

Cloud Development Microservice Application DB service Document

Project Name: Holiday Query and Data Storage Service (Holiday Cache Service)

Group: r

File: r_db_service.py

Deployment Address: <https://Hua123456.pythonanywhere.com/>

2. -Create Database Table

2.1-Create Database Table on the local computer

```
mysql> CREATE TABLE public_holidays (
    ->     date VARCHAR(10) NOT NULL,
    ->     countryCode VARCHAR(2) NOT NULL,
    ->     month VARCHAR(2) NOT NULL,
    ->     name VARCHAR(100) NOT NULL,
    ->     cache_time DATETIME NOT NULL,
    ->     PRIMARY KEY (date, countryCode)
    -> );
Query OK, 0 rows affected (0.315 sec)
```

```
mysql> DESCRIBE public_holidays;
+-----+-----+-----+-----+-----+
| Field | Type   | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+
| date  | varchar(10) | NO  | PRI | NULL   |
| countryCode | varchar(2) | NO  | PRI | NULL   |
| month | varchar(2) | NO  |      | NULL   |
| name  | varchar(100) | NO |      | NULL   |
| cache_time | datetime | NO |      | NULL   |
+-----+-----+-----+-----+-----+
5 rows in set (0.050 sec)
```

2.2-Create Database Table in pythonanywhere

```

mysql> CREATE TABLE public_holidays (
    ->     date VARCHAR(10) NOT NULL,
    ->     countryCode VARCHAR(2) NOT NULL,
    ->     month VARCHAR(2) NOT NULL,
    ->     name VARCHAR(100) NOT NULL,
    ->     cache_time DATETIME NOT NULL,
    ->     PRIMARY KEY (date, countryCode)
    -> );
Query OK, 0 rows affected (0.03 sec)

```

```

mysql> DESCRIBE public_holidays;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| date  | varchar(10) | NO  | PRI | NULL   |       |
| countryCode | varchar(2) | NO  | PRI | NULL   |       |
| month | varchar(2) | NO  |      | NULL   |       |
| name  | varchar(100) | NO |      | NULL   |       |
| cache_time | datetime | NO |      | NULL   |       |
+-----+-----+-----+-----+-----+-----+
5 rows in set (0.01 sec)

```

3 - Verify that the service is running normally on Local computer

3.1-Here I test the DB Service endpoint with curl.

①curl:

```
curl "http://127.0.0.1:5000/test"
```

②screenshots:

```
C:\Users\OMEN>curl "http://127.0.0.1:5000/test"
r Group Holiday DB SQLAlchemy OK
C:\Users\OMEN>
```

3.2 - Query Chinese holiday data

1. Query Chinese holiday with no data in Database

①curl:

```
curl "http://127.0.0.1:5000/db/get-china"
```

②screenshots:

```
C:\Users\OMEN>curl "http://127.0.0.1:5000/db/get-china"
{
  "error": "No holiday data found for CN in None"
}
```

2. Query Chinese holiday by year with no data in Database

1curl:

```
curl "http://127.0.0.1:5000/db/get-china?year=2026"
```

2screenshots:

```
C:\Users\OMEN>curl "http://127.0.0.1:5000/db/get-china?year=2026"
{
  "error": "No holiday data found for CN in 2026"
}
```

- a. Querying Chinese holiday data requires inserting data. Here is the curl command to insert data.

1curl:

```
curl -X POST http://127.0.0.1:5000/db/save-china -H
"Content-Type: application/json" -d
"[{"date":"2026-01-01","name":"New Year's
Day","countryCode":"CN","month":01}, {"date":"2026-02-
17","name":"Chinese New Year (Spring
Festival)","countryCode":"CN","month":02}, {"date":"202
6-10-01","name":"National
Day","countryCode":"CN","month":10}]"
```

2screenshots:

```
C:\Users\OMEN>curl -X POST http://127.0.0.1:5000/db/save-china -H "Content-Type: application/json" -d "[{"date": "2026-01-01", "name": "New Year's Day", "countryCode": "CN", "month": 01}, {"date": "2026-02-17", "name": "Chinese New Year (Spring Festival)", "countryCode": "CN", "month": 02}, {"date": "2026-10-01", "name": "National Day", "countryCode": "CN", "month": 10}]"
{
  "count": 3,
  "message": "CN Holiday data saved/updated successfully"
}
```

```
mysql> SELECT * FROM public_holidays;
+-----+-----+-----+-----+
| date | countryCode | month | name
+-----+-----+-----+-----+
| 2026-01-01 | CN | 01 | New Year's Day
| 2026-02-17 | CN | 02 | Chinese New Year (Spring Festival)
| 2026-10-01 | CN | 10 | National Day
+-----+-----+-----+
3 rows in set (0.007 sec)
```

- b. Querying Chinese holiday data with curl

1curl:

```
curl "http://127.0.0.1:5000/db/get-china"
```

2screenshots:

```
C:\Users\OMEN>curl "http://127.0.0.1:5000/db/get-china"
{
  "count": 3,
  "data": [
    {
      "cache_time": "2025-11-09 16:06:00",
      "countryCode": "CN",
      "date": "2026-01-01",
      "month": "01",
      "name": "New Year's Day"
    },
    {
      "cache_time": "2025-11-09 16:06:00",
      "countryCode": "CN",
      "date": "2026-02-17",
      "month": "02",
      "name": "Chinese New Year (Spring Festival)"
    },
    {
      "cache_time": "2025-11-09 16:06:00",
      "countryCode": "CN",
      "date": "2026-10-01",
      "month": "10",
      "name": "National Day"
    }
  ],
  "message": "CN holiday data get successfully"
}
```

c. To query Chinese holiday data by year, with curl command

①curl:

curl "<http://127.0.0.1:5000/db/get-china?year=2026>"

②screenshots:

```
C:\Users\OMEN>curl "http://127.0.0.1:5000/db/get-china?year=2026"
{
  "count": 3,
  "data": [
    {
      "cache_time": "2025-11-09 16:06:00",
      "countryCode": "CN",
      "date": "2026-01-01",
      "month": "01",
      "name": "New Year's Day"
    },
    {
      "cache_time": "2025-11-09 16:06:00",
      "countryCode": "CN",
      "date": "2026-02-17",
      "month": "02",
      "name": "Chinese New Year (Spring Festival)"
    },
    {
      "cache_time": "2025-11-09 16:06:00",
      "countryCode": "CN",
      "date": "2026-10-01",
      "month": "10",
      "name": "National Day"
    }
  ],
  "message": "CN holiday data get successfully"
}
```

3.3 -Query Irish Holiday Data

1. Query Irish holiday with no data in Database

1curl:

```
curl "http://127.0.0.1:5000/db/get-ireland"
```

2screenshots:

```
C:\Users\OMEN>curl "http://127.0.0.1:5000/db/get-ireland"
{
  "error": "No holiday data found for IE in None"
}
```

2. Query Irish holiday by year with no data in Database

1curl:

```
curl "http://127.0.0.1:5000/db/get-ireland?year=2026"
```

2screenshots:

```
C:\Users\OMEN>curl "http://127.0.0.1:5000/db/get-ireland?year=2026"
{
  "error": "No holiday data found for IE in 2026"
}
```

d. Querying Irish holiday data requires inserting data. Here is the curl command to insert data.

1curl:

```
curl -X POST http://127.0.0.1:5000/db/save-ireland -H
"Content-Type: application/json" -d
"[{"date":"2026-01-01","name":"New Year's
Day","countryCode":"IE","month":"01"}, {"date":"2026-03-1
7","name":"Saint Patrick's
Day","countryCode":"IE","month":"03"}, {"date":"2026-12-2
5","name":"Christmas
Day","countryCode":"IE","month":"12"}]"
```

2screenshots:

```
C:\Users\OMEN>curl -X POST http://127.0.0.1:5000/db/save-ireland -H "Content-Type: application/json" -d "[{"date":"2026-01-01","name":"New Year's Day","countryCode":"IE","month":"01"}, {"date":"2026-03-17","name":"Saint Patrick's Day","countryCode":"IE","month":"03"}, {"date":"2026-12-25","name":"Christmas Day","countryCode":"IE","month":"12"}]"
{
  "count": 3,
  "message": "IE Holiday data saved/updated successfully"
}
```

```

mysql> SELECT * FROM public_holidays;
+-----+-----+-----+-----+-----+
| date | countryCode | month | name | cache_time |
+-----+-----+-----+-----+-----+
| 2026-01-01 | CN | 01 | New Year's Day | 2025-11-09 16:41:24 |
| 2026-01-01 | IE | 01 | New Year's Day | 2025-11-09 16:45:55 |
| 2026-02-17 | CN | 02 | Chinese New Year (Spring Festival) | 2025-11-09 16:41:24 |
| 2026-03-17 | IE | 03 | Saint Patrick's Day | 2025-11-09 16:45:55 |
| 2026-10-01 | CN | 10 | National Day | 2025-11-09 16:41:24 |
| 2026-12-25 | IE | 12 | Christmas Day | 2025-11-09 16:45:55 |
+-----+-----+-----+-----+-----+
6 rows in set (0.036 sec)

```

e. Querying Irish holiday data with curl

①curl:

[curl "http://127.0.0.1:5000/db/get-ireland"](http://127.0.0.1:5000/db/get-ireland)

②screenshots:

```

C:\Users\OMEN>curl "http://127.0.0.1:5000/db/get-ireland"
{
  "count": 3,
  "data": [
    {
      "cache_time": "2025-11-09 16:14:16",
      "countryCode": "IE",
      "date": "2026-01-01",
      "month": "01",
      "name": "New Year's Day"
    },
    {
      "cache_time": "2025-11-09 16:14:16",
      "countryCode": "IE",
      "date": "2026-03-17",
      "month": "03",
      "name": "Saint Patrick's Day"
    },
    {
      "cache_time": "2025-11-09 16:14:16",
      "countryCode": "IE",
      "date": "2026-12-25",
      "month": "12",
      "name": "Christmas Day"
    }
  ],
  "message": "IE holiday data get successfully"
}

```

f. To query Chinese holiday data by year, with curl command

1curl:

```
curl "http://127.0.0.1:5000/db/get-ireland?year=2026"
```

2screenshots:

```
C:\Users\OMEN>curl "http://127.0.0.1:5000/db/get-ireland?year=2026"
{
  "count": 3,
  "data": [
    {
      "cache_time": "2025-11-09 16:14:16",
      "countryCode": "IE",
      "date": "2026-01-01",
      "month": "01",
      "name": "New Year's Day"
    },
    {
      "cache_time": "2025-11-09 16:14:16",
      "countryCode": "IE",
      "date": "2026-03-17",
      "month": "03",
      "name": "Saint Patrick's Day"
    },
    {
      "cache_time": "2025-11-09 16:14:16",
      "countryCode": "IE",
      "date": "2026-12-25",
      "month": "12",
      "name": "Christmas Day"
    }
  ],
  "message": "IE holiday data get successfully"
}
```

4. Verify that the service is running normally on pythonanywhere.

4.1-Here I test the DB Service endpoint with curl.

1curl:

```
curl "https://hua123456.pythonanywhere.com/test"
```

2screenshots:

```
C:\Users\OMEN>curl "https://hua123456.pythonanywhere.com/test"
r Group Holiday DB SQLAlchemy OK
C:\Users\OMEN>
```

4.2 - Query Chinese holiday data

Query Chinese holiday with no data in Database

1curl:

```
curl "https://hua123456.pythonanywhere.com/db/get-china"
```

2screenshots:

```
C:\Users\OMEN>curl "https://hua123456.pythonanywhere.com/db/get-china"
{"error": "No holiday data found for CN in None"}
```

Query Chinese holiday by year with no data in Database

1curl:

```
curl "https://hua123456.pythonanywhere.com/db/get-china?year=2026"
```

2screenshots:

```
C:\Users\OMEN>curl "https://hua123456.pythonanywhere.com/db/get-china?year=2026"
{"error": "No holiday data found for CN in 2026"}
```

- g. Querying Chinese holiday data requires inserting data. Here is the curl command to insert data.

1curl:

```
curl -X POST
```

```
https://hua123456.pythonanywhere.com/db/save-china -H
"Content-Type: application/json" -d
"[{"date": "2026-01-01", "name": "New Year's
Day", "countryCode": "CN", "month": "01"}, {"date": "2026-02-
17", "name": "Chinese New Year (Spring
Festival)", "countryCode": "CN", "month": "02"}, {"date": "202
6-10-01", "name": "National
Day", "countryCode": "CN", "month": "10"}]"
```

2screenshots:

```
C:\Users\OMEN>curl -X POST https://hua123456.pythonanywhere.com/db/save-china -H "Content-Type: application/json" -d "[{"date": "2026-01-01", "name": "New Year's Day", "countryCode": "CN", "month": "01"}, {"date": "2026-02-17", "name": "Chinese New Year (Spring Festival)", "countryCode": "CN", "month": "02"}, {"date": "2026-10-01", "name": "National Day", "countryCode": "CN", "month": "10"}]" {"count": 3, "message": "CN Holiday data saved/updated successfully"}
```

```
mysql> select * from public_holidays;
+-----+-----+-----+-----+-----+
| date | countryCode | month | name | cache_time |
+-----+-----+-----+-----+-----+
| 2026-01-01 | CN | 01 | New Year's Day | 2025-11-09 08:54:21 |
| 2026-02-17 | CN | 02 | Chinese New Year (Spring Festival) | 2025-11-09 08:54:21 |
| 2026-10-01 | CN | 10 | National Day | 2025-11-09 08:54:21 |
+-----+-----+-----+-----+-----+
3 rows in set (0.01 sec)
```

- h. Querying Chinese holiday data with curl

1curl:

```
curl "https://hua123456.pythonanywhere.com/db/get-china"
```

2screenshots:

```
C:\Users\OMEN>curl "https://hua123456.pythonanywhere.com/db/get-china"
{"count":3,"data":[{"cache_time":"2025-11-09 08:54:21","countryCode":"CN","date":"2026-01-01","month":"01","name":"New Year's Day"}, {"cache_time":"2025-11-09 08:54:21","countryCode":"CN","date":"2026-02-17","month":"02","name":"Chinese New Year (Spring Festival)"}, {"cache_time":"2025-11-09 08:54:21","countryCode":"CN","date":"2026-10-01","month":"10","name":"National Day"}], "message": "CN holiday data get successfully"}
```

i. To query Chinese holiday data by year, with curl command

1curl:

```
curl
```

```
"https://hua123456.pythonanywhere.com/db/get-china?year=2026"
```

2screenshots:

```
C:\Users\OMEN>curl "https://hua123456.pythonanywhere.com/db/get-china?year=2026"
{"count":3,"data":[{"cache_time":"2025-11-09 08:54:21","countryCode":"CN","date":"2026-01-01","month":"01","name":"New Year's Day"}, {"cache_time":"2025-11-09 08:54:21","countryCode":"CN","date":"2026-02-17","month":"02","name":"Chinese New Year (Spring Festival)"}, {"cache_time":"2025-11-09 08:54:21","countryCode":"CN","date":"2026-10-01","month":"10","name":"National Day"}], "message": "CN holiday data get successfully"}
```

4.3 -Query Irish Holiday Data

Query Irish holiday with no data in Database

1curl:

```
curl "https://hua123456.pythonanywhere.com/db/get-ireland"
```

2screenshots:

```
C:\Users\OMEN>curl "https://hua123456.pythonanywhere.com/db/get-ireland"
{"error": "No holiday data found for IE in None"}
```

Query Irish holiday by year with no data in Database

1curl:

```
curl "https://hua123456.pythonanywhere.com/db/get-ireland?year=2026"
```

2screenshots:

```
C:\Users\OMEN>curl "https://hua123456.pythonanywhere.com/db/get-ireland?year=2026"
{"error": "No holiday data found for IE in 2026"}
```

j. Querying Irish holiday data requires inserting data. Here is the curl

command to insert data.

①curl:

```
curl -X POST
```

```
https://hua123456.pythonanywhere.com/db/save-ireland -H  
"Content-Type: application/json" -d  
"[{"date":"2026-01-01","name":"New Year's  
Day","countryCode":"IE","month":01},{ {"date":"2026-03-1  
7","name":"Saint Patrick's  
Day","countryCode":"IE","month":03},{ {"date":"2026-12-2  
5","name":"Christmas  
Day","countryCode":"IE","month":12}]"
```

②screenshots:

```
C:\Users\OMEN>curl -X POST https://hua123456.pythonanywhere.com/db/save-ireland -H "Content-Type: application/json" -d  
[{"date":"2026-01-01","name":"New Year's Day","countryCode":"IE","month":01},{ {"date":"2026-03-17","name":"Saint Patrick's Day","countryCode":"IE","month":03},{ {"date":"2026-12-25","name":"Christmas Day","countryCode":"IE","month":12}]"  
{"count":3,"message":"IE Holiday data saved/updated successfully"}
```

```
mysql> select * from public_holidays;  
+-----+-----+-----+-----+-----+  
| date | countryCode | month | name | cache_time |  
+-----+-----+-----+-----+-----+  
| 2026-01-01 | CN | 01 | New Year's Day | 2025-11-09 08:54:21 |  
| 2026-01-01 | IE | 01 | New Year's Day | 2025-11-09 09:00:16 |  
| 2026-02-17 | CN | 02 | Chinese New Year (Spring Festival) | 2025-11-09 08:54:21 |  
| 2026-03-17 | IE | 03 | Saint Patrick's Day | 2025-11-09 09:00:16 |  
| 2026-10-01 | CN | 10 | National Day | 2025-11-09 08:54:21 |  
| 2026-12-25 | IE | 12 | Christmas Day | 2025-11-09 09:00:16 |  
+-----+-----+-----+-----+-----+  
6 rows in set (0.00 sec)
```

k. Querying Irish holiday data with curl

①curl:

```
curl "https://hua123456.pythonanywhere.com/db/get-ireland"
```

②screenshots:

```
C:\Users\OMEN>curl "https://hua123456.pythonanywhere.com/db/get-ireland"  
{"count":3,"data":[{"cache_time":"2025-11-09 09:00:16","countryCode":"IE","date":"2026-01-01","month":01,"name":"New Y  
ear's Day"}, {"cache_time":"2025-11-09 09:00:16","countryCode":"IE","date":"2026-03-17","month":03,"name":"Saint Patric  
k's Day"}, {"cache_time":"2025-11-09 09:00:16","countryCode":"IE","date":"2026-12-25","month":12,"name":"Christmas Day"}], "message":"IE holiday data get successfully"}
```

I. To query Chinese holiday data by year, with curl command

①curl:

```
curl
```

```
"https://hua123456.pythonanywhere.com/db/get-ireland?year=2026"
```

②screenshots:

```
C:\Users\OMEN>curl "https://hua123456.pythonanywhere.com/db/get-ireland?year=2026"
{"count":3,"data":[{"cache_time":"2025-11-09 09:00:16","countryCode":"IE","date":"2026-01-01","month":"01","name":"New Year's Day"}, {"cache_time":"2025-11-09 09:00:16","countryCode":"IE","date":"2026-03-17","month":"03","name":"Saint Patrick's Day"}, {"cache_time":"2025-11-09 09:00:16","countryCode":"IE","date":"2026-12-25","month":"12","name":"Christmas Day"}], "message":"IE holiday data get successfully"}
```