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Getting Started With SwaggerHub

This tutorial provides a brief overview of SwaggerHub, and walks you through creating and publishing a REST API specificati

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Requirements

To complete this tutorial, you need:

- A SwaggerHub account (sign up (/signup), if you do not have it).
- Basic knowledge of REST APIs.

What is SwaggerHub?

SwaggerHub is an online platform where you can design your REST APIs – be it public APIs, internal private APIs or microse principle behind SwaggerHub is **Design First, Code Later**. That is, you start by laying out your API, its resources, operations a once the design is complete you implement the business logic.

API definitions are written in the OpenAPI format (formerly known as Swagger). They are saved in the SwaggerHub cloud and synchronized with external systems like GitHub or Amazon API Gateway. You can also collaborate with your team on Swagg multiple versions of APIs as it evolves.

What is OpenAPI?

OpenAPI Specification (https://github.com/OAI/OpenAPI-Specification) (formerly known as Swagger Specification) is an API for REST APIs. It is equally suitable both for designing new APIs and for documenting your existing APIs. OpenAPI lets you d API, including the available endpoints, operations, request and response formats, supported authentication methods, suppor information.

OpenAPI Specification has undergone several versions since the original release. SwaggerHub supports OpenAPI 3.0.0 (the l OpenAPI 2.0 (also known as Swagger 2.0).

OpenAPI definitions can be written in YAML or JSON. SwaggerHub Editor uses YAML, but you can import and download both

A sample OpenAPI 3.0 specification (in the YAML format) looks like this:

```
openapi: 3.0.0
info:
  title: Sample API
  version: '1.0'
servers:
  - url: https://api.example.com/v1
paths:
  /hello:
    get:
      responses:
        '200':
          description: OK
          content:
            application/json:
              schema:
                type: string
```

This simple format is human-readable, machine-readable and self-explanatory. This is one of the reasons why OpenAPI is so developers.

What is Swagger?

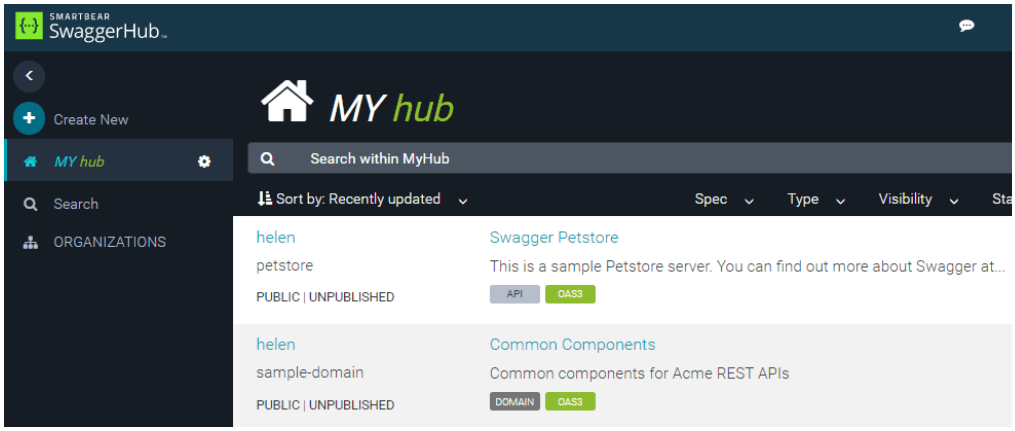
The great thing about OpenAPI Specification is that there are a lot of API development tools that support it. An example is Sw set of open-source tools for designing, building, documenting and consuming REST APIs. The major Swagger tools include:

- Swagger Editor – a browser-based editor where you can write OpenAPI definitions.
- Swagger UI – renders OpenAPI definitions as interactive API documentation, like the one at http://petstore.swagger.io (http://petstore.swagger.io).
- Swagger Codegen – generates server code and client libraries based on an OpenAPI definition.

SwaggerHub combines these tools for a seamless experience, and adds hosted storage, access control and collaboration fe

SwaggerHub UI overview

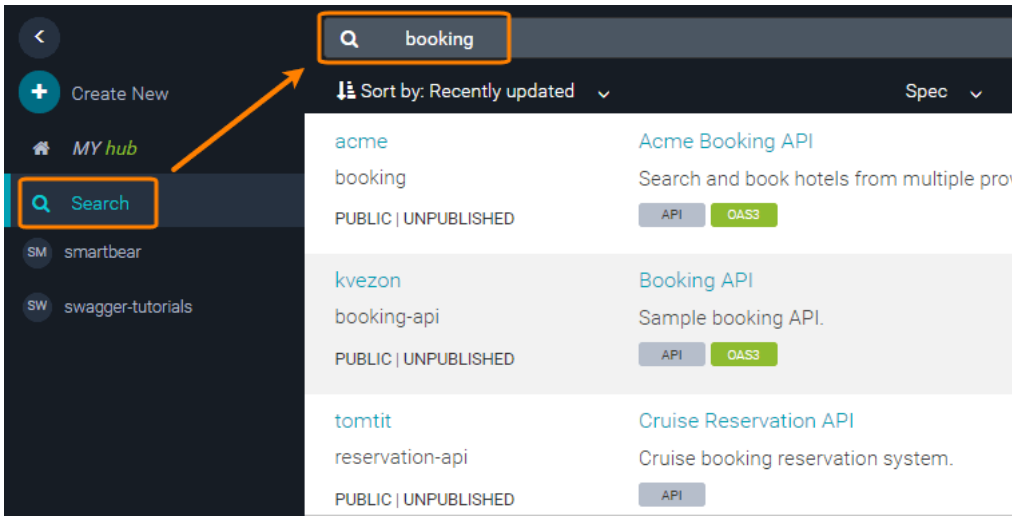
When you are logged in to SwaggerHub, the *MY hub* page lists all the APIs you have access to. These are both the APIs yo APIs you were invited to collaborate on. If you are new to SwaggerHub and have no APIs yet, the list will be empty, but it will c start creating APIs.



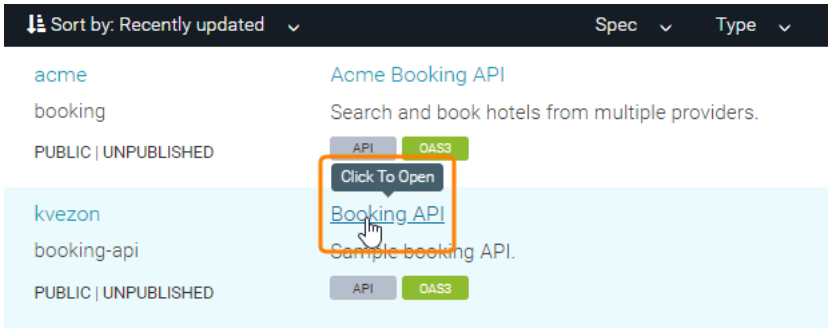
(/)

SIGN UP | LOG IN

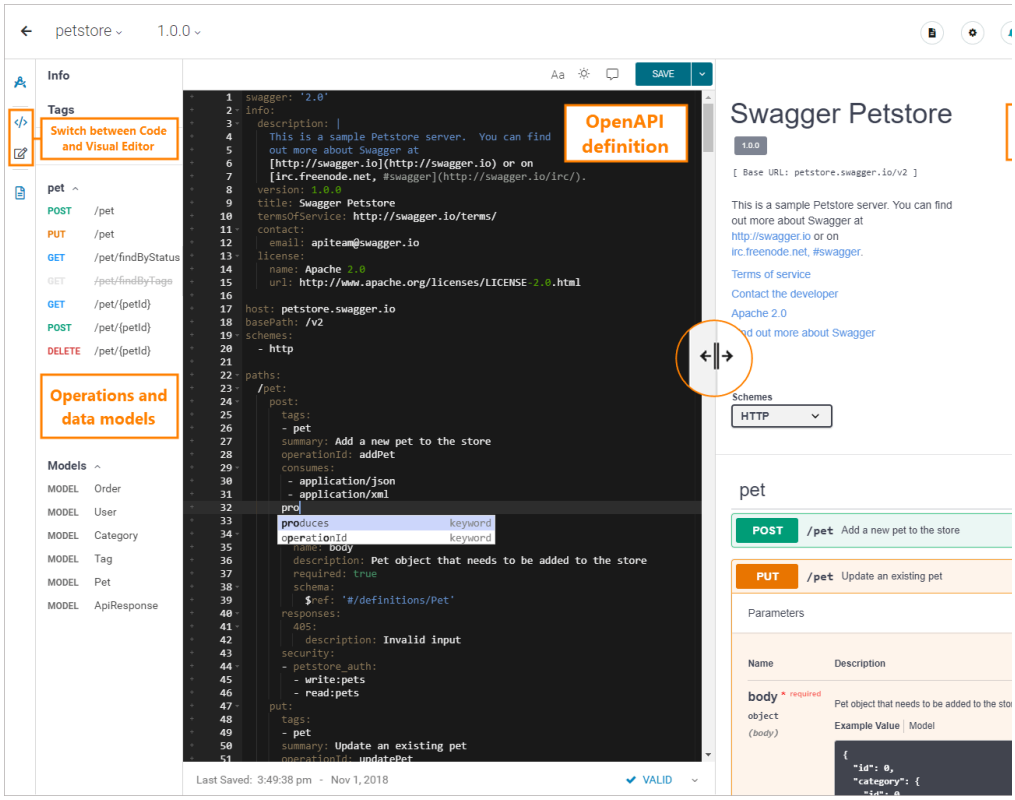
To search for existing APIs on SwaggerHub, use the search page (../ui/searching) that you can access by clicking in the si
This way you can find some great public APIs developed by other SwaggerHub users. See Searching SwaggerHub (../ui/sear
search syntax.



To view a specific API, click it in the list.



An API page on SwaggerHub is a split view that shows the YAML code of your OpenAPI definition and beautiful reference-sty
documentation generated from it. The API documentation allows the users to test API calls directly in the browser. The navig
left shows a list of operations and models defined in your API and lets you jump to the corresponding place in the YAML cod
panels by dragging the splitter between them.

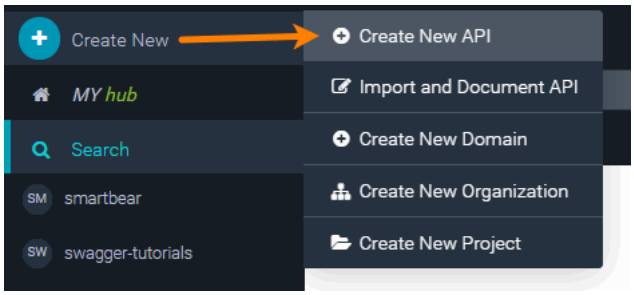


Creating a sample API with SwaggerHub

The best way to understand SwaggerHub is to create a sample API, so let's do that. Do not worry about configuring a server. will focus on designing an API.

Step 1. Create an API

In the sidebar on the left, click + and select **Create New API**.

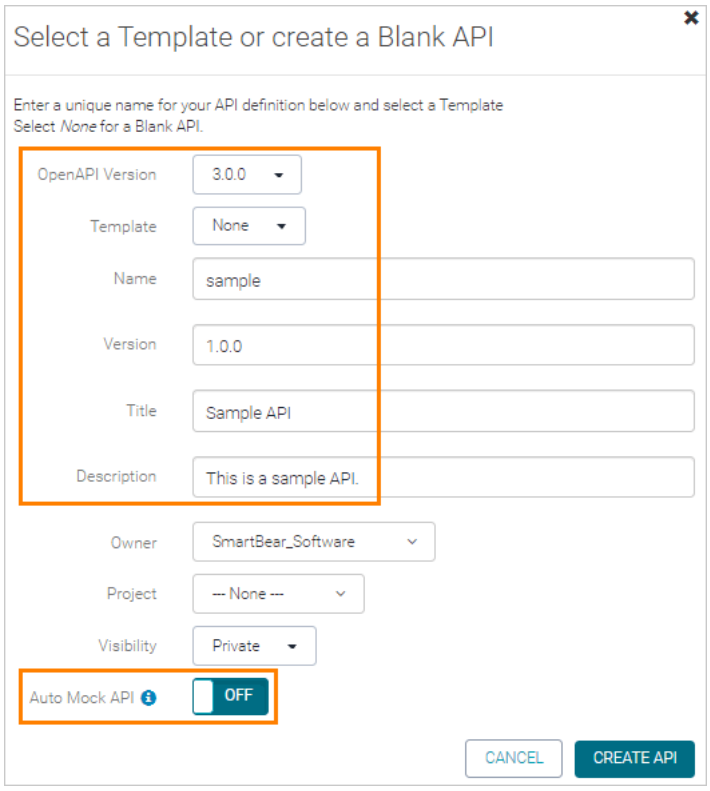


Fill in the API information as shown in the image below.

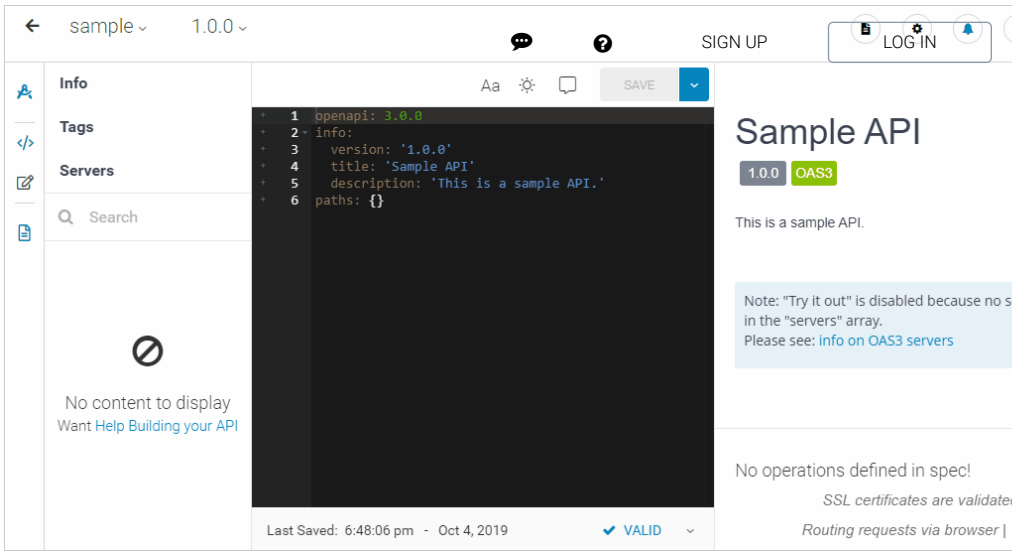
The OpenAPI version specifies the spec format, OpenAPI 3.0.0 or 2.0. Choose *3.0.0* (the latest version).

There are predefined templates, such as *Petstore*, but now, let's start with a blank API (no template).

Enter *sample* as the API name, *1.0.0* as the version, *Sample API* as the title and an arbitrary description.



Click **Create API**. The SwaggerHub editor will open, pre-populated with the API metadata you have entered:



Each API definition starts with the OpenAPI version, in our example it is `openapi: 3.0.0`.

```
openapi: 3.0.0
```

The next section, `info`, contains the metadata about the API – the API title, description, version and so on. The `info` secti contact information, license and other details.

```
info:
  title: Sample API
  version: 1.0.0
  description: This is a sample API.
```

The `paths` section is where you define the API operations. We will populate it later.

```
paths: {}
```

Step 2. Add server info

Next, we need to define the API server address and the base URL for API calls. Suppose the API will be located at `https://api.example.com/v1`. This can be described as:

```
servers:
  - url: https://api.example.com/v1
```

Add these lines between `info` and `paths`, like this:

```
1  openapi: 3.0.0
2  info:
3    version: '1.0.0'
4    title: 'Sample API'
5    description: 'This is a sample API.'
6
7  servers:
8    - url: https://api.example.com/v1
9
10 paths: {}
```

Step 3. Define a GET operation

Suppose our API is intended to manage a list of users. Each user has an ID, and the API needs an operation to return the use would be a GET request like this one:

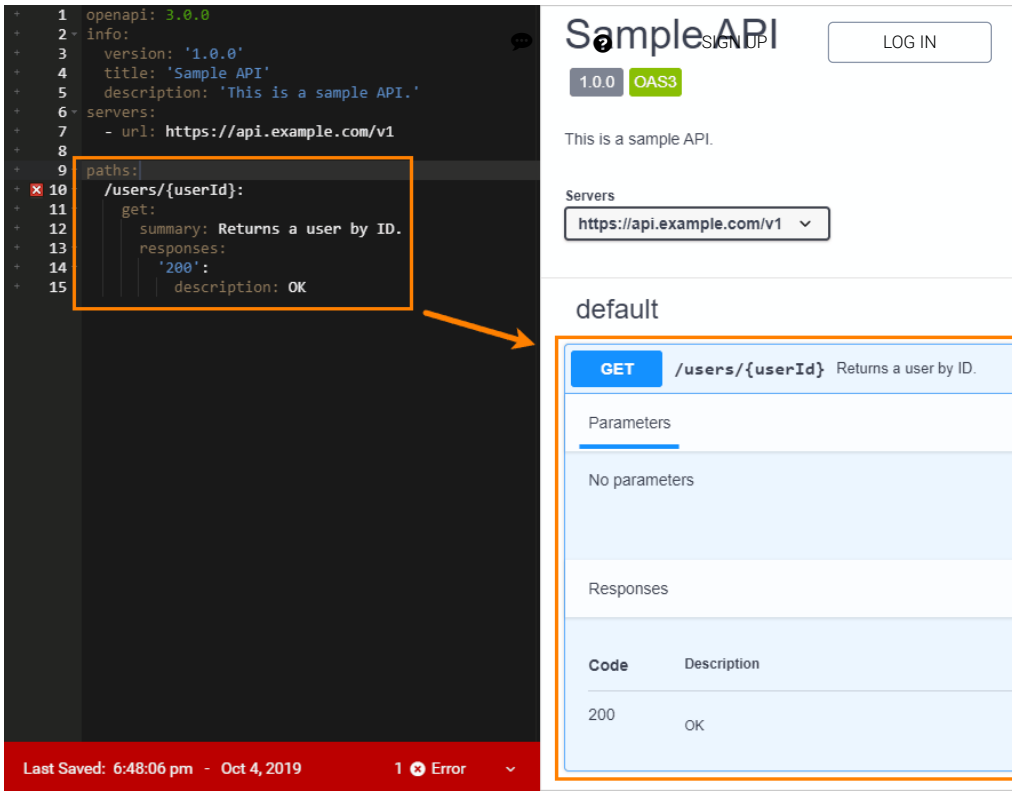
```
GET /users/3
GET /users/15
```

Using Swagger, we can describe this GET operation as follows. The `{userId}` part in `/users/{userId}` indicates the patl a URL component that can vary.

```
paths:
  /users/{userId}:
    get:
      summary: Returns a user by ID
      responses:
        '200':
          description: OK
```

Paste the code above to the editor, replacing the `paths: {}` line. Your spec should look like this:

(/)



Note that as you edit the spec, SwaggerHub automatically updates the preview on the right.

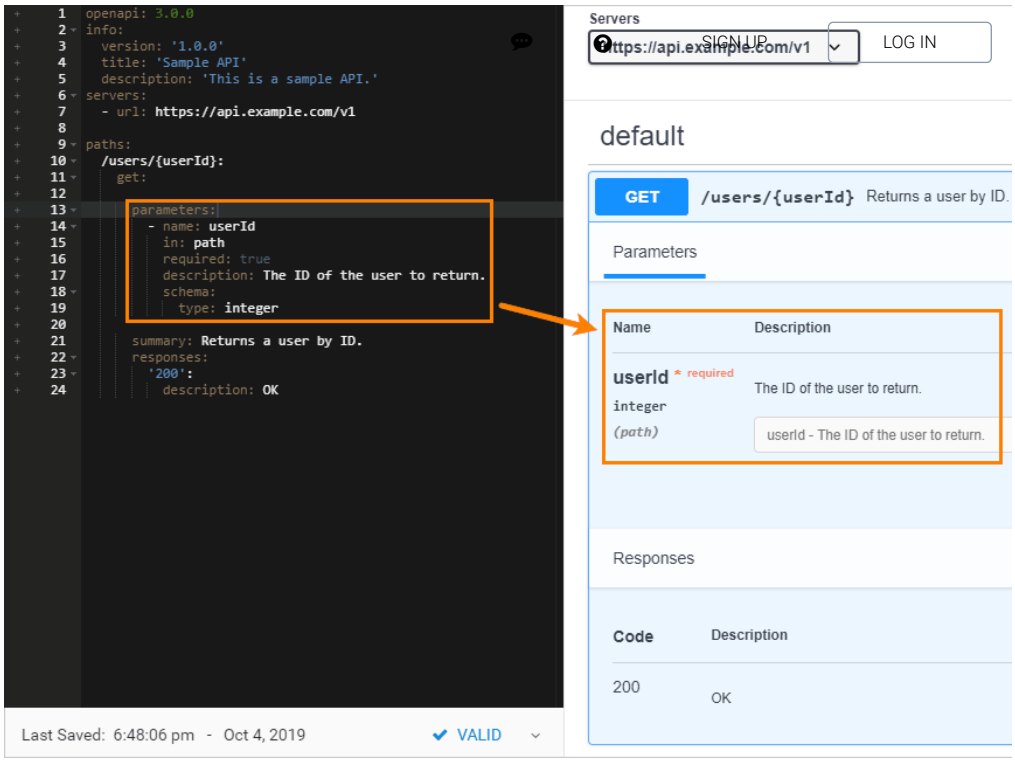
Step 4. Define parameters

Our API operation `GET /users/{userId}` has the `userId` parameter that specifies the ID of the user to return. To define t your spec, add the `parameter` section as follows:

```
paths:
  /users/{userId}:
    get:
      summary: Returns a user by ID
      parameters:
        - name: userId
          in: path
          required: true
          description: The ID of the user to return
          schema:
            type: integer
      responses:
        '200':
          description: OK
```

This code specifies the parameter `name` (the same as the one used in the URL path), `type`, `description` and whether it i `path` means the parameter is passed as part of the URL path (`GET /users/15`), as opposed to, say, query string paramete `id=15`).

Note that after you add the `parameters` section, the preview is updated to reflect the newly added parameter information:



Step 5. Define responses

Next, we need to describe possible `responses` for the API call. A response is defined by an HTTP status code, description a `schema` (a data model for the response body, if any).

Suppose a successful call to `GET /users/{userId}` returns HTTP status 200 and this JSON object:

```
{
  "id": 42,
  "name": "Arthur Dent"
}
```

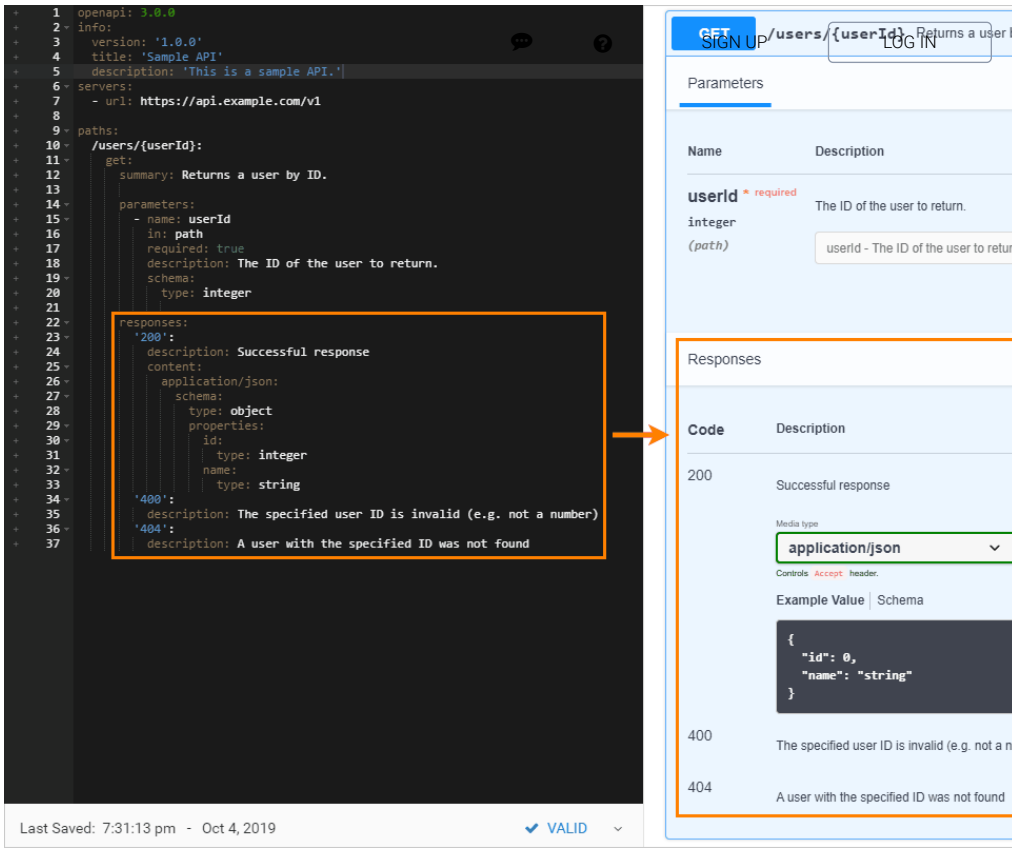
To describe this response, add the `content` section under the 200 response as follows. The `content` section specifies tha contains JSON data (`application/json`). Note the `schema` element – it describes the structure of the response body, suc of the returned JSON object.

```
paths:
  /users/{userId}:
    get:
      ...
      responses:
        '200':
          description: Successful response
          content:
            application/json:
              schema:
                type: object
                properties:
                  id:
                    type: integer
                  name:
                    type: string
```

You can also describe various error codes that can be returned by an API call:

```
      responses:
        ...
        '400':
          description: The specified user ID is invalid (e.g. not a number)
        '404':
          description: A user with the specified ID was not found
```

The complete spec should now look like this:



Step 6. Publish the API

Our API is finished, so let's publish it. Publishing is a way to tell people that the API is in a stable state, it is going to work as d to be consumed by applications. Do not worry about configuring a server – this tutorial is about designing the API specificati implementation.

To publish the API, click the drop-down arrow next to your API version, and then click .

Congratulations! You have published your first API on SwaggerHub! You can copy its address from the browser's address ba others. Since this is a public API, anyone who has a link can view it, and it will show up in the search results on SwaggerHub. API private (../apis/public-and-private-apis) if your SwaggerHub plan allows this.

Note that published APIs become read-only, and can only be edited if the API is unpublished again. It is OK to unpublish an A need to improve the `description` text or fix typos. But for breaking changes like new operations or parameters, you should instead by using the **Add Version** command in the SwaggerHub editor. SwaggerHub lets you maintain multiple versions of a so you can work on the next API version while keeping the published version (the "production" version) intact.

Other things to do in the SwaggerHub editor

SwaggerHub editor is not just an editor, it provides tools for managing your API specification and integrating it into your work quick look at other available commands:

- The **Settings** menu lets you rename the API, fork it, or transfer it to another owner.
- The **Export** menu lets you generate server (../apis/generating-code/server-stub) and client (../apis/generating-code/cli your API to help you get started with implementation. Here you can also download your OpenAPI definition as YAML o

What's next

Learn OpenAPI 3.0 Syntax

- Tutorial (openapi-3-tutorial)
- Syntax Guide (https://swagger.io/docs/specification/)
- Full OpenAPI 3.0 Specification (https://swagger.io/specification/)

Learn OpenAPI 2.0 (Swagger 2.0) Syntax

- Tutorial (writing-swagger-definitions)
- Syntax Guide (https://swagger.io/docs/specification/2-0/basic-structure/)
- Full OpenAPI 2.0 Specification (https://github.com/OAI/OpenAPI-Specification/blob/master/versions/2.0.md) (Swagg

Proceed With API Design and Implementation

- Invite collaborators (collaboration)
- Sync your API definitions with GitHub (../integrations/github-sync), GitLab (../integrations/gitlab-sync), Bitbucket (../int sync), or Azure DevOps Services (../integrations/azure-devops-services)
- Mock your API (../integrations/api-auto-mocking) (if you do not have a live API server yet)
- Generate server stub (../apis/generating-code/server-stub) and client SDK (../apis/generating-code/client-sdk)

See Also

SwaggerHub Tutorials (index)

SwaggerHub UI Overview (../ui/overview)