Final Project

CS 493: Cloud Application Development

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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) |

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  [      {          "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": []      }  ] |

# 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  { "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 milestone with this milestone\_id exists."  } |

#### Failure

|  |
| --- |
| Status: 406 Not Acceptable  {  "Error": "This API only supports JSON request and return objects."  } |

# 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  {  "Error": "No milestone with this milestone\_id exists."  } |

#### Failure

|  |
| --- |
| Status: 406 Not Acceptable  {  "Error": "This API only supports JSON request and return objects."  } |

# 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  {  "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."} |

# 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 exits. |
| 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."  } |