

Firefly

Deploying functions made easy!

The problem

How to expose a function as an API for others to use?

Why?

- To use it in a different environment
- Loose coupling

Use cases

- Deploy a machine learning model
- preprocess an image
- live price check

Challenges

- Requires writing a web application
- What about authentication?
- How to do data validation?
- How I need write a client library too?

Welcome to Firefly

Deploying functions made easy!

Code

Write your function:

```
# sq.py  
def square(n):  
    return n*n
```

Run

Start web service:

```
$ firefly sq.square
```

```
[INFO] Starting gunicorn 19.7.1
```

```
[INFO] Listening at: http://127.0.0.1:8000
```

```
...
```


Use

And use it with a client.

```
>>> from firefly.client import Client  
>>> client = Client("http://127.0.0.1:8000")  
>>> client.square(n=4)
```

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Behind the scenes, it is a RESTful API.

```
$ curl -d '{"n": 4}' http://127.0.0.1:8000/square  
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```

And supports any JSON-friendly datatype.

More practical example

Deploying a machine learning model.

```
# model.py
```

```
import pickle
```

```
model = pickle.load('model.pkl')
```

```
def predict(features):
```

```
    result = model.predict(features)
```

```
    return int(result[0])
```

Run the server using:

```
$ firefly model.predict
```

```
...
```

And use it in the client:

```
>>> remote_model = Client("http://localhost:8080/")
```

```
>>> remote_model.predict(features=[5.9, 3, 5.1, 1.8]))
```

```
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```

Authentication

Firefly has built-in support for authentication.

```
$ firefly --token abcd1234 sq.square
```

...

The client must pass the same token to authenticate it.

```
>>> client = Client("http://127.0.0.1:8000", auth_token="abcd1234")  
>>> client.square(n=4)
```

Upcoming Features...

- supporting other input and output content-types in addition to json. (for example, a function to resize an image)
- validation using type annotations
- caching support

It's open source!

<https://github.com/rorodata/firefly>

To install:

```
pip install firefly-python
```

Resources

- <https://firefly-python.readthedocs.io/>
- <https://github.com/rorodata/firefly>