1. We use MD5 algorithm to keep data secure and correct. The reason why we need that is

* data loss during transmission, due to instability in the internet connection/ sever
* the file can be tampered due to virus infection
* due to Hacker attacks.

1. We need to check the integrity of the file we received.
2. How MD5 works? The idea behind this algorithm is to take up a random data(text or binary) as an input and generate a fixed size” hash value” as the output. The input data can be of any size or length, but the output “hash value” size is always fixed. Which means whatever the input size you give, the algorithm generates a fixed size (32 digit hex) MD5 hash.
3. The data type is different between production environment and test environment. In test environment, we can directly get object of connect. But in the production environment, we need to convers json string to json object.
4. The difference between xml and json:

* xml has to be parsed with an xml parser. Json can be parsed by a standard javaScript function.
* Xml is much more difficult to parse than json
* Json is parsed into a ready-to-use javaScript object
* Json is shorter, json is quicker to read and write, json can use arrays, json doesn’t use end tag.
* But both json and xml can be used to receive data from a web server.

1. asynchronous tasks:

* the main work flow of those code is that TM system use post method to send json string to OTM system.
* OTM system use MD5 algorithm to verify whether the data is correct and integral. And according to content-type to get msg\_header and msg\_body.
* Then parse the request and get the header and body.
* Then insert data into log table in OTM system
* There is an asynchronous task: when data insertion is successful, OTM system give a successful response to TM system, and at the same time, OMT system invoke an asynchronous task to manipulate those data and make them into xml format so the in-built functions can deal with the data automatically (like update related information in some tables in OTM database)

1. How to test the codes:

* We use the platform postman
* There are two model of testing: one is debug mode(During development stage when OTM haven’t connected to the TM system )
* Another mode is non-debug mode. After we have already completed first round testing, then connect to TM system. Through debugging on the two systems, the programs has proved of reliability and stability. After that, we move to final stage, testing in the production environments.