

Final Project

CS 493: Cloud Application Development

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API Link: <https://cs493finalproject.wm.r.appspot.com>

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Change log

Version	Change	Date
1.0	Initial version.	April 11 2021
1.1	Edited for Final Project	June 01 2021

Datastore Data Model

The Datastore has users, milestones and children attached to it.

Users has the following headers

Id	Name (string, required)	Picture (string)	User_id (string, required)	Children (list)	Self (string, required)
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The unique identifier for the user is the sub taken from the jwt, put in the user_id header.

Milestones have the following headers

Id	Activity (string, required)	Age (string, required)	Category (string, required)	Children_assigned (list)	Milestone (string, required)	Self (string, required)
----	-----------------------------------	------------------------------	-----------------------------------	-----------------------------	------------------------------------	-------------------------------

Children have the following headers

Id	First_name (string, required)	Gender (string, required)	Birthday (string, required)	User_id (string, required)	Milestones_id_assigned (list)	Self (string, required)
----	-------------------------------------	---------------------------------	-----------------------------------	----------------------------------	----------------------------------	-------------------------------

Requests made relating to children (POST, GET, DELETE) require authentication and authorization. Attach the JWT of the user in the request header to get authorized children.

As can be seen via color coordination, milestone IDs connect with Carriers and Child IDs connect with Children field in milestones. The application strips the 'sub' value from the JWT payload to then identify a user within the entities. The Children entity and the User entity are related in that the children belonging to a user are stored in the Children header, and the user associated with a specific child has it's unique identifier stored under User_id.

Get all users

Allows you to create a new milestone.

POST /users

Request

Path Parameters

None

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

None

Request Body Example

None

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	Returns all users, no authorization needed.

Response Examples

Success

Status: 200 OK
<pre>[{ "picture": "https://s.gravatar.com/avatar/81be9a13946e8b20ffc515c5d352bab1?s=480&r=pg&d=https%3A%2F%2Fcdn.auth0.com%2Favatars%2Fri.png", "self": "http://localhost:8080/callback/5595073005748224", "user_id": "auth0 60a2e4a7cbc3e700700e4f7c", "name": "test@test.com", "checkmarked": [], "children": [] }]</pre>

Create a Milestone

Allows you to create a new milestone.

POST /milestones

Request

Path Parameters

None

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

Name	Type	Description	Required?
activity	String	The activity used to support the milestone listed. Must be unique to this milestone.	Yes
age	String	Age the milestone should be considered at.	Yes
category	String	Milestone category.	Yes
milestone	String	The milestone which the activity supports. There can be duplicate milestones.	Yes

Request Body Example

```
{
  "activity": "Place baby tummy down on a blanket and move the blanket slowly around the room.",
  "age": "0-1 month",
  "category": "Physical",
  "milestone": "Moves head from side to side while lying on stomach"
}
```

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 4 required attributes, the milestone must not be created, and 400 status code must be returned.
Failure	406 Not Acceptable	API only supports JSON request and return objects.

Response Examples

Success

Status: 201 Created

```
{ "id": 1234,  
  "activity": "Example Activity",  
  "age": "2 years",  
  "category": "emotional",  
  "children_assigned": 3,  
  "milestone": "Example milestone",  
  "self": "https://appspot.com/milestones/1234"  
}
```

Failure

Status: 400 Bad Request

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

Failure

Status: 406 Not Acceptable

```
{  
  "Error": "This API only supports JSON request and return objects."  
}
```

View a Milestone

Allows you to get an existing milestone

GET /milestones/:milestone_id

Request

Path Parameters

Name	Type	Description
milestone_id	String	ID of the milestone

Request Body

None

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	404 Not Found	No milestone with this milestone_id exists
Failure	406 Not Acceptable	API only supports JSON request and return objects.

Response Examples

Success

Status: 200 OK <pre>{ "id": 1234, "activity": "Example Activity", "age": "2 years", "category": "emotional", "children_assigned": 3, "milestone": "Example milestone", "self": "https://appspot.com/milestones/1234" }</pre>

Failure

Status: 404 Not Found <pre>{ "Error": "No milestone with this milestone_id exists." }</pre>
--

Failure

Status: 406 Not Acceptable <pre>{ "Error": "This API only supports JSON request and return objects." }</pre>

View all Milestones

List all the milestones.

GET /milestones

Request

Path Parameters

None

Request Body

None

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	406 Not Acceptable	API only supports JSON request and return objects.

Response Examples

Success

Status: 200 OK

```
[
  "next": "https://appspot.com/milestones?offset=2",
  "milestones": [
    { "id": 1234,
      "activity": "Example Activity",
      "age": "2 years",
      "category": "emotional",
      "children_assigned": 3,
      "milestone": "Example milestone",
      "self": "https://appspot.com/milestones/1234"
    },
    { "id": 1234,
      "activity": "Example Activity",
      "age": "2 years",
      "category": "emotional",
      "children_assigned": 3,
      "milestone": "Example milestone",
      "self": "https://appspot.com/milestones/1234"
    },
    { "id": 1234,
      "activity": "Example Activity",
      "age": "2 years",
      "category": "emotional",
```

```
"children_assigned": 3,  
"milestone": "Example milestone",  
"self": "https://appspot.com/milestones/1234"  
},  
{ "id": 1234,  
  "activity": "Example Activity",  
  "age": "2 years",  
  "category": "emotional",  
  "children_assigned": 3,  
  "milestone": "Example milestone",  
  "self": "https://appspot.com/milestones/1234"  
},  
{ "id": 1234,  
  "activity": "Example Activity",  
  "age": "2 years",  
  "category": "emotional",  
  "children_assigned": 3,  
  "milestone": "Example milestone",  
  "self": "https://appspot.com/milestones/1234"  
}]}
```

Failure

Status: 406 Not Acceptable

```
{  
  "Error": "This API only supports JSON request and return objects."  
}
```


Delete a Milestone

Allows you to delete a milestone. Note that if the milestone is currently holding a child, deleting the milestone unchildren any children that were assigned to it.

DELETE /milestones/:milestone_id

Request

Path Parameters

Name	Type	Description
milestone_id	String	ID of the milestone

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 milestone with this milestone_id exists
Failure	406 Not Acceptable	API only supports JSON request and return objects.

Response Examples

Success

Status: 204 No Content

Failure

Status: 404 Not Found <pre>{ "Error": "No milestone with this milestone_id exists." }</pre>
--

Failure

Status: 406 Not Acceptable <pre>{ "Error": "This API only supports JSON request and return objects." }</pre>

Create a Child (protected)

Allows you to create a new child.

POST /children

Request

Path Parameters

None

Request Body

Required

Request Body Format

JSON

Request JSON Attributes

Name	Type	Description	Required?
first_name	String	The first name of the child.	Yes
gender	String	Gender of the child.	Yes
birthday	Date	Birthdate of the child (may be just month and year).	Yes

Request Body Example

```
{
  "first_name": "Katie",
  "gender": "female",
  "birthday": "07/05/2012"
}
```

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	201 Created	
Failure	400 Bad Request	If the request is missing the volume or content fields, the child must not be created, and 400 status code must be returned.
Failure	401 Unauthorized	If the request is missing an authorization header, or the authorization sent is invalid or expired.
Failure	406 Not Acceptable	API only supports JSON request and return objects.

Response Examples

Success

```
Status: 200 OK

{
  "id": "987897",
  "first_name": "Katie",
}
```

```
{
  "gender": "female",
  "birthday": "07/05/2012",
  "user_id": "auth2020",
  "milestones_assigned": [],
  "self": "https:appspot.com/children/987897"
}
```

Failure

Status: 400 Bad Request

```
{
  "Error": "The request object is missing required information for the child."
}
```

Failure

Status: 401 Unauthorized

```
{
  "Error": "Token is expired."
}
```

Failure

Status: 406 Not Acceptable

```
{
  "Error": "This API only supports JSON request and return objects."
}
```

View a Child (protected)

Allows you to get an existing child.

GET /children/:child_id

Request

Path Parameters

Name	Type	Description
child_id	String	ID of the child

Request Body

None

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	401 Unauthorized	If the request is missing an authorization header, or the authorization sent is invalid or expired.
Failure	404 Not Found	No child with this child_id exists
Failure	406 Not Acceptable	API only supports JSON request and return objects.

Response Examples

Success

```
Status: 200 OK

{
  "id": "987897",
  "first_name": "Katie",
  "gender": "female",
  "birthday": "07/05/2012",
  "user_id": "auth2020",
  "milestones_assigned": [],
  "self": "https:appspot.com/children/987897"
}
```

Failure

```
Status: 401 Unauthorized

{
  "Error": "Token is expired."
}
```

Failure

```
Status: 404 Not Found
```

```
{  
  "Error": "No child with this child_id exists."  
}
```

Failure

Status: 406 Not Acceptable

```
{  
  "Error": "This API only supports JSON request and return objects."  
}
```

View all Children (protected)

List all the children.

GET /children

Request

Path Parameters

None

Request Body

None

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	Returns only children which belong to the authorized user. If no authentication is sent, an error is returned.
Failure	401 Unauthorized	If the request is missing an authorization header, or the authorization sent is invalid or expired.
Failure	406 Not Acceptable	API only supports JSON request and return objects.

Response Examples

Success

Status: 200 OK

```
[
  "children": [
    {
      "id": "987897",
      "first_name": "Katie",
      "gender": "female",
      "birthday": "07/05/2012",
      "user_id": "auth2020",
      "milestones_assigned": [],
      "self": "https:appspot.com/children/987897"
    },
    {
      "id": "987897",
      "first_name": "Richard",
      "gender": "male",
      "birthday": "07/11/2013",
      "user_id": "auth202324",
      "milestones_assigned": [
        "id": "50561",
        "self": "https:appspot.com/milestones/1560"
      ]
    }
  ]
}
```

```
],  
  "self": "https:appspot.com/children/987897"  
}
```

Failure

Status: 401 Unauthorized

```
{  
  "Error": "Token is expired."  
}
```

Failure

Status: 406 Not Acceptable

```
{  
  "Error": "This API only supports JSON request and return objects."  
}
```

Delete a Child (protected)

Allows you to delete a child. Deleting a child should update any milestone children_assigned count.

DELETE /children/:child_id

Request

Path Parameters

Name	Type	Description
child_id	String	ID of the child

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	401 Unauthorized	If the request is missing an authorization header, or the authorization sent is invalid or expired.
Failure	404 Not Found	No child with this child_id exists
Failure	406 Not Acceptable	API only supports JSON request and return objects.

Response Examples

Success

Status: 204 No Content

Failure

Status: 401 Unauthorized
<pre>{ "Error": "Token is expired." }</pre>

Failure

Status: 404 Not Found
<pre>{ "Error": "No child with this child_id exists." }</pre>

Failure

Status: 406 Not Acceptable
<pre>{ "Error": "This API only supports JSON request and return objects." }</pre>

Assign a milestone to a child (protected)

A child is added to a milestone to be carried.

PUT /children/<child_id>/milestones/<milestone_id>

Request

Path Parameters

Name	Type	Description
child_id	String	ID of the child
milestone_id	String	ID of the milestone

Request Body

None

Response

No body

Response Body Format

Success: No body

Failure: JSON

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	Succeeds only if a milestone exists with this milestone_id, a child exists with this child_id and the child carrier field is empty.
Failure	401 Unauthorized	If the request is missing an authorization header, or the authorization sent is invalid or expired.
Failure	403 Forbidden	A child already has this milestone assigned.
Failure	404 Not Found	No milestone with this milestone_id exists, and/or no child with this child_id exists.
Failure	406 Not Acceptable	API only supports JSON request and return objects.

Response Examples

Success

Status: 204 No Content

Failure

Status: 401 Unauthorized

```
{
  "Error": "Token is expired."
}
```

Failure

Status: 403 Forbidden

```
{
  "Error": "A child already has this milestone assigned."
}
```

Status: 404 Not Found

```
{  
  "Error": "The specified milestone and/or child does not exist."  
}
```

Failure

Status: 406 Not Acceptable

```
{  
  "Error": "This API only supports JSON request and return objects."  
}
```

Child is removed from a milestone (protected)

Child has been unpacked from a milestone. The child has no carrier.

```
DELETE /milestones/{milestone_id}/children/{child_id}
```

Request

Path Parameters

Name	Type	Description
child_id	String	ID of the child
milestone_id	String	ID of the milestone

Request Body

None

Response

No body

Response Body Format

Success: No body

Failure: JSON

Response Statuses

Outcome	Status Code	Notes
Success	204 No Content	Succeeds only if a milestone exists with this milestone_id, a child exists with this child_id and this child is carried by this milestone.
Failure	401 Unauthorized	If the request is missing an authorization header, or the authorization sent is invalid or expired.
Failure	404 Not Found	No milestone with this milestone_id is assigned to the child with this child_id.
Failure	406 Not Acceptable	API only supports JSON request and return objects.

Response Examples

Success

```
Status: 204 No Content
```

Failure

```
Status: 401 Unauthorized
```

```
{
  "Error": "Token is expired."
}
```

Failure

```
Status: 404 Not Found
```

```
{
  "Error": "No milestone with this milestone_id is assigned to the child with this child_id."
}
```

Failure

Status: 406 Not Acceptable

```
{  
  "Error": "This API only supports JSON request and return objects."  
}
```

View all Milestones assigned to a Child (protected)

Allows you to get a list of children on a specific milestone.

GET /children/:child_id/milestones

Request

Path Parameters

Name	Type	Description
child_id	String	ID of the child

Request Body

None

Response

Response Body Format

JSON

Response Statuses

Outcome	Status Code	Notes
Success	200 OK	
Failure	401 Unauthorized	If the request is missing an authorization header, or the authorization sent is invalid or expired.
Failure	404 Not Found	No child with this child_id exists
Failure	406 Not Acceptable	API only supports JSON request and return objects.

Response Examples

Success

Status: 200 OK

```
[{"id": 1234,
  "activity": "Example Activity",
  "age": "2 years",
  "category": "emotional",
  "children_assigned": 3,
  "milestone": "Example milestone",
  "self": "https://appspot.com/milestones/1234"},
{"id": 1234,
  "activity": "Example Activity",
  "age": "2 years",
  "category": "emotional",
  "children_assigned": 3,
  "milestone": "Example milestone",
  "self": "https://appspot.com/milestones/1234"},
{"id": 1234,
  "activity": "Example Activity",
  "age": "2 years",
```

```
"category": "emotional",
"children_assigned": 3,
"milestone": "Example milestone",
"self": "https://appspot.com/milestones/1234"
},
{ "id": 1234,
  "activity": "Example Activity",
  "age": "2 years",
  "category": "emotional",
  "children_assigned": 3,
  "milestone": "Example milestone",
  "self": "https://appspot.com/milestones/1234"
},
{ "id": 1234,
  "activity": "Example Activity",
  "age": "2 years",
  "category": "emotional",
  "children_assigned": 3,
  "milestone": "Example milestone",
  "self": "https://appspot.com/milestones/1234"
}]
```

Failure

Status: 404 Not Found

```
{
  "Error": "No child with this child_id exists."
}
```

Failure

Status: 406 Not Acceptable

```
{
  "Error": "This API only supports JSON request and return objects."
}
```