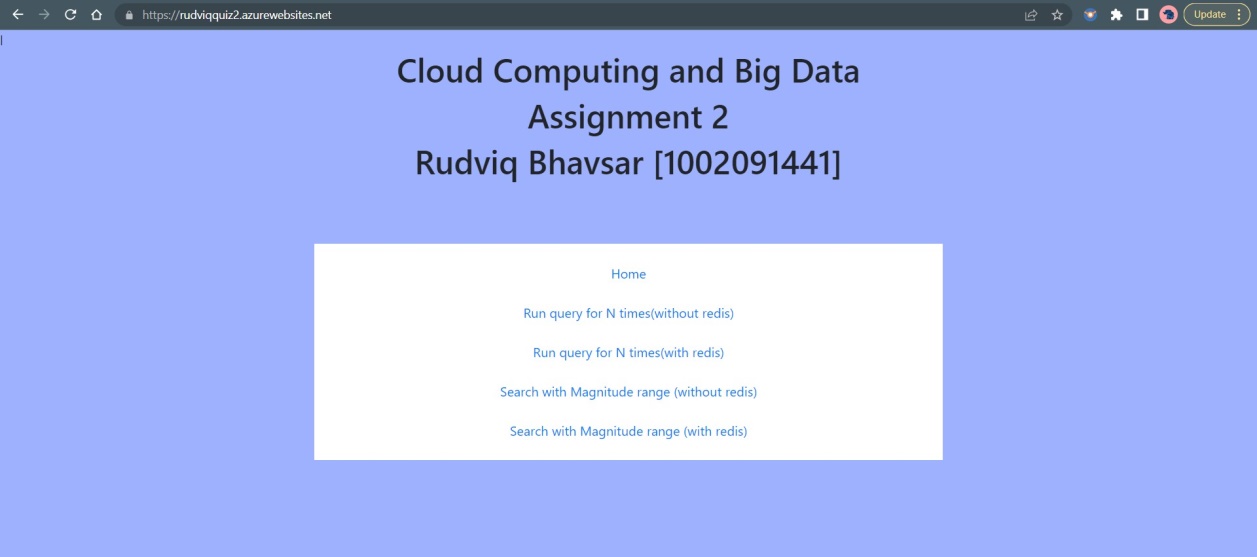
CSE 6332-002 Cloud Computing & Big Data

Name – Rudviq Sunil Bhavsar  
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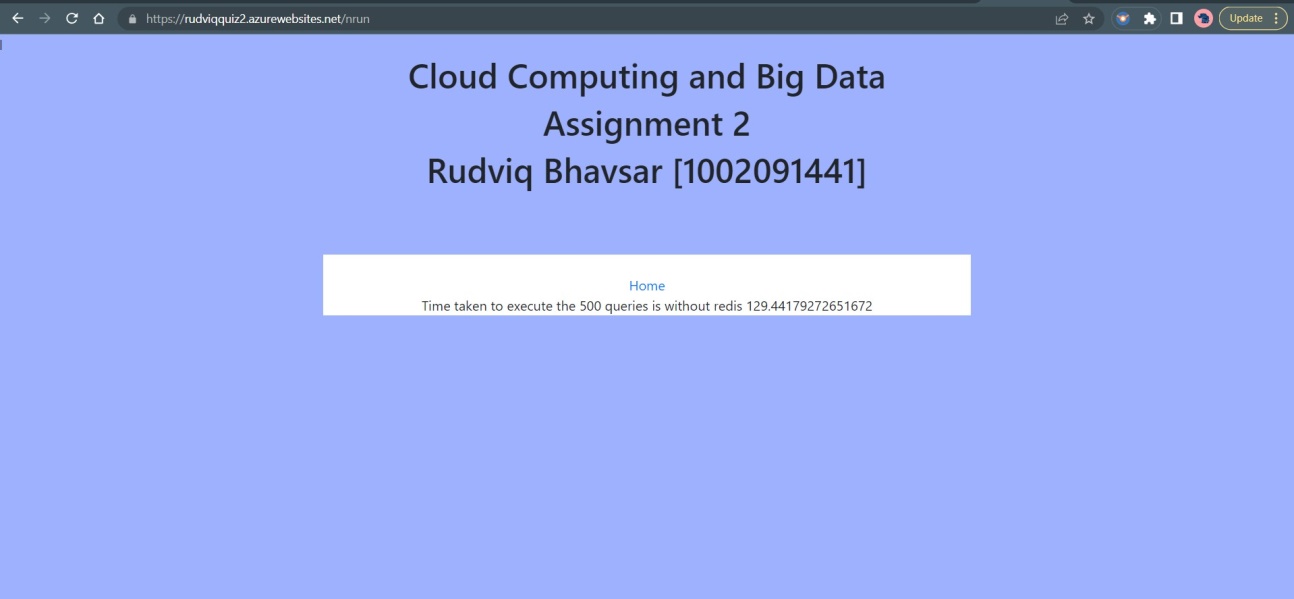
Assignment 3

CODE SNIPPETS-

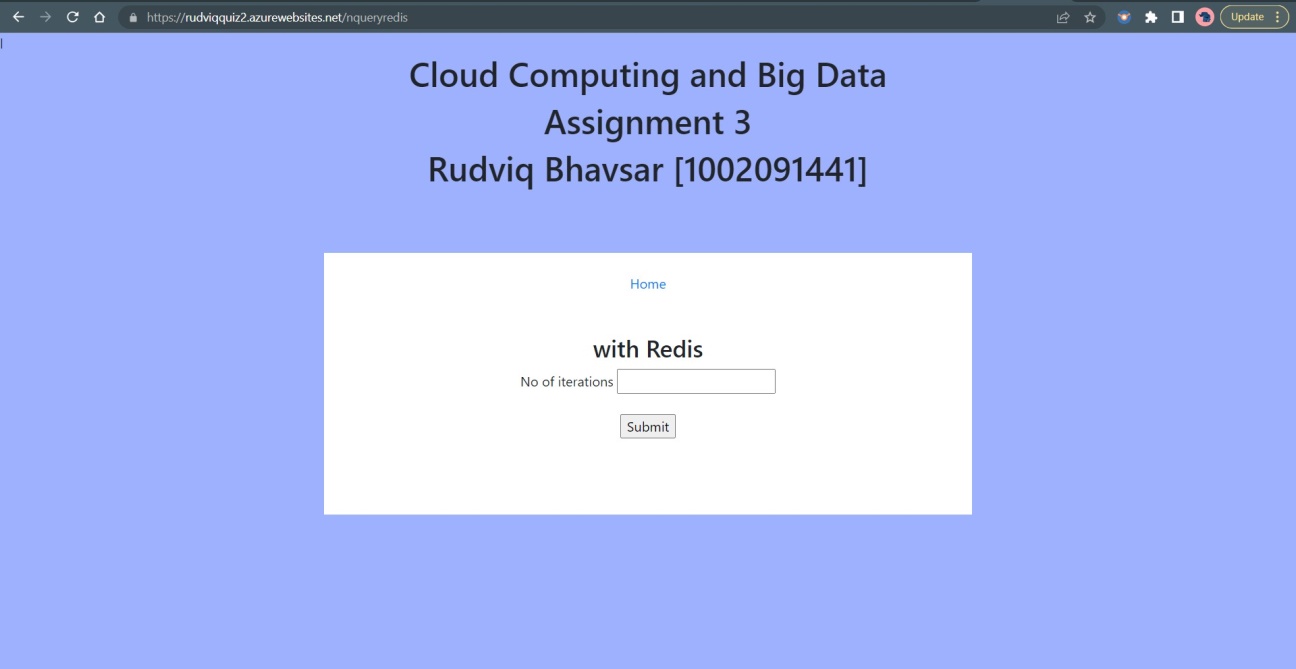
1. Home page

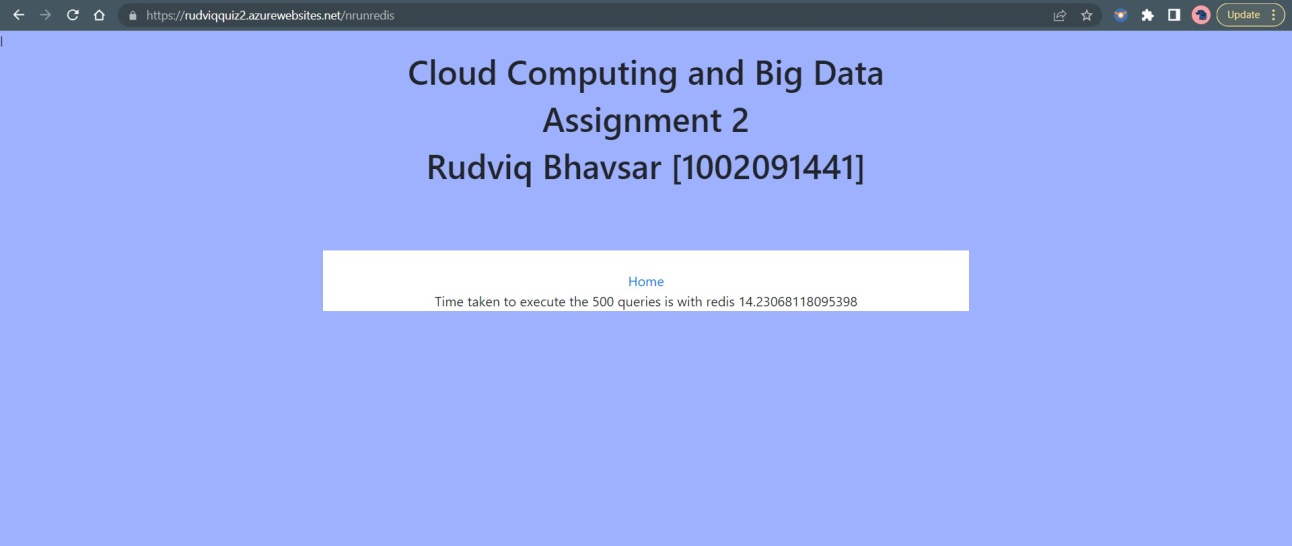


1. Page to run random N queries [without redis]

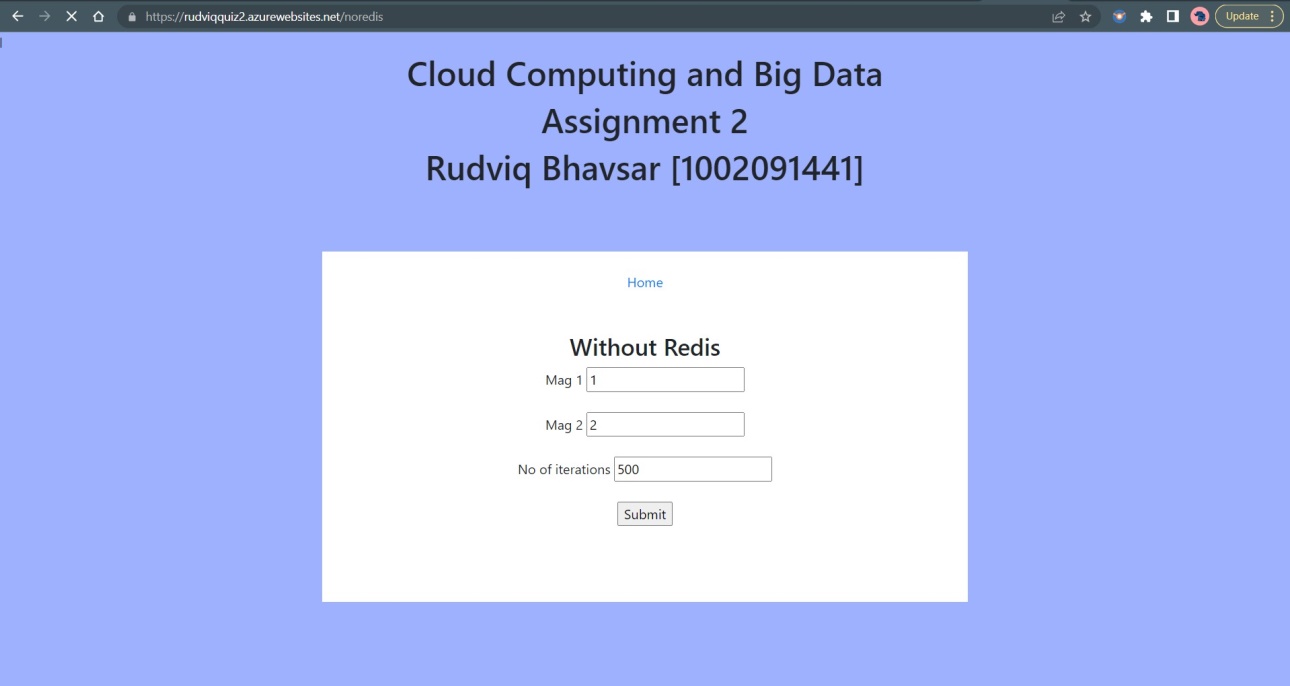


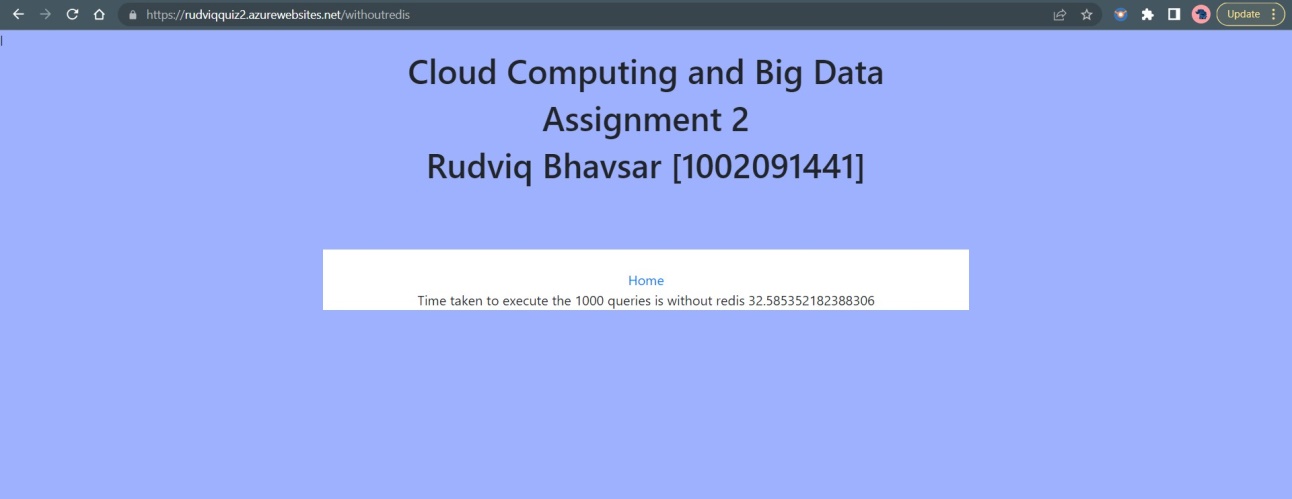
1. Page to run random N queries [with redis]



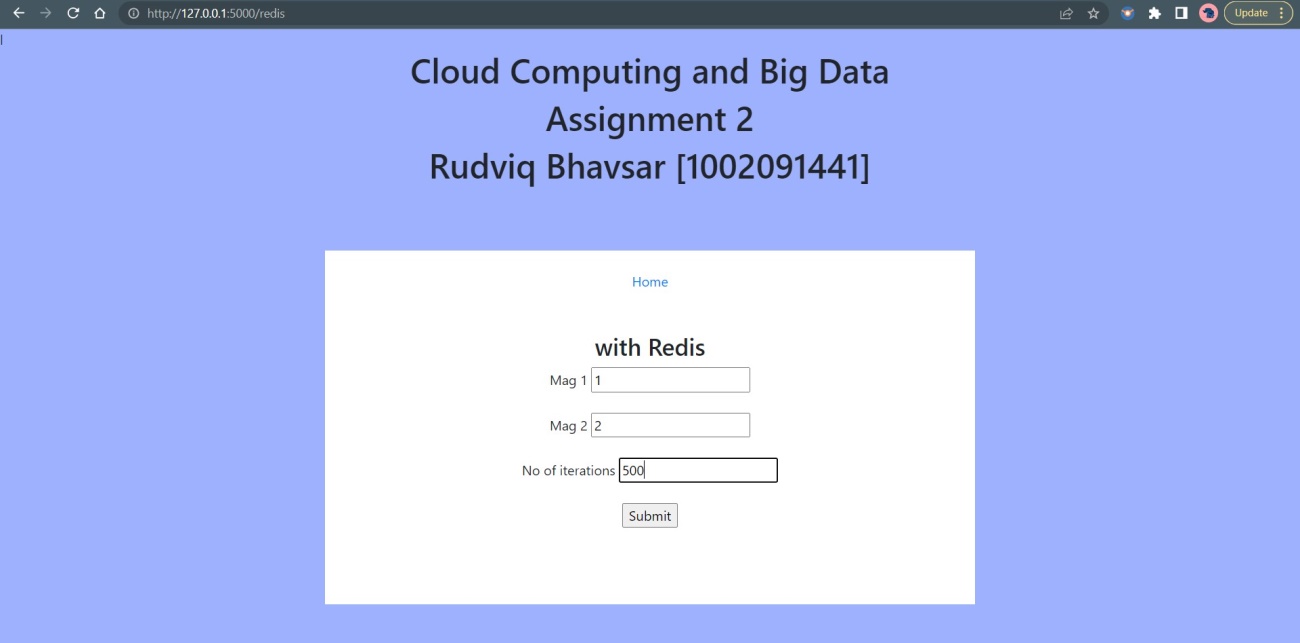


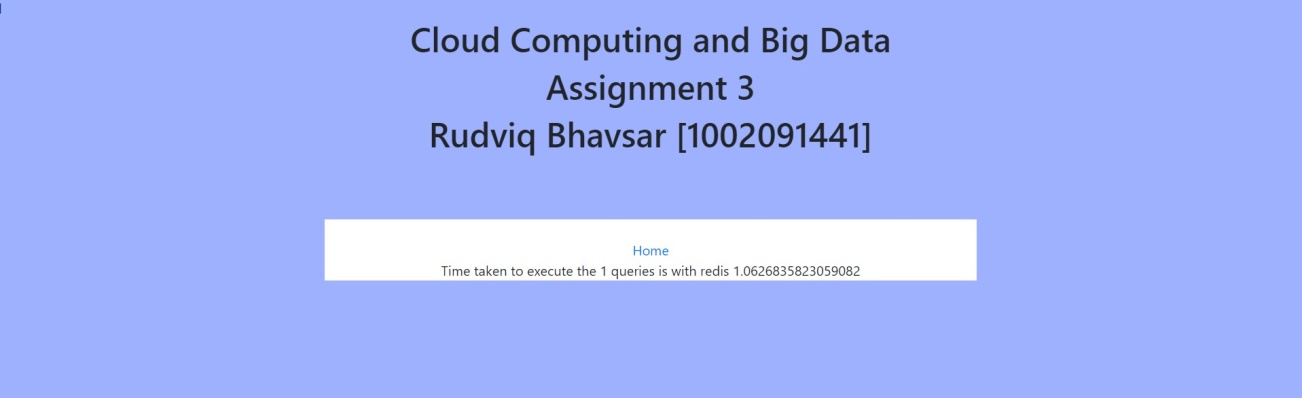
1. Page to run query to find magnitude between given range. Without Redis





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





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)

1. 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>

1. 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>

l<body style="background-color:#9eb1ff;">

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  <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>

1. 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;}

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  <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>

1. 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;}

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    <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>

1. 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;}

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  <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 with redis {{time2}}<br>

</div>

</body>

</html>

1. 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>

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  <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>

1. 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>

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    <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>