

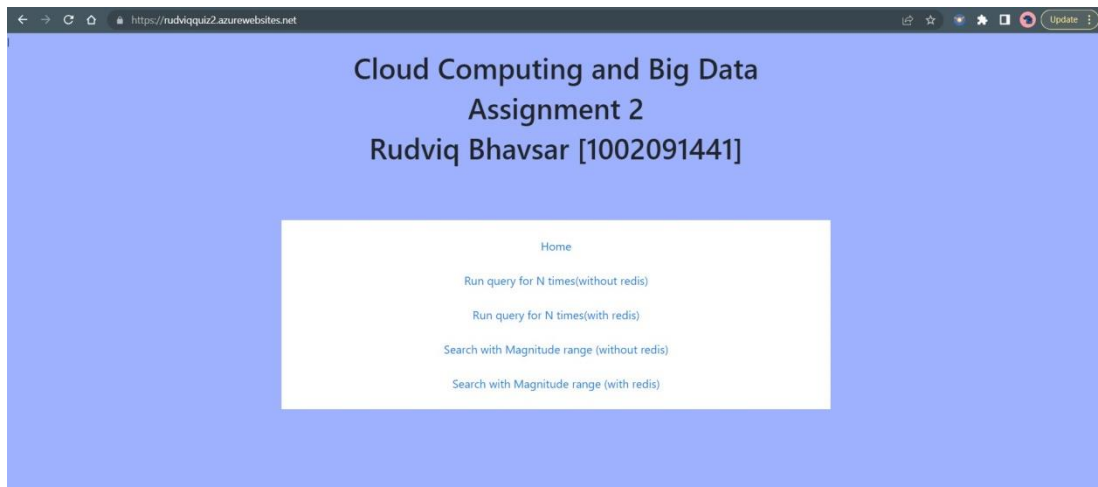
CSE 6332-002 Cloud Computing & Big Data

Name – Rudviq Sunil Bhavsar
UTA ID – 1002091441
Email – rsb1441@mavs.uta.edu

Assignment 3

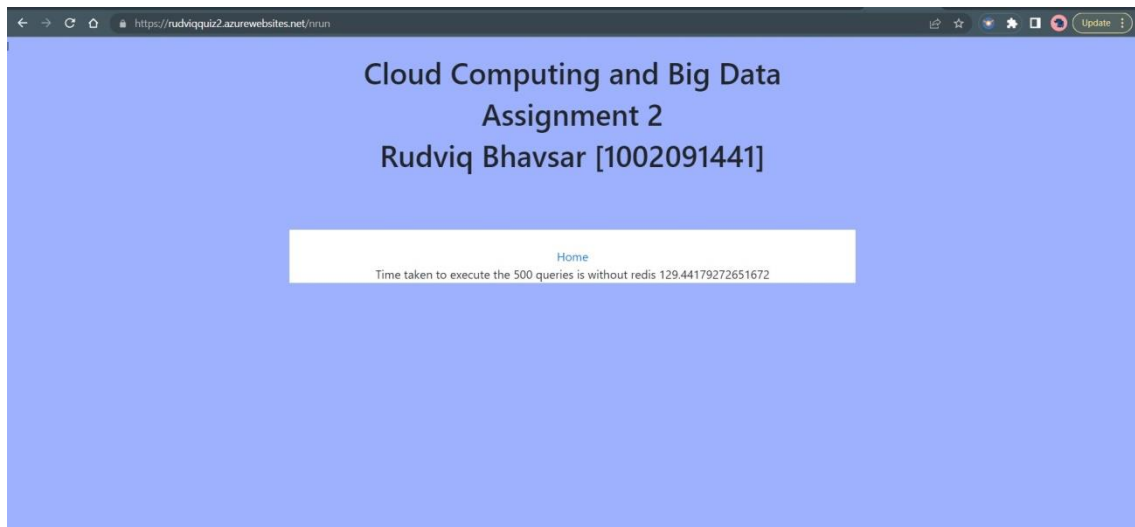
CODE SNIPPETS-

1) Home page

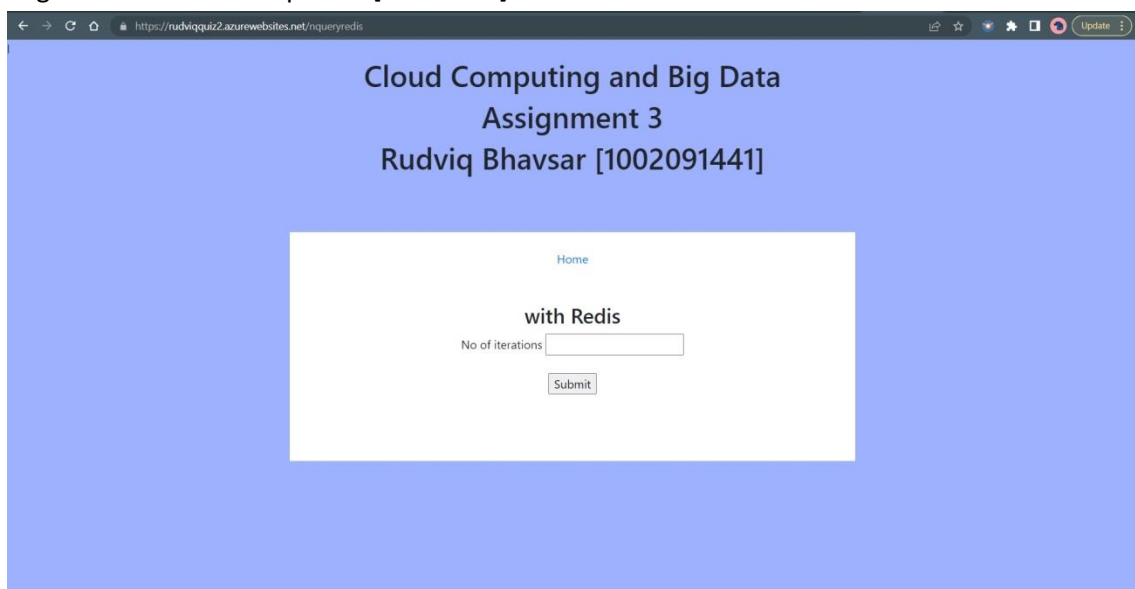


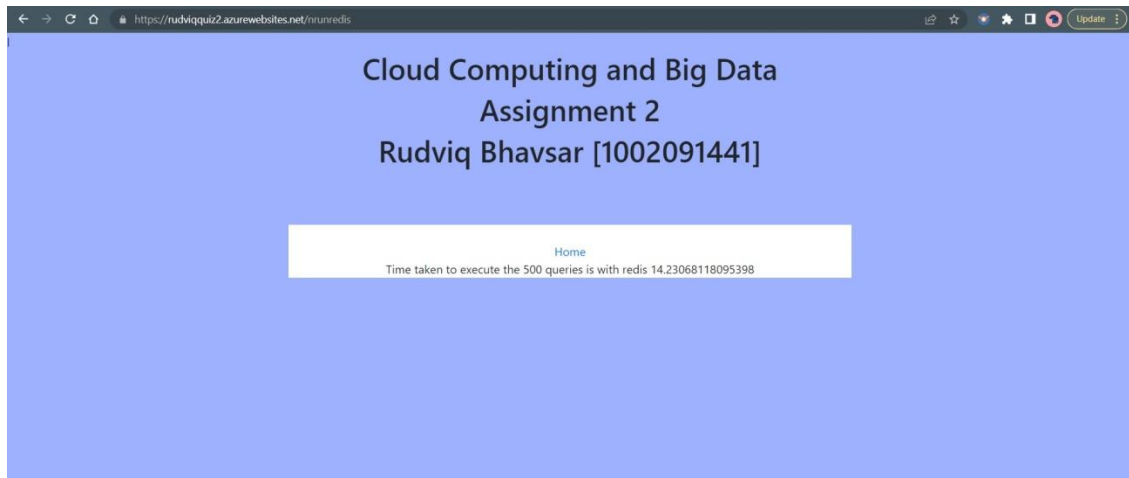
2) Page to run random N queries [without redis]



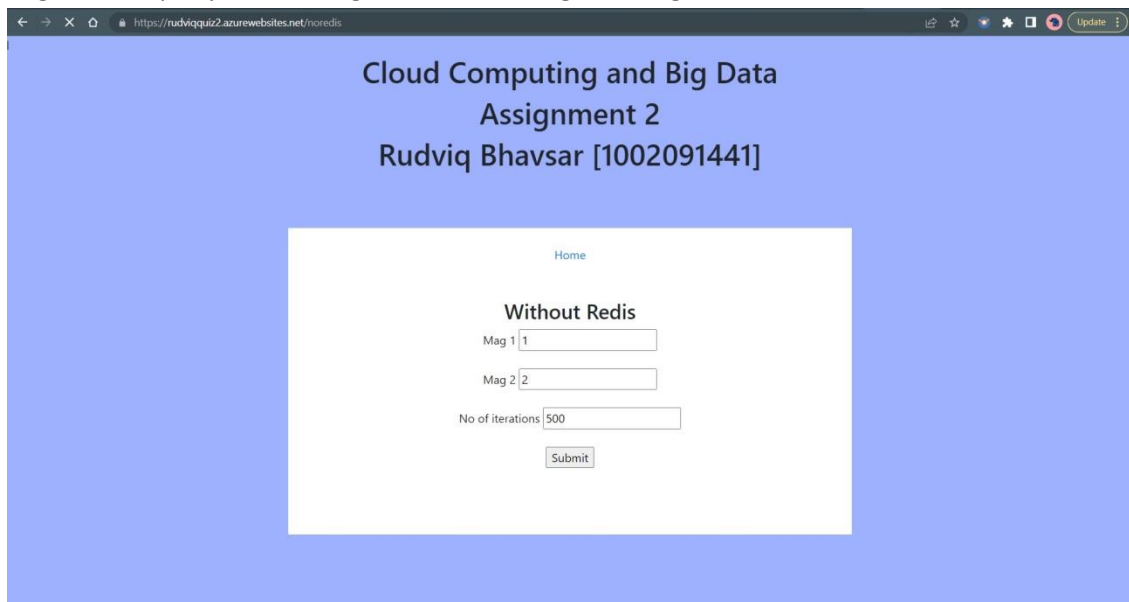


3) Page to run random N queries [with redis]





4) Page to run query to find magnitude between given range. Without Redis



5) Page to run query to find magnitude between given range. With Redis

Cloud Computing and Big Data
Assignment 2
Rudviq Bhavsar [1002091441]

Home

with Redis

Mag 1

Mag 2

No of iterations

Cloud Computing and Big Data
Assignment 3
Rudviq Bhavsar [1002091441]

Home

Time taken to execute the 1 queries is with redis 1.0626835823059082

Source Code –

1) Python file source code

```
from math import radians,sin,cos,asin,sqrt
from datetime import date, datetime, timedelta
from flask import Flask, render_template, request
import time
import pyodbc
import redis
import hashlib
import pickle
from flask_wtf import FlaskForm
from wtforms import StringField, SubmitField
```

```

from wtforms.validators import DataRequired

app = Flask(__name__)
app.config['SECRET_KEY'] = 'rudviqb'

driver = '{ODBC Driver 18 for SQL Server}'
database = 'Database02'
server = 'tcp:rb0212.database.windows.net,1433'
username = "rsb1441"
password = "Rb#azure02"

conn=pyodbc.connect('DRIVER=' + driver + ';SERVER=' + server +
';PORT=1433;DATABASE=' + database + ';UID=' + username + ';PWD=' + password)
cursor=conn.cursor()

r = redis.Redis(host='rudviq1441.redis.cache.windows.net',
                port=6379, db=0,
password='GAPcGoBS3x1SGsxBZvQYzs5BZ7VpJdrZwAzCaCnUOdY=',ssl=False)

@app.route('/withredis', methods=['POST','GET'])
def redismag():
    mg1=request.form['mg1']
    mg2=request.form['mg2']
    n =int(request.form['n'])
    sql_query="Select id,time,latitude,longitude,depth,mag,place,magType from
all_month WHERE mag between '"+mg1+"' and '"+mg2+"'"
    hash = hashlib.sha224(sql_query.encode('utf-8')).hexdigest()
    key = "redis_cache:" + hash
    t1 = time.time()
    for i in range(1,n+1):
        if(r.get(key)):
            pass
        else:
            cursor.execute(sql_query)
            data = cursor.fetchall()
            r.set(key, pickle.dumps(data))
            r.expire(key,36)
    t2 = time.time()
    time_taken=t2-t1
    return render_template("showTimeRedis.html",time2 = time_taken,no = n )

@app.route('/withoutredis', methods=['POST','GET'])
def withoutredis():

```

```

mg1=request.form['mg1']
mg2=request.form['mg2']
n =int(request.form['n'])
sql_query="Select id,latitude,longitude,depth,mag,place,magType from
all_month WHERE mag between '"+mg1+"' and '"+mg2+"' "
t1 = time.time()
for i in range(1,n+1):
    cursor.execute(sql_query)
    data = cursor.fetchall()
t2 = time.time()
time_taken=t2-t1
return render_template("showTimeNoRedis.html",time2 = time_taken,no =
n)

```

```

@app.route('/nrun', methods=['POST','GET'])
def nrun():
    n=int(request.form['n'])
    sql_query="Select * from all_month"
    t1 = time.time()
    for i in range(1,n+1):
        cursor.execute(sql_query)
        data = cursor.fetchall()
    t2 = time.time()
    time_taken=t2-t1
    return render_template("showTimeNoRedis.html",time2 = time_taken, no =
n)

```

```

@app.route('/nrunredis', methods=['POST','GET'])
def nrunredis():
    n=int(request.form['n'])
    sql_query="Select * from all_month"
    hash = hashlib.sha224(sql_query.encode('utf-8')).hexdigest()
    key = "redis_cache:" + hash
    t1 = time.time()
    for i in range(1,n+1):
        if(r.get(key)):
            pass
        else:
            cursor.execute(sql_query)
            data = cursor.fetchall()
            r.set(key, pickle.dumps(data))
            r.expire(key,36)
    t2 = time.time()
    time_taken=t2-t1

```

```

        return render_template("showTimeRedis.html",time2 = time_taken, no =
n)

# root
@app.route("/", methods=['GET', 'POST'])
def index():
    return render_template('homePage.html')

@app.route('/redis')
def redis():
    return render_template('redis.html')

@app.route('/noredis')
def noredis():
    return render_template('noredis.html')

@app.route('/nquery')
def Nquery():
    return render_template('Nquery.html')

@app.route('/nqueryredis')
def NqueryRedis():
    return render_template('NqueryRedis.html')

if __name__ == '__main__':
    app.run(debug=True)

```

2) HTML file to display home page -> homepage.html

```

<!DOCTYPE html>

<html>
<head>
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/4.5.2/css/bootstrap.min.css">
    <style>
        h1{text-align: center;}
        div{text-align: center;}
    </style>
</head>
l<body style="background-color:#9eb1ff;">

```

```

<h1> Cloud Computing and Big Data</h1>
<h1>Assignment 2 </h1>
<h1 >Rudviq Bhavsar [1002091441] </h1>
<div style="background-color:white;width: 50%;margin-left: 25%;margin-top:
5%;">
  <br>
  <div>
    <a href="/">Home</a><br><br>
    <a href="/nquery"> Run query for N times(without redis)</a><br><br>

    <a href="/nqueryredis"> Run query for N times(with redis)</a><br><br>

    <a href="/noredis"> Search with Magnitude range (without
redis)</a><br><br>
    <a href="/redis"> Search with Magnitude range (with redis)</a><br><br>

  </div>
</body>
</html>

```

3) HTML file to accept input as number of iteration to run without redis

```

<!DOCTYPE html>
<html>
<head>
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/4.5.2/css/bootstrap.min.css">
  <style>
    h1{text-align: center;}
    h3{text-align: center;}
    div{text-align: center;}
  </style>
</head>
1<body style="background-color:#9eb1ff;">
  <h1> Cloud Computing and Big Data</h1>
  <h1>Assignment 3 </h1>
  <h1 >Rudviq Bhavsar [1002091441] </h1>
  <div style="background-color:white;width: 50%;margin-left: 25%;margin-top:
5%;">
    <br>

```



```

        <div>
            <a href="/">Home </a>
        </div>
    <br> <br>
    <div>
        <h3>without Redis</h3>
        <form method='POST' action="/nrun">
            No of iterations <input type="number" name="n"> <br><br>

            <input type="submit" style="margin-bottom: 90px;">
        </form>
    </div>

</body>
</html>

```

4) HTML file to display time taken to run random N queries without redis

```

<!DOCTYPE html>
<html>
<head>
    <meta name="viewport" content="width=device-width, initial-scale=1">
    <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/4.5.2/css/bootstrap.min.css">
    <style>
        h1{text-align: center;}
        h3{text-align: center;}
        div{text-align: center;}
    </style>
</head>
<body style="background-color:#9eb1ff;">
    <h1> Cloud Computing and Big Data</h1>
    <h1>Assignment 2 </h1>
    <h1 >Rudviq Bhavsar [1002091441] </h1>
    <div style="background-color:white;width: 50%;margin-left: 25%;margin-top: 5%;">
        <br>
        <div>
            <a href="/">Home </a>
        </div>
    <div>
        Time taken to execute the {{no}} queries is without redis {{time2}}
    </div>

```

```
</body>
</html>
```

5) Accept input from user as random N with redis

```
<!DOCTYPE html>
<html>
<head>
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/4.5.2/css/bootstrap.min.css">
  <style>
    h1{text-align: center;}
    h3{text-align: center;}
    div{text-align: center;}
  </style>
</head>
<body style="background-color:#9eb1ff;">
  <h1> Cloud Computing and Big Data</h1>
  <h1>Assignment 3 </h1>
  <h1 >Rudviq Bhavsar [1002091441] </h1>
  <div style="background-color:white;width: 50%;margin-left: 25%;margin-top: 5%;">
    <br>
    <div>
      <a href="/">Home </a>
    </div>
    <br> <br>
    <div>
      <h3>with Redis</h3>
      <form method='POST' action="/nrunredis">
        No of iterations <input type="number" name="n"> <br><br>

        <input type="submit" style="margin-bottom: 90px;">
      </form>
    </div>

  </body>
</html>
```

6) HTML file to display the result as time taken to run N queries with redis

```

<!DOCTYPE html>
<html>
<head>
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/4.5.2/css/bootstrap.min.css">
  <style>
    h1{text-align: center;}
    h3{text-align: center;}
    div{text-align: center;}
  </style>
</head>
<body style="background-color:#9eb1ff;">
  <h1> Cloud Computing and Big Data</h1>
  <h1>Assignment 3 </h1>
  <h1 >Rudviq Bhavsar [1002091441] </h1>
  <div style="background-color:white;width: 50%;margin-left: 25%;margin-top: 5%;">
    <br>
    <div>
      <a href="/">Home </a>
    </div>
  </div>
  <div>
    Time taken to execute the {{no}} queries is with redis {{time2}}<br>
  </div>
</body>
</html>

```

7) HTML file to accept input as magnitudes to display later without redis

```

<!DOCTYPE html>
<html>
<head>
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/4.5.2/css/bootstrap.min.css">
  <style>
    h1{text-align: center;}
    h3{text-align: center;}
    div{text-align: center;}
  </style>
</head>

```

```

<body style="background-color:#9eb1ff;">
  <h1> Cloud Computing and Big Data</h1>
  <h1>Assignment 2 </h1>
  <h1 >Rudviq Bhavsar [1002091441] </h1>
  <div style="background-color:white;width: 50%;margin-left: 25%;margin-top: 5%;">
    <br>

    <div>
      <a href="/">Home </a>
    </div>
  <br> <br>
  <div>
    <h3>Without Redis</h3>
    <form method='POST' action="/withoutredis">
      Mag 1 <input type="text" name="mg1"> <br><br>
      Mag 2 <input type="text" name="mg2"><br><br>
      No of iterations <input type="text" name="n"> <br><br>
      <input type="submit" style="margin-bottom: 90px;">
    </form>
  </div>

</body>
</html>

```

8) HTML file to accept input as magnitudes to display the time taken to run N queries with redis

```

<!DOCTYPE html>
<html>
<head>
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <link rel="stylesheet"
href="https://maxcdn.bootstrapcdn.com/bootstrap/4.5.2/css/bootstrap.min.css">
  <style>
    h1{text-align: center;}
    h3{text-align: center;}
    div{text-align: center;}
  </style>
</head>
<body style="background-color:#9eb1ff;">
  <h1> Cloud Computing and Big Data</h1>
  <h1>Assignment 2 </h1>

```

```
<h1>Rudviq Bhavsar [1002091441] </h1>
<div style="background-color:white;width: 50%;margin-left: 25%;margin-top: 5%;">
  <br>
  <div>
    <a href="/">Home </a>
  </div>
<br> <br>
<div>
  <h3>with Redis</h3>
<form method='POST' action="/withredis">
  Mag 1 <input type="text" name="mg1"> <br><br>
  Mag 2 <input type="text" name="mg2"><br><br>
  No of iterations <input type="text" name="n"> <br><br>
  <input type="submit" style="margin-bottom: 90px;">
</form>
</div>

</body>
</html>
```