Project Document

Project Title:

QuickSprite REST API

Project Defination:

QuickSprite REST API is a spritesheet management service which helps 2d game developers and 2d game artists in managing spritesheets of their projects. They can upload their spritesheet on the server for later use. These spritesheets are stored under a project, so spritesheets belonging to one project can be grouped together and be seperated from others. In addition to this QuickSprite also calculates and stores the Quads of a spritesheet based on the sprite width and height provided with the spritesheet, which also can be accessed with the spritesheet for later use (i.e. to create animations, to generate a map).

Glossary:

1) **Spritesheet:** A single image file containing multiple sprites or images used in 2D game development.
2) **Quads:** Rectangular regions defined within a spritesheet, often used for rendering individual sprites within a game engine.
3) **Sprite Width and Height**: Dimensions provided to QuickSprite to define the size of individual sprites within a spritesheet.
4) **Animation**: A sequence of images displayed rapidly to create the illusion of motion, often created using sprites from spritesheets.
5) **Map Generation:** The process of creating game maps or levels using sprites from spritesheets, facilitated by QuickSprite's storage of Quads.
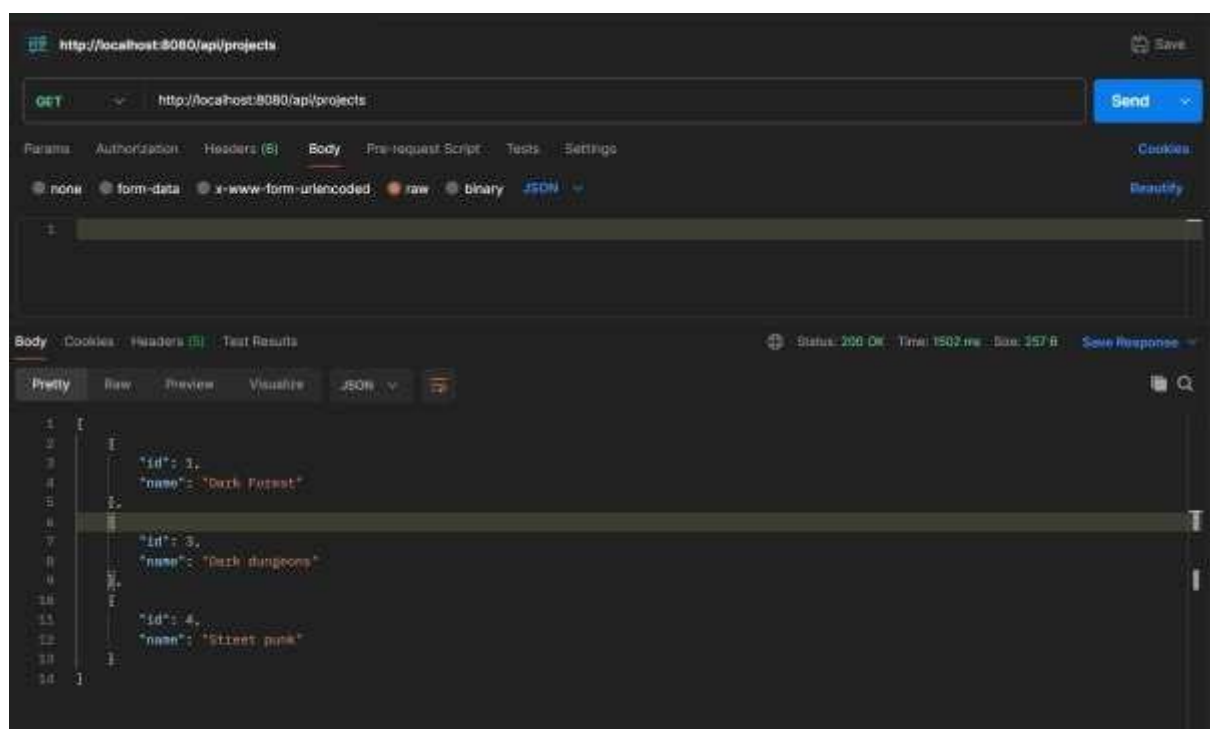
REST API endpoints:

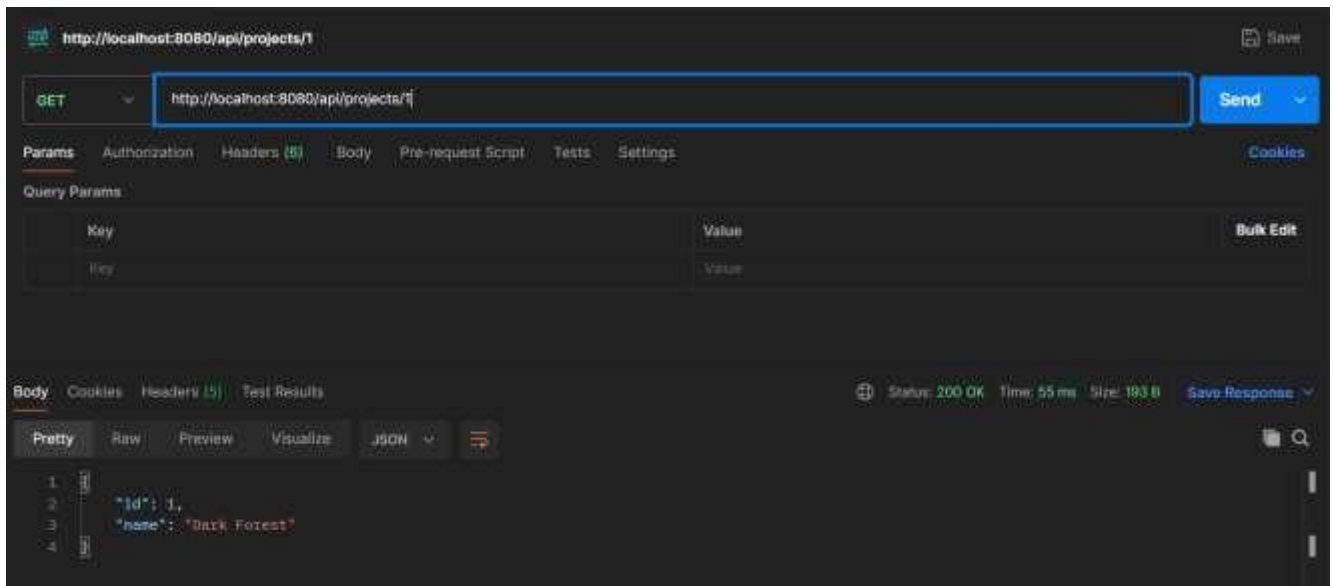| Method	Url	Description
GET	api/projects	Gives list of all projects
GET	api/projects/{pID}	Gives the project with id=pID
GET	api/projects/{pID}/spritesheets	Gives list of all spritesheets belonging to project with id=pID
GET	api/projects/{pID}/spritesheets/{sID}	Gives the spritesheet with id=sID
POST	api/projects	Takes project data in json and create a new project
POST	api/projects/{pID}/spritesheets	Takes spritesheet data in json and create a new spritesheet under project with id=pID
PUT	api/projects/{pID}	Takes project data in json and updates the project with id=pID
PUT	api/projects/{pID}/spritesheets/{sID}	Takes spritesheet data in json and updates the spritesheet with id=sID
DELETE	api/projects/{pID}	Deletes the project with id=pID
DELETE	api/projects/{pID}/spritesheets/{sID}	Deletes the spritesheet with id=sID

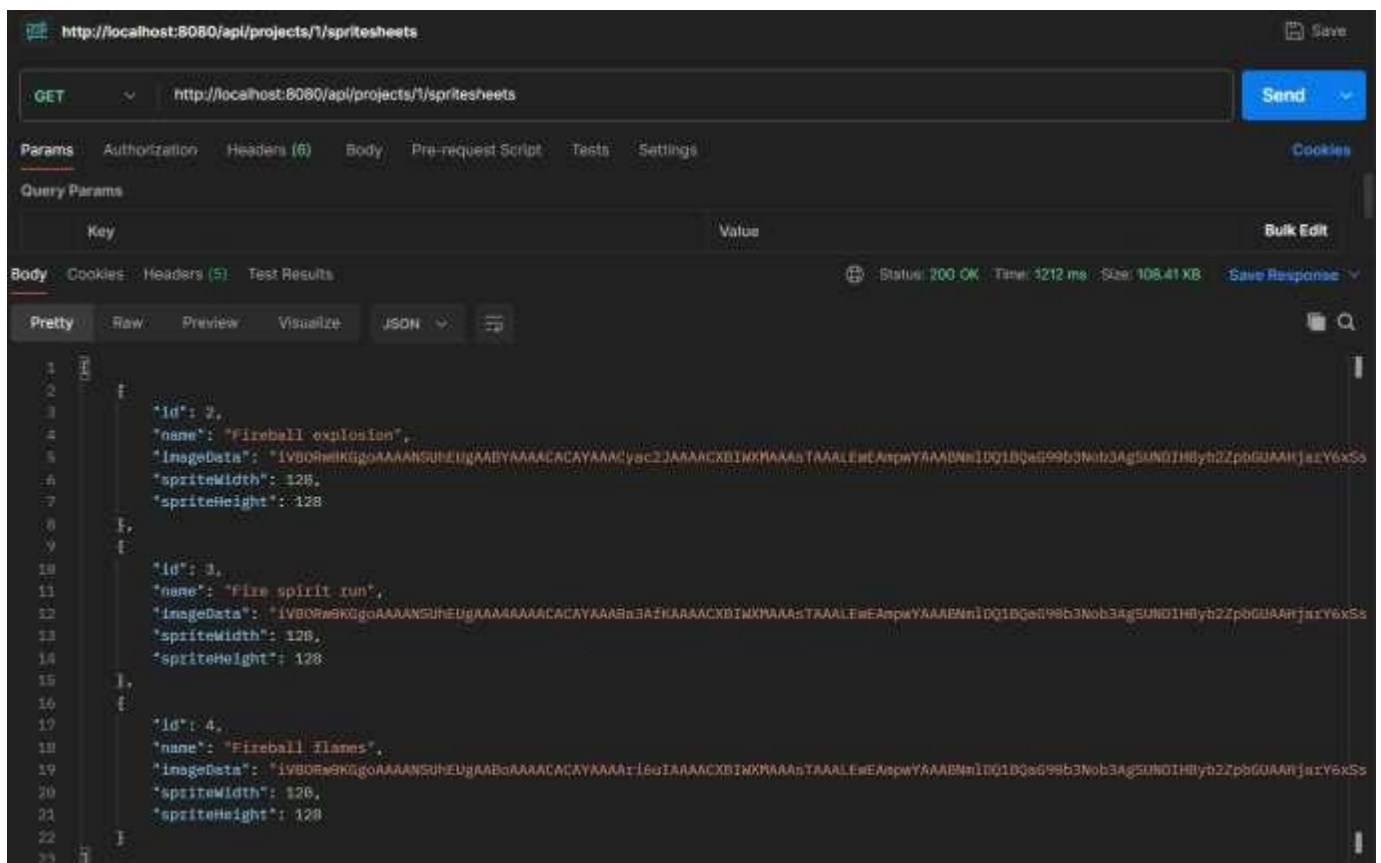## Screenshorts of API's demo with Postman:
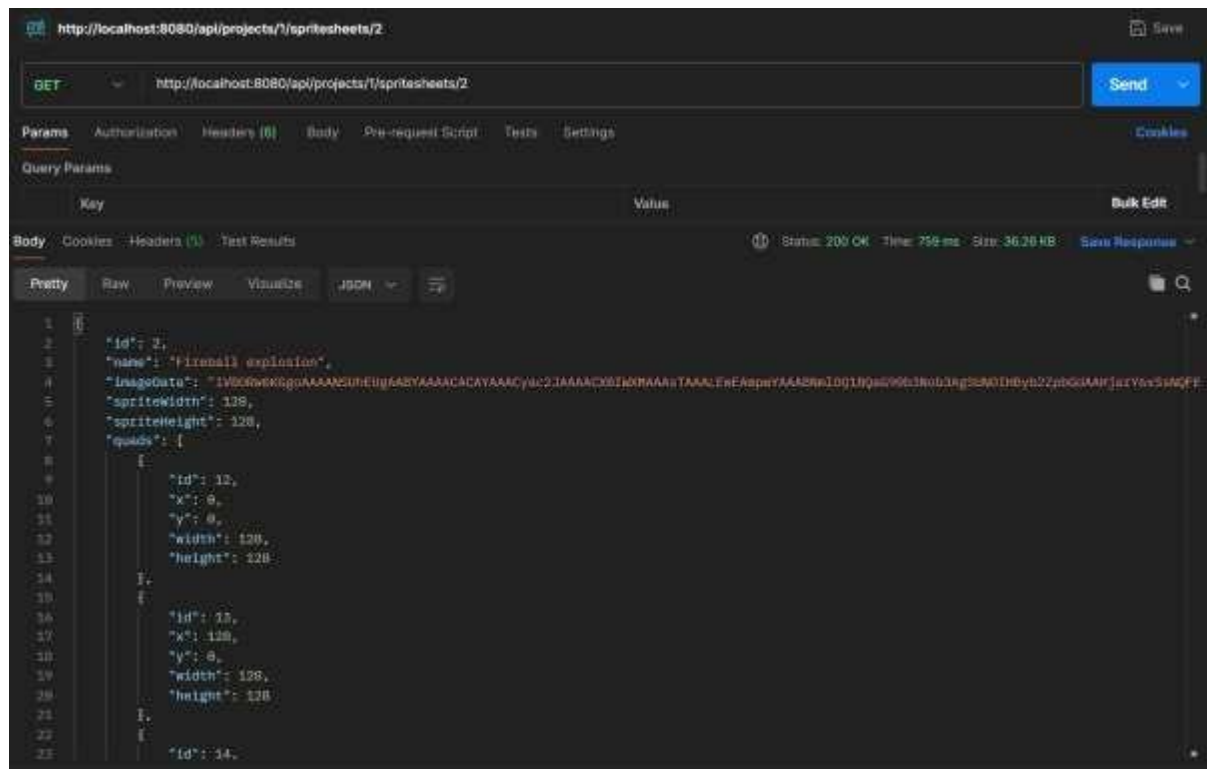
1) GET

   api/projects

2) GET
    api/projects/1

Request: `http://localhost:8080/api/projects/1`

Response (Status: 200 OK, Time: 55 ms, Size: 193 B):

```json
{
    "id": 1,
    "name": "Dark Forest"
}
```

3) GET
    api/projects/1/spritesheets

Request: `http://localhost:8080/api/projects/1/spritesheets`

Response (Status: 200 OK, Time: 1212 ms, Size: 108.41 KB):

```json
[
    {
        "id": 2,
        "name": "Fireball explosion",
        "imageData": "iVBORw0KGgoAAAANSUhEUgAABYAAAACAYAAACyac2JAAAACXBIWXMAAAsTAAALEwEAmpwYAAABNmlDQ1BQaG99b3Nob3AgSUNDIHByb2ZpbGUAAHjaxY6xSs
        "spriteWidth": 128,
        "spriteHeight": 128
    },
    {
        "id": 3,
        "name": "Fire spirit run",
        "imageData": "iVBORw0KGgoAAAANSUhEUgAAA4AAAACACAYAAABn3AfKAAAACXBIWXMAAAsTAAALEwEAmpwYAAABNmlDQ1BQaG99b3Nob3AgSUNDIHByb2ZpbGUAAHjaxY6xSs
        "spriteWidth": 128,
        "spriteHeight": 128
    },
    {
        "id": 4,
        "name": "Fireball flames",
        "imageData": "iVBORw0KGgoAAAANSUhEUgAABoAAAACACAYAAAri6uIAAAACXBIWXMAAAsTAAALEwEAmpwYAAABNmlDQ1BQaG99b3Nob3AgSUNDIHByb2ZpbGUAAHjaxY6xSs
        "spriteWidth": 128,
        "spriteHeight": 128
    }
]
```
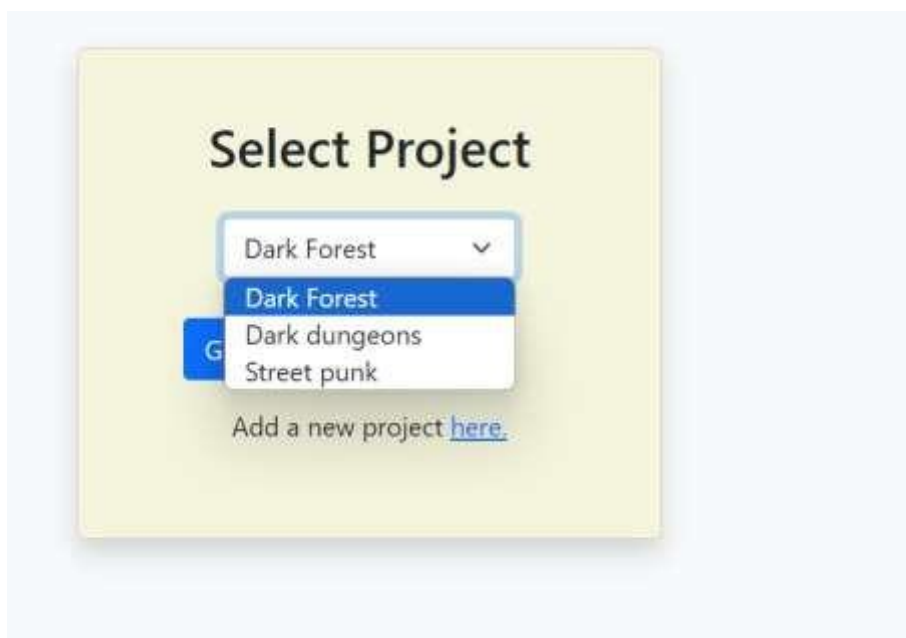
4) GET
api/projects/1/spritesheets/1

Screenshorts of API being used in a project:

1) Project selection

Endpoint being used:

GET, api/projects

2) List of all spritesheet within a project

Endpoints being used:
GET, api/projects
GET, api/projects/{pID}/spritesheets

3) Create a new Project

Endpoint being used:

POST,
api/projects

4) Create a new spritesheet

Add new Spritesheet

Name

Fireball charge

Spritesheet

Choose File | CE.png

Sprite Width

128

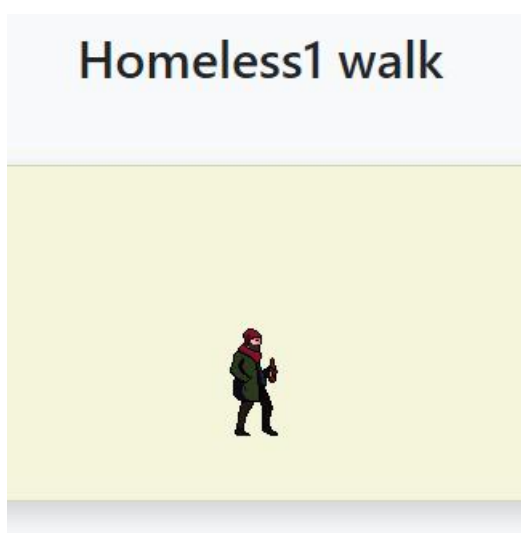Sprite Height

128

Project

Street punk

Add

Endpoint being used:

*POST,
api/projects/{pID}/spritesheets*

5) Animating sprite through stored Quads

[Note: This is a example of animation, but its not visible in a photo**]**

Homeless1 walk

Endpoint being used:

*GET,
api/projects/{pID}/spritesheets/{sID}*