0|657170004c1cb0e3e43caaaa",
      "collections": [],
      "content": "Qui iste alias delectus dolor sit mollitia minima voluptatum. Accusamus ad fuga exercitationem maiores voluptatem eius commodi deleniti. Doloribus quia dicta dignissimos. Eveniet placeat ratione minima illo porro excepturi ut.",
      "creationDate": "2023-12-10 12:53:18",
      "id": "5104575795167232",
      "self": "https://cs493-portfolio-406520.uw.r.appspot.com/posts/5104575795167232",
      "title": "User 1 Post 697"
    },
    {
      "author": "auth0|657170004c1cb0e3e43caaaa",
      "collections": [],
      "content": "Suscipit dolorem tempore ut dolore sequi quasi quae. Accusamus architecto sapiente. Eligendi quo repellat nulla aut consequatur. Aspernatur repellat aut veritatis eos numquam autem qui. Adipisci nobis iste vitae.",
      "creationDate": "2023-12-10 12:53:22",
      "id": "5110132711096320",
      "title": "User 1 Post 697"
    }
  ]
}
```

```

        "self": "https://cs493-portfolio-406520.uw.r.appspot.com/posts/5110132711096320",
        "title": "User 1 Post 71"
    },
    {
        "author": "auth0|657170004c1cb0e3e43caaaa",
        "collections": [],
        "content": "In deserunt quia illum harum enim. Voluptas aliquam quasi illum totam quo
ut tempore consectetur qui.",
        "creationDate": "2023-12-10 12:53:20",
        "id": 5116145900191744,
        "self": "https://cs493-portfolio-406520.uw.r.appspot.com/posts/5116145900191744",
        "title": "User 1 Post 378"
    },
    {
        "author": "auth0|657170004c1cb0e3e43caaaa",
        "collections": [],
        "content": "PUT Quis labore fugiat ut nostrum laborum nihil est. Quis rem laudantium
ut ut vero ipsa. Voluptates voluptas iure distinctio beatae ex nihil sunt non. Id aut ut sed
repellendus adipisci laudantium enim accusantium. Illo quos consectetur dicta error quam
temporibus vitae. Saepe quibusdam sunt dolorum quidem vero est quo odio rerum.",
        "creationDate": "2023-12-10 20:04:46",
        "id": 5637377896742912,
        "self": "https://cs493-portfolio-406520.uw.r.appspot.com/posts/5637377896742912",
        "title": "User 1 Post PUT 892"
    }
],
"totalNumberOfItems": 18
}

```


Delete a Post (Protected)

Allows you to delete a post.

DELETE /posts/:post_id

Request

Path Parameters

Name	Description
Post_id	ID of the post

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	Invalid Post ID

Response Examples

Success

Status: 204 No Content

Failure

Status: 404 Not Found

```
{
  "Error": "Invalid Post ID"
}
```

Update a Post (PUT) (Protected)

Allows you to update post

PUT /posts/:post_id

Request

Path Parameters

Name	Description
Post_id	ID of the post

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

Name	Description	Required?
title	The name of the post.	Yes
content	The text content of the post.	Yes

Request Body Example

```
{
  "title": "User 1 Post Update",
  "content": "This is my first post update"
}
```

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	404 Not Found	Invalid Post ID

Response Examples

Success

Status: 200 OK

```
{
  "collections": [],
  "content": " This is my first post update ",
  "creationDate": "2023-12-11 04:02:26",
  "id": 5082810578632704,
  "self": "https://cs493-portfolio-406520.uw.r.appspot.com/posts/5082810578632704",
  "title": "User 1 Post Update"
}
```

Failure

Status: 404 Not Found

```
{  
  "Error": "Invalid Post ID"  
}
```

Update a Post (PATCH) (Protected)

Allows you to partially update post

PATCH /posts/:post_id

Request

Path Parameters

Name	Description
Post_id	ID of the post

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

Name	Description	Required?
title	The name of the post.	No
content	The text content of the post.	No

Request Body Example

```
{
  "content": "This is my first post edit."
}
```

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	404 Not Found	Invalid Post ID

Response Examples

Success

Status: 200 OK

```
{
  "collections": [],
  "content": " This is my first post edit",
  "creationDate": "2023-12-11 04:02:26",
  "id": 5082810578632704,
  "self": "https://cs493-portfolio-406520.uw.r.appspot.com/posts/5082810578632704",
  "title": "User 1 Post"
}
```

Failure

Status: 404 Not Found

```
{  
  "Error": "Invalid Post ID"  
}
```

Create a Collection (Protected)

Allows you to create a new collection.

POST /collections

Request

Path Parameters

None

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

Name	Description	Required?
name	The name of the collection.	Yes
description	The description of a collection.	Yes

Request Body Example

```
{
  "name": "User 1 Collection",
  "description": "Posts about cats"
}
```

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 must not be created, and 400 status code must be returned.

Response Examples

- Datastore will automatically generate an ID and store it with the entity being created.

Success

Status: 201 Created

```
{
  "creationDate": "2023-12-11 04:33:02",
  "description": "Posts about cats",
  "id": 5662792157757440,
  "name": "User 1 Collection",
  "owner": "auth0|657170004c1cb0e3e43caaaa",
  "posts": [],
}
```

```
"self": "https://cs493-portfolio-  
406520.uw.r.appspot.com/collections/5662792157757440"  
}
```

Get a Collection (Protected)

Allows you to get an existing collection.

GET /collections/:collection_id

Request

Path Parameters

Name	Description
collection_id	ID of the collection

Request Body

None

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	404 Not Found	Invalid Collection ID

Response Examples

Success

Status: 200 OK

```
{
  "creationDate": "2023-12-11 04:33:02",
  "description": "Posts about cats",
  "id": 5662792157757440,
  "name": "User 1 Collection",
  "owner": "auth0|657170004c1cb0e3e43caaaa",
  "posts": [],
  "self": "https://cs493-portfolio-406520.uw.r.appspot.com/collections/5662792157757440"
}
```

Failure

Status: 404 Not Found

```
{
  "Error": "Invalid Collection ID"
}
```


List all Collections (Protected)

List all the collections.

GET /collections

Request

Path Parameters

Limit – results per page (default 5)

Offset- Starting point of results

Request Body

None

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	Responses are paginated, 5 results per page. Next URL displays the next 5 results.

Response Examples

Success

```
Status: 200 OK
{
  "collections": [
    {
      "creationDate": "2023-12-10 13:58:10",
      "description": "molestias et sed",
      "id": 5074526257807360,
      "name": "User 1 Collection 658",
      "owner": "auth0|657170004c1cb0e3e43caaaa",
      "posts": [],
      "self": "https://cs493-portfolio-406520.uw.r.appspot.com/collections/5074526257807360"
    },
    {
      "creationDate": "2023-12-10 13:58:15",
      "description": "nostrum quia aliquid",
      "id": 5129025567588352,
      "name": "User 1 Collection 259",
      "owner": "auth0|657170004c1cb0e3e43caaaa",
      "posts": [],
      "self": "https://cs493-portfolio-406520.uw.r.appspot.com/collections/5129025567588352"
    },
    {
      "creationDate": "2023-12-10 13:58:12",
      "description": "quasi quo sint",
      "id": 5177006123646976,
      "name": "User 1 Collection 526",
      "owner": "auth0|657170004c1cb0e3e43caaaa",
      "posts": [],
      "self": "https://cs493-portfolio-406520.uw.r.appspot.com/collections/5177006123646976"
    }
  ]
}
```

```

    {
      "creationDate": "2023-12-10 13:58:13",
      "description": "ea culpa adipisci",
      "id": 5182803792625664,
      "name": "User 1 Collection 681",
      "owner": "auth0|657170004c1cb0e3e43caaaa",
      "posts": [],
      "self": "https://cs493-portfolio-
406520.uw.r.appspot.com/collections/5182803792625664"
    },
    {
      "creationDate": "2023-12-10 21:24:46",
      "description": "voluptatum incidunt qui",
      "id": 5651673292734464,
      "name": "User 1 Collection 523",
      "owner": "auth0|657170004c1cb0e3e43caaaa",
      "posts": [],
      "self": "https://cs493-portfolio-
406520.uw.r.appspot.com/collections/5651673292734464"
    }
  ],
  "next": "https://cs493-portfolio-406520.uw.r.appspot.com/collections?limit=5&offset=5",
  "totalNumberOfItems": 10
}

```

Delete a Collection (Protected)

Allows you to delete a collection.

DELETE /collections/:collections_id

Request

Path Parameters

Name	Description
collection_id	ID of the collection

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	Invalid Collection ID

Response Examples

Success

Status: 204 No Content

Failure

Status: 404 Not Found

```
{
  "Error": "Invalid Collection ID"
}
```

Update a Collection (PUT) (Protected)

Allows you to update collection

PUT / collections/:collections_id

Request

Path Parameters

Name	Description
collection_id	ID of the collection

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

Name	Description	Required?
name	The name of the collection.	Yes
description	The description of a collection.	Yes

Request Body Example

```
{
  "name": "User 1 Collection Update",
  "description": "Posts about cats and dogs"
}
```

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	404 Not Found	Invalid Post ID

Response Examples

Success

Status: 200 OK

```
{
  "creationDate": "2023-12-10 13:58:10",
  "description": "Posts about cats and dogs",
  "id": 5074526257807360,
  "name": "User 1 Collection Update",
  "owner": "auth0|657170004c1cb0e3e43caaaa",
  "posts": [],
  "self": "https://cs493-portfolio-406520.uw.r.appspot.com/collections/5074526257807360"
}
```

Failure

Status: 404 Not Found

```
{  
  "Error": "Invalid Collection ID"  
}
```

Update a Collection (PATCH) (Protected)

Allows you to partially update collection

PUT / collections/:collections_id

Request

Path Parameters

Name	Description
collection_id	ID of the collection

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

Name	Description	Required?
name	The name of the collection.	No
description	The description of a collection.	No

Request Body Example

```
{
  "description": "Posts about cats and dogs and fish"
}
```

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	404 Not Found	Invalid Post ID

Response Examples

Success

Status: 200 OK

```
{
  "creationDate": "2023-12-10 13:58:10",
  "description": "Posts about cats and dogs and fish",
  "id": 5074526257807360,
  "name": "User 1 Collection Update",
  "owner": "auth0|657170004c1cb0e3e43caaaa",
  "posts": [],
  "self": "https://cs493-portfolio-406520.uw.r.appspot.com/collections/5074526257807360"
}
```

Failure

Status: 404 Not Found

```
{  
  "Error": "Invalid Collection ID"  
}
```

Add Post to Collection (Not Protected)

PUT /collections/:collection_id/posts/:post_id

Request

Path Parameters

Name	Description
post_id	ID of the post
collection_id	ID of the collection

Request Body

None

Response

No body

Response Body Format

Success: No body

Failure: JSON

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	Success
Failure	403 Forbidden	The post already exists in the collection
Failure	404 Not Found	The specified post and/or collection does not exist

Response Examples

Success

Status: 204 No Content

Failure

Status: 403 Forbidden

```
{
  "Error": " This post is already in this collection "
}
```

Status: 404 Not Found

```
{
  "Error": "invalid Collection/Post ID"
}
```

Comment

- A collection cannot store the same post more than once.

Remove Post from Collection (Not Protected)

DELETE / collections/:collection_id/posts/:post_id

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	Success
Failure	403 Forbidden	The collection does not contain the post
Failure	404 Not Found	The specified post and/or collection does not exist

Response Examples

Success

Status: 204 No Content

Failure

Status: 404 Not Found

```
{  
"Error": "invalid Collection/Post ID"  
}
```

List all Users (Not Protected)

List all the posts.

GET /users

Request

Path Parameters

None

Request Body

None

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	Lists all users

Response Examples

Success

Status: 200 OK

```
{
  "numberOfUsers": 2,
  "users": [
    {
      "collections": [
        5705808872472576,
        5074526257807360,
        5745753746046976,
        5177006123646976,
        5182803792625664,
        5129025567588352,
        5704134103662592,
        5651673292734464,
        6242045807034368,
        5662792157757440
      ],
      "creationDate": "2023-12-07",
      "email": "test8@test.com",
      "id": 5634161670881280,
      "name": "test8@test.com",
      "posts": [
        5640825748848640,
        5723707007827968,
        5746980898734080,
        5770178285535232,
        5673082664517632,
        5716561121771520,
        5677459739508736,
        5739956077068288,
        5645760532054016,
        5671636300726272,
        5679095853613056,
        5104575795167232,
        5749890067988480,
        5116145900191744,
        5110132711096320,

```

```
        5637377896742912,  
        6312840021409792,  
        5082810578632704  
    ],  
    "userId": "auth0|657170004c1cb0e3e43caaaa"  
  },  
  {  
    "collections": [],  
    "creationDate": "2023-12-08",  
    "email": "test9@test.com",  
    "id": 5644004762845184,  
    "name": "test9@test.com",  
    "posts": [],  
    "userId": "auth0|6572bd869fa97e13efcb5cc9"  
  }  
]  
}
```