

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.

1)curl:

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

2)screenshots:

```
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

1)curl:

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

2)screenshots:

```
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

1 curl:

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

2 screenshots:

```
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.

1 curl:

```
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"}]"
```

2 screenshots:

```
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                                     | cache_time      |
+-----+-----+-----+-----+-----+
| 2026-01-01 | CN         | 01    | New Year's Day                         | 2025-11-09 16:41:24 |
| 2026-02-17 | CN         | 02    | Chinese New Year (Spring Festival)     | 2025-11-09 16:41:24 |
| 2026-10-01 | CN         | 10    | National Day                           | 2025-11-09 16:41:24 |
+-----+-----+-----+-----+-----+
3 rows in set (0.007 sec)
```

b. Querying Chinese holiday data with curl

1 curl:

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

2 screenshots:

```
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

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

```
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

1)curl:

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

2)screenshots:

```
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

1)curl:

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

2)screenshots:

```
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.

1)curl:

```
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"}]"
```

2)screenshots:

```
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

① curl:

curl "<http://127.0.0.1:5000/db/get-ireland>"

② screenshots:

```
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

1 curl:

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

2 screenshots:

```
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.

1 curl:

curl "<https://hua123456.pythonanywhere.com/test>"

2 screenshots:

```
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

1 curl:

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

2 screenshots:

```
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

1 curl:

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

2 screenshots:

```
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.

1 curl:

```
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\"}]"
```

2 screenshots:

```
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

1 curl:

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

2 screenshots:

```
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

1 curl:

curl

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

2 screenshots:

```
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

1 curl:

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

2 screenshots:

```
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

1 curl:

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

2 screenshots:

```
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.

1 curl:

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\"}]\"

2 screenshots:

```
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

1 curl:

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

2 screenshots:

```
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 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"}
```

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

1 curl:

curl

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

2 screenshots:

```
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"}
```