2. Web Service Feed

2.1 The PHP class should feed the data from a web service listening at

www.samplesource.com/sample-feed/

> **Response**: I have prepared a separate URL which is providing feed in base64 encoding. The URL is as follows.
>
> http://ec2-54-71-17-96.us-west-2.compute.amazonaws.com/webservicefeed/
>
> This URL can be called with cURL and POST field i.e. currentDate.
>
> Neerajs-MBP:key neerajthakur$ curl --data "currentDate=18-10-2016 23:24:23"
> http://ec2-54-71-17-96.us-west-2.compute.amazonaws.com/webservicefeed/

2.2 The web service would accept only POST requests containing a currentDate parameter in POST body formatted as "dd-mm-yyyy hh:mm:ss"

> **Response:**
> I have used MySQLi prepared statement via a simple database abstract class/layer called "DBConnect" and coded SQL query which prevents SQL injection. I have used relevant names for classes, variables, and methods.
>
> I have used following naming conventions..
>
> Class name is in TitleCase,
> Class member methods name is in camelCase
> Class member data is in lower_case with underscore as separator.

2.3 The web service will reply with a base64 encoded string in the POST response body containing a binary stream with the following structure:

> **Response**:
> The web service is rendering base64 encoded string which is getting binary data via pack function and its format.

MySQL feed table is as follows which is feeding data for the above web service.

LastUpdate field datatype is int(11) which is equal to 4 bytes (32 bits)

HitCount datatype is int(11) with unsigned

LastTag datatype is varchar (24) which can store null byte '\0'

Following the Feeds table structure

```
CREATE TABLE `feeds` (
  `id` int(4) NOT NULL AUTO_INCREMENT PRIMARY KEY,
  `LastUpdate` int(11) NOT NULL UNIQUE KEY,
  `HitCount` int(11) UNSIGNED NOT NULL,
  `LastTag` varchar(24) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

Sample feeds table and data can be downloaded from following link.
http://ec2-54-71-17-96.us-west-2.compute.amazonaws.com/webservicefeed/feeds_insert.sql

The DBConnect class instance is created only once as per singleton design pattern.

3. Saving to MySQL Database

3.1 The required PHP class must save web service fetched data to a local MySQL database.

Response:
This PHP Class name is Stats which is created as a separate project than the WebService Feed class. Stats class is reading feed content via cURL. The result is then parsed, base64 decoded and then unpacked.

3.2 The data must be saved in a MySQL table following the binary stream structure above. The MySQL table must be named DailyStats and should have following columns: Id (INT(4) Primary Key), LastUpdate (DATETIME), HitCount (INT(11)), LastTag (VARCHAR(32)).

Response:
Data which is unpacked in above point is then inserted in DailyStats table.

3.3 Web service data must be saved by updating/overwriting current day row in the MySQL table above if there is a row for current day, otherwise the PHP class must create/insert a new row.

Response:
For insert or update, i have used mysqli "insert on duplicate key update" which is single line SQL query feature. Its written in the insertFeeds() function as follows.

```
$query = "INSERT INTO ".$this->tablename." (LastUpdate, HitCount, LastTag)
VALUES (?, ?, ?) ON DUPLICATE KEY UPDATE
LastUpdate=VALUES(LastUpdate), HitCount=VALUES(HitCount),
LastTag=VALUES(LastTag)";
```

3.4 The required PHP class must also make possible to create the MySQL table above via a method call which should ;rst check if the table already exists in the MySQL "Statistics" database schema.

Response:
This check is implemented using "CREATE TABLE IF NOT EXISTS" mysql query.

Following SQL create structure is used to create DailyStats on fly if it does not exist.

```
private function tableCreateIfNot($table) {
$sql = "CREATE TABLE IF NOT EXISTS ".$table." (
`Id` int(4) NOT NULL AUTO_INCREMENT PRIMARY KEY,
`LastUpdate` datetime NOT NULL UNIQUE KEY,
`HitCount` int(11) NOT NULL,
`LastTag` varchar(32) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=latin1;";
$this->conn->query($sql);
}
```

Demo WebService Feed cURL call :

Neerajs-MBP:key neerajthakur$ curl --data "currentDate=18-10-2016 23:24:23"
http://ec2-54-71-17-96.us-west-2.compute.amazonaws.com/webservicefeed/

Ref response with base64 encoding.

Neerajs-MBP:itouch neerajthakur$ curl --data "currentDate=18-10-2016 23:24:23" http://ec2-54-71-17-96.us-west-2.compute.amazonaws.com/webservicefeed/ AAAAAFgFZgA=|AAAAAAAAA/A=|c3RyIDI0IGNoYXJzIGluY3wgdGFpbCAw

Demo Statistics Class URL which is called with currentDate as a post field.

http://ec2-54-71-17-96.us-west-2.compute.amazonaws.com/stats_class/