

INFSCI 2710 – Database Management – Fall 2018

Homework 4 – A Data-Driven Web Application

1. Use the settings in lab session to connect to your MySQL and phpmyadmin
2. For all tasks, use the **Yelp database (same as Homework #3)** to fulfill the requirements.
3. Name the Word document (or PDF as I recommended) with your answers as YourPittID_infsci2710_homework5.docx (pdf). In other words, if your Pitt ID (first part of your Pitt email) is abc123, your submission file should be named abc123_infsci2710_homework4.docx (pdf)
4. Zip both your code folder and document as YourPittID_infsci2710_homework4.zip
5. Submit the Zip file via CourseWeb

Task1 (20 points): Create two store procedure in your yelp_db database. The procedure should 1) reproduce the answer of “Task 6 in your Homework #4”; 2) Add a usage record to a newly created table – Social_Function_Usage (see the table below). The table will be inserted a new row ([id], [procedure name], [date]) while calling the stored procedure.

Field name	Primary Key	Data type	Is null?	Is auto-increment?
Id	yes	INT	No	yes
Call_Function	No	VARCHAR(20)	No	no
Date	No	Datetime	No	no

After I considered, I didn't think my task6 was good enough. So, I change my idea that I can search the best restaurants opened on the Sunday.

```
create table Social_Function_Usage(
id int(11) not null auto_increment,
CALL_Function varchar(20) not null,
Date datetime not null,
primary key (id)
);
DELIMITER &amp;
create procedure Best_Restaurants_In_City_Open_Sunday(in best_city varchar(20))
begin
select b.id,b.name from business b, category c, hours h where b.id = c.business_id
and b.city = best_city and c.category = 'Restaurants' and b.id = h.business_id and
h.hours like "%Sunday%" order by b.stars, b.review_count LIMIT 5;
```

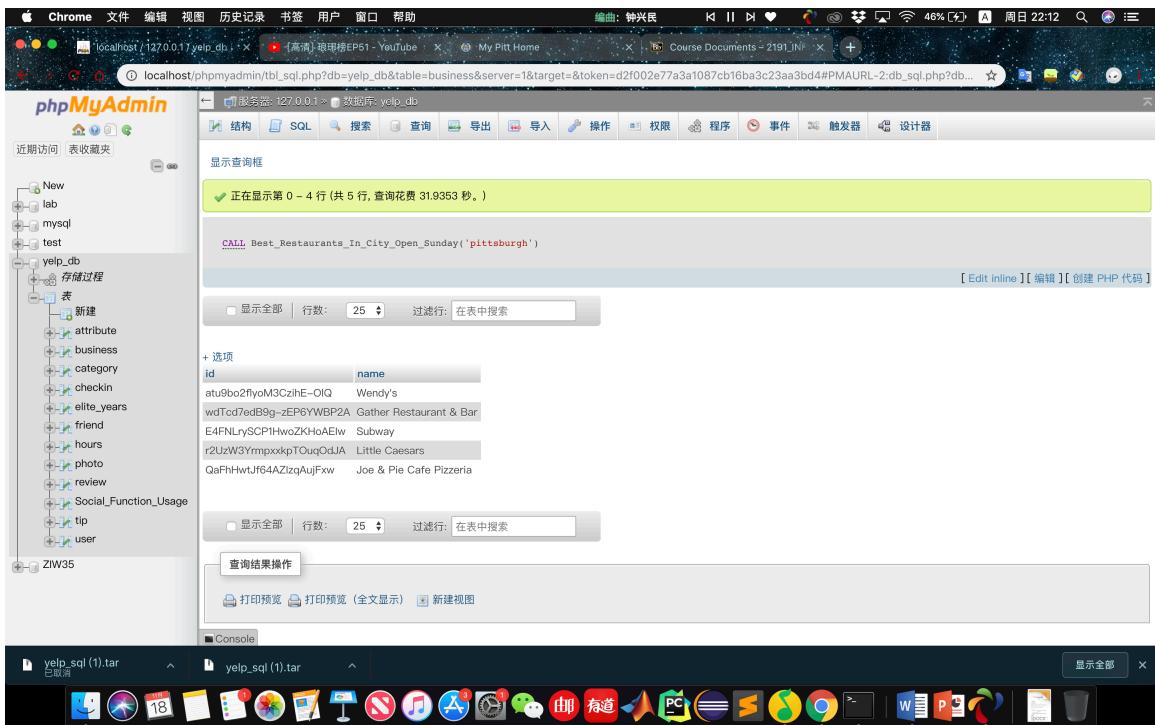
```

INSERT INTO Social_Function_Usage (CALL_Function, Date) VALUES
('Best_Restaurant_In_City_Open_Sunday', now());
END&&

```

DELIMITER ;

```
CALL Best_Restaurants_In_City_Open_Sunday('pittsburgh');
```



2. find the top 10 restaurants' location that have beef.

DELIMITER &&

```

create procedure Best_Restaurants_In_City_Own_Beef (in beef_city varchar(20))
begin
select b.id, b.name from business b, category c, photo p where b.id =
c.business_id AND p.business_id=b.id and b.city = beef_city and c.category =
'restaurants' and p.caption LIKE '%牛肉%' limit 10;

```

```

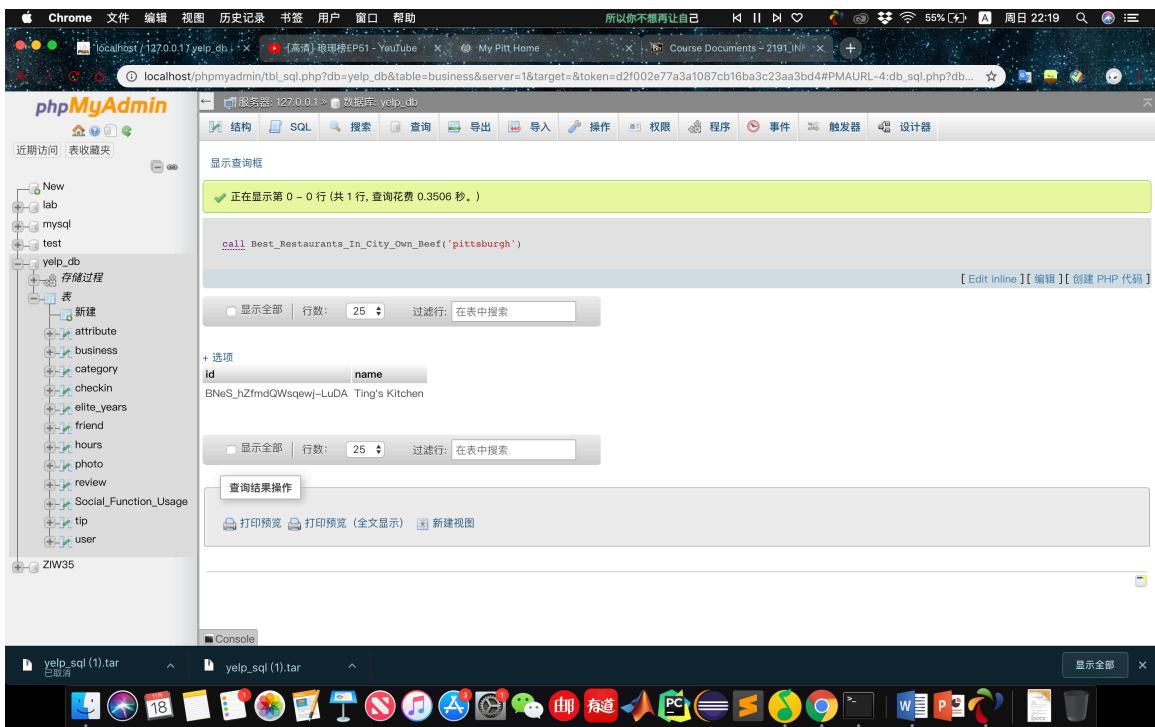
insert into Social_Function_Usage(Call_function, Date) values
('Best_Restaurants_In_City_Own_Beef', now());

```

end&&

DELIMITER ;

```
call Best_Restaurants_In_City_Own_Beef('pittsburgh');
```



Task 2 (20 points): Write a PHP application to call the two stored procedures. You need to itemize all return results. The user should be able to click and inspect the details. For example, in the sample social function of ‘top restaurant of the day’, a user can 1) browse the restaurants by different given date; 2) click the link in the browsing page to inspect the detail of the restaurant.

<html>

 <body>

 <h2>Stored Procedure</h2>

 <form method="POST" action="task2.php">

```

        <table width='600px' border='1px'>
            <tr>
                <th>Call_Function</th>
                <th>Input</th>
                <th>Action</th>
            </tr>
            <tr>
                <td>Best_Restaurants_In_City_Open_Sunday</td>
                <td>
                    City: <input type="text" name="city1">
                </td>
                <td>

```

```
        <input type="submit" name="submit"
value="submit1">
        </td>
    </tr>
    <tr>
        <td>Best_Restaurants_In_City_Own_Beef </td>
        <td>
            City: <input type="text" name="city2"></td>
        <td>
            <input type="submit" name="submit"
value="submit2">
        </td>
    </tr>

</table>
```

```
</form>
```

```
<?php
    $servername = "localhost";
    $username = "root";
    $password = "mysql";
    $dbname = "yelp_db";
    $conn = new mysqli($servername, $username, $password,
$dbname);
```

```
        // Check connection
        if ($conn->connect_error) {
            die("Connection failed: " . $conn->connect_error);
        } echo "<p><font color=\"red\">Connected
successfully</font></p>";
```

```
$city1 = $_POST["city1"];
$city2 = $_POST["city2"];
$submit = $_POST["submit"];
```

```
if($submit == 'submit1'){


```

```

$sql = "call
Best_Restaurants_In_City_Open_Sunday('".$city1"')";
$result = $conn->query($sql);
//echo("City: ".$city);

if($result)
    echo "<table border=1px>";

while($row = mysqli_fetch_array($result)){

    $id = $row['id'];
    echo "<tr>";

    echo "<td><a
href=./detail.php?id=$id>Detail</a></td>";

    echo "<td>{$row['name']}</td>
<td>{$row['hours']}</td>";

    echo "</tr>";

}

echo "</table>";

}

if($submit == 'submit2'){
    $sql = "Best_Restaurants_In_City_Open_Sunday('".$city")";
    $result = $conn->query($sql);

    echo("City:." ".$city);

;

while($row = mysqli_fetch_array($result)){

    $id = $row['id'];

    echo "<tr>";



```

```
echo "<td><a href=./detail.php?id=$id>Detail</a></td>";
echo "<td>{$row['name']}</td>
      <td>{$row['text']}</td>";
echo "</tr>";
}

}

?>

</body>
</html>

<html>
  <head>

    </head>
  <body>

    <?php

      $servername = "localhost";
      $username = "root";
      $password = "mysql";
      $database = "yelp_db";
      $conn = new mysqli($servername, $username, $password,
$database);

      if($conn->connect_error){
        die("Connection failed: " . $conn->connect_error);
      }
      echo "<p><font color=\"red\">Connected
successfully</font></p>";
    
```

```
$id = $_GET['id'];
$sql = "select * from business where id='".$id."'";
$result=$conn->query($sql);
if($result)
    echo "<table border=1px>
        <td>name</td>
        <td>neighborhood</td>
        <td>address</td>
        <td>city</td>
        <td>state</td>
        <td>postal_code</td>
        <td>latitude</td>
        <td>longitude</td>
        <td>review_count</td>
        <td>stars</td>";
while($row = $result->fetch_assoc())
{
    echo "<tr>";
    echo "<td>$row[name]</td>
        <td>$row[address]</td>
        <td>$row[city]</td>
        <td>$row[state]</td>
        <td>$row[postal_code]</td>
        <td>$row[latitude]</td>
        <td>$row[longitude]</td>
        <td>$row[review_count]</td>
        <td>$row[stars]</td>";
    echo "</tr>";
}
echo "</table>";

mysqli_close($conn);

?>

</body>
</html>
```



Stored Procedure

Call_Function	Input	Action
Best_Restaurants_In_City_Open_Sunday	City:	submit1
Best_Restaurants_In_City_Own_Beef	City:	submit2

Connected successfully

Detail	Wendy's
Detail	Gather Restaurant & Bar
Detail	Little Caesars
Detail	Subway
Detail	Joe & Pie Cafe Pizzeria



Connected successfully

name	neighborhood	address	city	state	postal_code	latitude	longitude	review_count	stars
Gather Restaurant & Bar	164 Fort Couch Rd	Pittsburgh	PA	15241	40.3457	-80.0528	3	1.5	

Task 3 (25 points): Write a search function (search.php) so that the user can search (filter) the businesses through the review text in the Yelp data. The user should be able to search the businesses with a specific keyword, e.g., to explore the businesses with the keyword 'awesome' in their reviews. You need to itemize all return results. The user should be able to click and inspect the details.

```

<html>
<body>
    <form method = 'POST' action = '/search.php'>
        <h1> Search Function for 1 or 2 keywords </h1>
        Keyword1 : <input type="text" name="Kw1">
        Keyword2 : <input type="text" name="Kw2">
        <input type="submit" name="submit" value="submit">

    </form>
    <?php
        $servername = "localhost";
        $username = "root";
        $password = "mysql";
        $dbname = "yelp_db";
        $conn = new mysqli($servername, $username, $password,
        $dbname);

        // Check connection
        if ($conn->connect_error) {
            die("Connection failed: " . $conn->connect_error);
        } echo "<p><font color=\"red\">Connected
successfully</font></p>";

        $key1 = $_POST["Kw1"];
        $key2 = $_POST["Kw2"];
        $submit = $_POST["submit"];

        if($submit == 'submit'){

            if (empty($key1) && empty($key2)){

                echo "Input should not be empty";
            }

            echo "<table width='600px' border='1px'>";

            echo "<th>Operation</th>";

            echo "<th>Business Name</th>
                  <th>Review</th>";

            $result = $conn ->query(
                select b.id, b.name, r.text
                from business b, review r
                where b.id = r.business_id and r.text like
                '%$key1%' and r.text like '%$key2%'


```

```

        limit 10 ");

while($row = mysqli_fetch_array($result)){

    echo "<tr>";
    $id = $row['id'];

    echo "<td><a
href=./detail.php?id=$id>Detail</a></td>";

    echo "    <td>{$row['name']}</td>
    <td>{$row['text']}</td>";

    echo "</tr>";

}

$result->free();
}
?>

</body>
</html>

```



Search Function for 1 or 2 keywords

Keyword1 : Keyword2 : submit

Connected successfully

Operation	Business Name	Review
Detail	Citizens Kitchen and Bar	I don't know why this place only has 3 stars but it's been a lifesaver for me! If you're staying at the Mandalay Bay and Looking to eat semi-healthy, not spend too much money and not looking to travel far, this place is perfect. The car is open 24 hours and they offer salads, sandwiches, wraps and smoothies. A much better alternative to late night French fries or the \$19 room service Cobb salad before service charge and gratuity. The staff was friendly except when I asked for some hot sauce to go, one chick said not a word to me and slammed a bottle of Tabasco sauce on the counter in front of me without giving me a Togo Ramekin. I was tempted to walk away with the bottle. But I didn't. My tuna salad wrap was \$11 and some change and pretty hearty. I saved the other half for later.
		I purchased a package of 10 spray-tans through Groupon on December 13, 2011. I was very excited because I have been to other Hollywood Tans locations in the past and been pleased with the experience. On my first visit, I attempted to present the Groupon using the Groupon app on my iPhone. I was rudely told me that the phone screen would not suffice and that I would have to print the coupon and physically present it to them. I returned the next morning with the printed copy in hand. The desk attendant took the paper and entered my information into the computer. She then told me that I would have

The screenshot shows a Windows desktop environment with a taskbar at the bottom. Three tabs are open in a browser window: 'localhost / 127.0.0.1 / yelp_db', 'localhost/detail.php?id=dwdTc...', and 'localhost/detail.php?id=Y-S2...'. The central tab displays a table with the following data:

name	neighborhood	address	city	state	postal_code	latitude	longitude	review_count	stars
Citizens Kitchen and Bar	3950 Las Vegas Blvd S	Las Vegas	NV	89119	36.0917	-115.177	810	3	

Task 4 (25 points): Write a data function (data.php) to generate a CSV for the given Bar Chart visualization (viz.php), so the user can inspect the Yelp data distribution of the following criteria:

1. The distribution of monthly review count in 2017.
2. The distribution of annual review count in all years.
3. The distribution of monthly review count in 2017 of a certain business.

Hint:

1. Check <https://github.com/hymanct/infsci2710/tree/master/SampleCode/Visualization> for both viz.php and data.php files.
2. Check <https://bl.ocks.org/mbostock/3885304> for original example
3. You should modify the data.php
4. You should not modify the viz.php (besides line 70-77)

1.
SELECT MONTH(date) as MONTH, COUNT(id) as COUNT FROM review WHERE YEAR(date)=2017 GROUP BY MONTH(date) ORDER BY MONTH(date);

The screenshot shows the phpMyAdmin interface for a database named 'yelp_db'. The left sidebar lists tables such as 'New', 'lab', 'mysql', 'test', 'yelp_db', and 'ZIW35'. The 'review' table is selected. A SQL query is run:

```
SELECT MONTH(date) AS MONTH, COUNT(id) AS COUNT FROM review WHERE YEAR(date)=2017 GROUP BY MONTH(date) ORDER BY MONTH(date)
```

The results show the count of reviews per month in 2017:

MONTH	COUNT
1	90722
2	86751
3	98636
4	98938
5	101673
6	102172
7	113934
8	109166
9	100731
10	98711
11	93230
12	34394

2.

SELECT year(date) as YEAR, COUNT(id) as COUNT from review GROUP by year(date) ORDER BY year(date);

The screenshot shows the phpMyAdmin interface for a database named 'yelp_db'. The left sidebar lists tables such as 'New', 'lab', 'mysql', 'test', 'yelp_db', and 'ZIW35'. The 'review' table is selected. A SQL query is run:

```
SELECT year(date) AS YEAR, COUNT(id) AS COUNT from review GROUP by year(date)
```

The results show the count of reviews per year:

YEAR	COUNT
2004	14
2005	870
2006	5669
2007	23020
2008	61553
2009	98288
2010	187073
2011	290933
2012	350381
2013	472595
2014	678351
2015	911487
2016	1052917
2017	1128518

3.

Viz.php

<!DOCTYPE html>

```

<meta charset="utf-8">
<style>
.bar {
  fill: steelblue;
}
.bar:hover {
  fill: brown;
}
.axis--x path {
  display: none;
}
</style>
<svg width="960" height="500"></svg>
<script src="https://d3js.org/d3.v4.min.js"></script>
<script>
var svg = d3.select("svg"),
  margin = {top: 20, right: 20, bottom: 30, left: 40},
  width = +svg.attr("width") - margin.left - margin.right,
  height = +svg.attr("height") - margin.top - margin.bottom;
var x = d3.scaleBand().rangeRound([0, width]).padding(0.1),
  y = d3.scaleLinear().rangeRound([height, 0]);
var g = svg.append("g")
  .attr("transform", "translate(" + margin.left + "," + margin.top + ")");
d3.tsv("./data.php?action=<?php echo $_GET[action];?>& info=<?php echo
$_POST["business_name"];?>", function(d) {
  d.frequency = +d.frequency;
  return d;
}, function(error, data) {
  if (error) throw error;
  x.domain(data.map(function(d) { return d.letter; }));
  y.domain([0, d3.max(data, function(d) { return d.frequency; })]);
  g.append("g")
    .attr("class", "axis axis--x")
    .attr("transform", "translate(0," + height + ")");
    .call(d3.axisBottom(x));
  g.append("g")
    .attr("class", "axis axis--y")
    .call(d3.axisLeft(y).ticks(10, "%"));
  .append("text")
    .attr("transform", "rotate(-90)");
    .attr("y", 6)
    .attr("dy", "0.71em")
    .attr("text-anchor", "end");
    .text("Frequency");
  g.selectAll(".bar")
    .data(data)

```

```

.enter().append("rect")
    .attr("class", "bar")
    .attr("x", function(d) { return x(d.letter); })
    .attr("y", function(d) { return y(d.frequency); })
    .attr("width", x.bandwidth())
    .attr("height", function(d) { return height - y(d.frequency); }));
});
</script>
<br>
<a href="../viz.php?action=monthly_review_in_2017">1. The distribution of
monthly review count in 2017</a> <br>
<a href="../viz.php?action=annual_review_in_all_years">2. The distribution of annual
review count in all years.</a> <br>

```

<a>3. The distribution of monthly review count in 2017 of a certain
business.


```

<form method="POST"
action="../viz.php?action=monthly_review_in_2017_for_certain_business">
    Specific business name: <input type="text" name="business_name">
    <input type="submit" name="submit" value="submit">
</form>

```

```

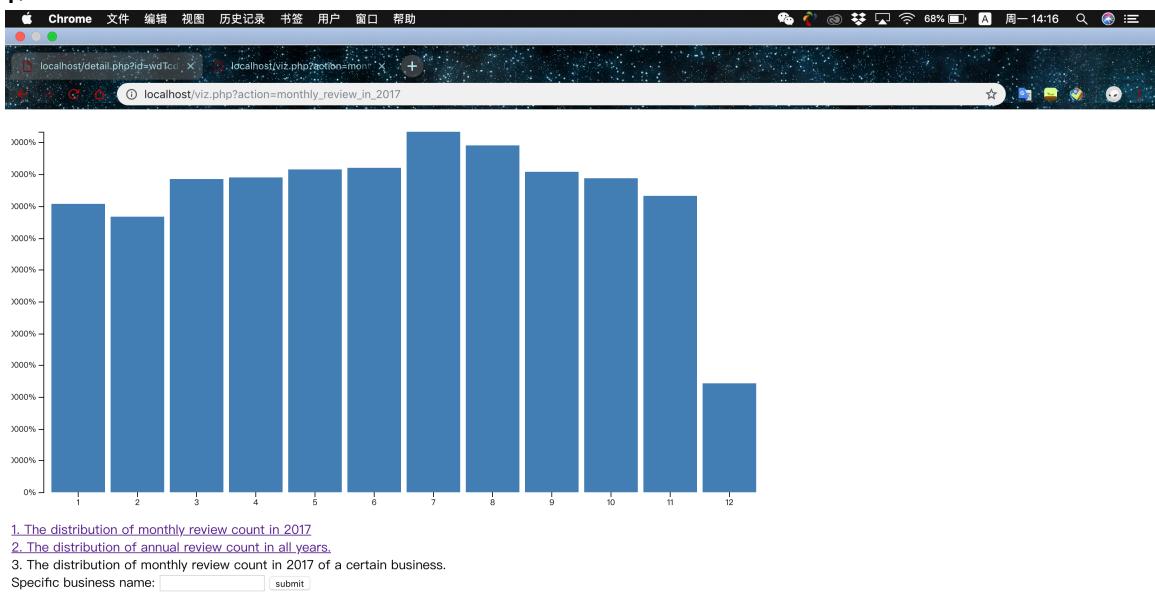
Data.php
<?php
$servername = "localhost";
    $username = "root";
    $password = "mysql";
    $database = "yelp_db";
$conn = new mysqli($servername, $username, $password, $database);
// Check connection
if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}
$sql = "";
$spec_business = $_GET[info];
switch($_GET[action]){
    case 'monthly_review_in_2017':
        $sql = "select MONTH(date) as n, COUNT(id) as t FROM review WHERE
YEAR(date)=2017 GROUP BY n ORDER BY MONTH(date);";
        break;
    case 'annual_review_in_all_years':
        $sql = "select year(date) as n, COUNT(id) as t from review GROUP by n;";
        break;
    case 'monthly_review_in_2017_for_certain_business':

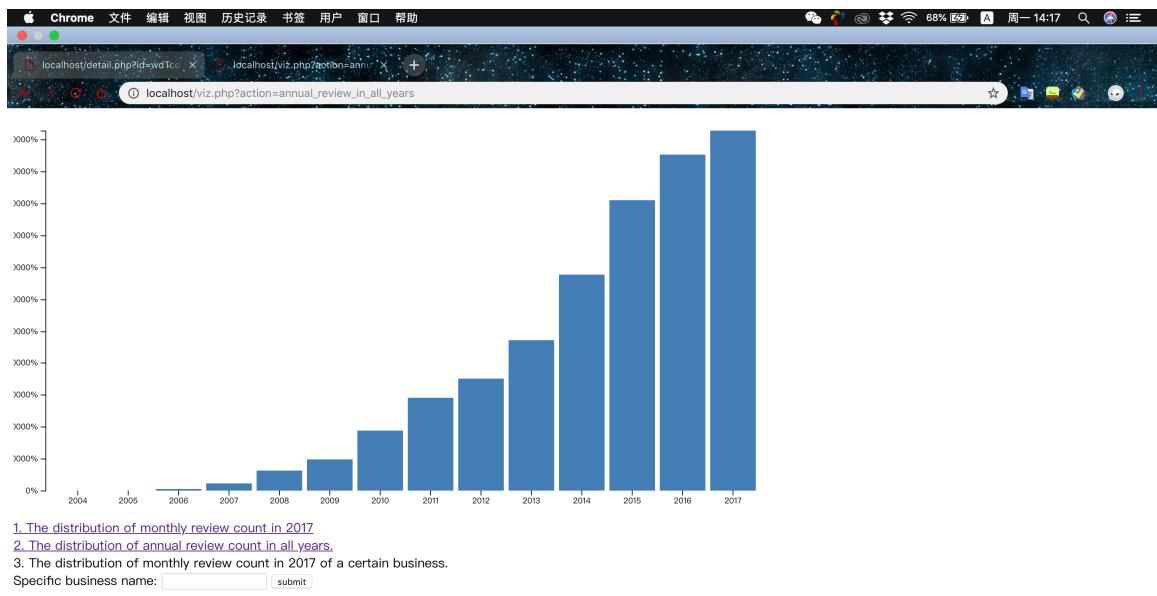
```

```

$sql = " select monthname(r.date) as n, count(r.id) as t from review r , business
b WHERE r.business_id = b.id AND year(r.date) = 2017 and b.name=
".$spec_business." group by n order by month(r.date);";
break;
}
$result = $conn->query($sql);
$output = "letter\tfrequency\n";
if ($result){
    while($row = $result->fetch_assoc())
    {
        $output .= $row['n']."\t".$row['t']."\n";
    }
}
$result->free();
echo $output;
// Close connection
mysqli_close($conn);
?>

```





Task 5 (10 Point): Write a portal to integrate all the functions in task 1,2,3,4, so a user can visit the page and use all the proposed functions. [Hint: you are free to propose new pages/functions if necessary.]

<!DOCTYPE html>

<html>

<head>

```

<title>portal</title>
</head>
<body>
    TASK2.
    <h2>Stored Procedure</h2>

    <form method="POST" action="task2.php">

        <table width='600px' border='1px'>
            <tr>
                <th>Call_Function</th>
                <th>Input</th>
                <th>Action</th>
            </tr>
            <tr>
                <td>Best_Restaurants_In_City_Open_Sunday</td>
                <td>
                    City: <input type="text" name="city1">
                </td>
                <td>
                    <input type="submit" name="submit"
value="submit1">
                </td>
            </tr>
            <tr>
                <td>Best_Restaurants_In_City_Own_Beef </td>
                <td>
                    City: <input type="text" name="city2"></td>
                <td>
                    <input type="submit" name="submit"
value="submit2">
                </td>
            </tr>
        </table>

    </form>
    TASK3.
    <form method = 'POST' action = '/search.php'>
        <h1> Search Function for 1 or 2 keywords </h1>
        Keyword1 : <input type="text" name="Kw1">
        Keyword2 : <input type="text" name="Kw2">
        <input type="submit" name="submit" value="submit">

    </form>
    TASK4.

```

```
<br>
<a href=".//viz.php?action=monthly_review_in_2017">1. The distribution of
monthly review count in 2017</a> <br>
<a href=".//viz.php?action=annual_review_in_all_years">2. The distribution of annual
review count in all years.</a> <br>

<a>3. The distribution of monthly review count in 2017 of a certain
business.</a><br>

<form method="POST"
action=".//viz.php?action=monthly_review_in_2017_for_certain_business">
  Specific business name: <input type="text" name="business_name">
  <input type="submit" name="submit" value="submit">

</form>
```

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

