Testing  
Here I will demonstrate that both the Web API and Discord+Twitch Bot function in their desired manner.  
Also that when presented with malicious or malformed data, no fault or breach of security occurs.

# Web API

To test functionality I will use the **cURL** command line utility. Which allows for you to make web requests easily from the command line.  
A typical request looks like this curl -X GET 'https://owlcoin.co.uk/webapi/Viewer' -H 'ID: 1'  
the –X indicates the request method (GET or POST)  
the ‘https://….’ Is the url to poll  
-H ‘ID: 1’ adds a header with the Key as ID and value of 1

For each key type of request, I will chose a suitable example and will demonstrate the following:

1. Will respond correctly when provided with fully correct data.
2. Will respond with suitable errors when provided with
   1. Non-existent data, like an ID that doesn’t match anything
   2. Malicious and invalid data
   3. Lack of authorisation
3. How data flows through the Web API by using Visual Studios built in debbuger

## Fetching Objects

{

"Data": {

"Balance": 300,

"WatchTime": 0,

"TwitchID": "179513695",

"DiscordID": "",

"Currency": {CURRENCY OBJECT}

},

"Code": 200,

"Message": "The requested task was performed successfully"

}

The command curl -X GET 'https://owlcoin.co.uk/webapi/viewer' -H 'ID: 1', will fetch the **Viewer** object with **ID** of 1  
As you can see (far right), when provided with a valid request, we receive back the data that corresponds to the entry in the database. In this case we receive the Balance, watchtime, etc. Along with the **Currency** object; which contains details about the **Currency** this **Viewer** is part of.

{  
 "Data": null,  
 "Code": 400,  
 "Message": "Bad Request, ID does not match an existing object"  
}

When an **ID** is provided that doesn’t correspond to an object we receive a response (close right) which contains an error indicating that the error is based on the **Requestors** data. Ie: Code 400 along with a message describing the issue encountered.

When the **ID** contains a non-numeric character, we receive the following (close left). Indicating that the ID value is abnormal.

{

"Data": null,

"Code": 400,

"Message": "Bad Request, No operable Headers provided"

}

{  
 "Data": null,  
 "Code": 400,  
 "Message": "Bad Request, Malformed ID"  
}

When the **ID** header is missing completely absent. We are informed (close right) that we don’t have enough **Headers** to perform any action. This will occur anywhere when too few **Headers** are provided.

{

"Data": [

{

"Balance": 300,

"WatchTime": 0,

"TwitchID": "179513695",

"DiscordID": "",

"Currency": {

CURRENCY OBJECT

},

"LiveNotifcations": false,

"DontReward": false,

"ID": 1

},

{

"Balance": 900,

"WatchTime": 0,

"TwitchID": "179513695",

"DiscordID": "",

"Currency": {

Different CURRENCY OBJECT

},

"LiveNotifcations": false,

"DontReward": false,

"ID": 1

}

],

"Code": 200,

"Message": "The requested task was performed successfully"

}

The **ID** header can be swapped out for **DiscordID** and/or **TwitchID**, hence will return all **Viewer**’s with the corresponding **ID**’s. Ie: curl -X GET 'https://owlcoin.co.uk/webapi/viewer' -H 'TwitchID: 179513695'

A further **CurrencyID** header can be included, to restrict the **Viewer**’s to be from the specific **Currency**.

If only the **CurrencyID** is provided, we will be returned a list of all **Viewer**’s that are part of said currency.  
With only the **CurrencyID** a **Order** header can be provided, which can have the value of “WatchTime” or “Balance”.  
This value indicates if we should sort the **Viewer**s in descending order based on their **Watchtime** or **Balance**.  
If this header is not provided, we will apply no sorting to the data.

In some circumstances a string can be used to identify an object. For example, a Login can be identified by using the Username or Email. Hence a header of Username or Email can be provided along with the string value.  
Which will then cause the Login(s) to be returned.

## Creating Objects

{

"Data": null,

"Code": 200,

"Message": "The requested task was performed successfully"

}

The command curl -X POST 'https://owlcoin.co.uk/webapi/viewer' -k -H 'AuthToken: AUTHTOKEN' -H 'BotID: 84' -H 'CurrencyID: 231' -H 'DiscordID: 1234' -d '' will create a **Viewer** for the specified **Currency**. If the given **DiscordID** and/or **TwitchID** isn’t present in the **Currency** then a successful response will be returned (far right).

{

"Data": null,

"Code": 400,

"Message": "Bad Request, a Viewer already exists in this currency with that Discord and/or Twitch ID"

}

However, if the **ID** is present we get the following error response (close right).

A further error message (close below) will be shown if the provided **AuthToken** or **BotID** is invalid.