

# Digital Solutions 2019 v1.2

## IA3 mid-level annotated sample response

---

### Transcript of video

This video is available from

[https://www.qcaa.qld.edu.au/downloads/portal/media/snr\\_digital\\_solutions\\_19\\_ia3\\_mid\\_resp.mp4](https://www.qcaa.qld.edu.au/downloads/portal/media/snr_digital_solutions_19_ia3_mid_resp.mp4)

### Concept for a new web application for young people

Student

This is the data exchange component of the web application. The City Cycles data is being displayed, however at this stage the fireworks data is not being displayed below it. This piece of code is setting up a new XMLHttpRequest object. This object will be used to request data from a web server. The data being retrieved will be in JSON format. This code will send a request to a server to GET the data.

JCDecaux is the company that operates the Brisbane City Cycle bike hire scheme for the Brisbane City Council. They run similar schemes around the world.

An API enables you to access a website's data without going near its databases. This line of code is sending a request to their server to obtain the data for Brisbane. To access their real-time data, you have to sign up to receive a free API key. The API key is unique to the user. It's a form of security but really needs to be combined with other forms of security. The code will check to see if the requested data is ready to be sent. The data will then be sent and stored in a variable where it can loop through the data and display it on the web page in a HTML table.

One of the faults with the program is that all of the bicycles in all locations are being displayed. Only locations with 20 or more bicycles available should be displayed. The latitude and longitude data is not displaying correctly either. [Object Object] is being displayed rather than the actual data. I think this is because latitude and longitude are down a level in the table. So I would have to obtain the position then change the code to reflect the new data position. For example latitude is denoted as "lat" which lies under the "position" field. This can be seen more clearly if you look at the code in Firefox.

Here I have used the field "position" rather than "L.A.T." and "L.N.G.". Further exploration would be required to solve this issue.

The fireworks data is not being displayed at all despite using similar code. There appears to be a difference in the way the data for each dataset is represented. In the fireworks dataset, the fields all seem to branch off from the word "records:". This is not the case in the City Cycle dataset. I would like to determine whether this is having any impact. Further exploration of this issue would also be required to solve this problem.

In examining the data page, it can be seen that there are two kinds of data delivered by the platform:

- Static data provides stable information like station position, number of bike stands, payment terminal availability, etc.
- Dynamic data provides station state, number of available bikes, number of free bike stands, etc.

Static data can be downloaded manually in file format or accessed through the API. It can be downloaded in either JSON or CSV format. The JSON sets were used for my project.

Dynamic data are refreshed every minute and can be accessed only through the API.

Data format is in accordance with RFC 4627, results in JSON format are UTF-8 encoded. The data sets contain these data fields. Included on the developer page are request strings and API responses for a number of data requests that may be used.

This concludes the demonstration of the data exchange component of this assignment.