CMPT 310:
Laboratory 3

Mashups: SQL & Google Charts

View 1: Piano Technician Organizational Chart

Functionality	5	/5
SQL Queries	5	/5

View 2: Top Piano Technicians

Functionality	5	/5
SQL Queries	5	/5

View 3: Piano Model Sales by Year

Functionality	4	/5
SQL Queries	3	/5

TOTAL	25	/30

```
Starting Docker Containers...
--------------------------------------------------------------------------------
Creating network "asafari_default" with the default driver
Creating cmpt310_db ...
Creating cmpt310_db ... done
Creating cmpt310_www ...
Creating cmpt310_www ... done

--------------------------------------------------------------------------------
```

```
================================================================================
orgJSON.php Tests
================================================================================
--------------------------------------------------------------------------------
                                                                         Test #0
--------------------------------------------------------------------------------
curl http://localhost:8080/orgJSON.php
--------------------------------------------------------------------------------

[
  [
    "Name/Position",
    "Supervisor EmployeeID",
    "EmployeeID"
  ],
  [
    {
      "v": "1000",
      "f": "Lisandro McAlister<div class=\"title\">Chief Technician</div>"
    },
    null,
    "1000"
  ],
  [
    {
      "v": "1001",
      "f": "Branislav Koole<div class=\"title\">Technician</div>"
    },
    "1013",
    "1001"
  ],
  [
    {
      "v": "1002",
      "f": "Vitomir Capitani<div class=\"title\">Technician</div>"
    },
    "1007",
    "1002"
  ],
  [
    {
      "v": "1003",
      "f": "Enitan Mertens<div class=\"title\">Technician</div>"
    },
    "1008",
    "1003"
  ],
  [
    {
...
```

```
================================================================================
technicianJSON.php Tests
================================================================================
--------------------------------------------------------------------------------
                                                                        Test #0
--------------------------------------------------------------------------------
curl http://localhost:8080/technicianJSON.php?n=5
--------------------------------------------------------------------------------

[
  [
    "Technician",
    "Number of Pianos Inspected"
  ],
  [
    "Zahide Johnston",
    35
  ],
  [
    "Adeline Lincoln",
    31
  ],
  [
    "Gawahir Parrino",
    30
  ],
  [
    "Lisandro McAlister",
    27
  ],
  [
    "Shahzad Miller",
    27
  ]
]

--------------------------------------------------------------------------------
                                                                        Test #1
--------------------------------------------------------------------------------
curl http://localhost:8080/technicianJSON.php?n=1
--------------------------------------------------------------------------------

[
  [
    "Technician",
    "Number of Pianos Inspected"
  ],
  [
    "Zahide Johnston",
    35
  ]
]
```

```
--------------------------------------------------------------------------------
                                                                        Test #2
--------------------------------------------------------------------------------
curl http://localhost:8080/technicianJSON.php?n=20
--------------------------------------------------------------------------------

[
  [
    "Technician",
    "Number of Pianos Inspected"
  ],
  [
    "Zahide Johnston",
    35
  ],
  [
    "Adeline Lincoln",
    31
  ],
...
```

```
================================================================================
pianoJSON.php Tests
================================================================================
--------------------------------------------------------------------------------
                                                                        Test #0
--------------------------------------------------------------------------------
curl http://localhost:8080/pianoJSON.php?n=1&start=2017&end=2022
--------------------------------------------------------------------------------

YOUR OUTPUT                          | EXPECTED OUTPUT
--------------------------------------------------------------------------------
[                                      [
  [                                      [
    "Year",                                "Year",
    "Bösendorfer"                          "Bösendorfer"
  ],                                     ],
  [                                      [
    2017                               |     "2017",
                                       >     3
  ],                                     ],
  [                                      [
    2017,                              |     "2018",
    2018,                              |     5
    "5"                                <
  ],                                     ],
  [                                      [
    2017,                              |     "2019",
    2018,                              |     4
    "5",                               <
    2020                               <
  ],                                     ],
  [                                      [
    2017,                              |     "2020",
    2018,                              |     7
    "5",                               |   ],
    2020,                              |   [
    2021,                              |     "2021",
    "6"                                |     6
                                       >   ],
                                       >   [
                                       >     "2022",
                                       >     6
  ]                                      ]
]                                      ]
```

```
--------------------------------------------------------------------------------
                                                                        Test #1
--------------------------------------------------------------------------------
curl http://localhost:8080/pianoJSON.php?n=5&start=2017&end=2022
--------------------------------------------------------------------------------

YOUR OUTPUT                           | EXPECTED OUTPUT
--------------------------------------------------------------------------------
[                                       [
  [                                       [
    "Year",                                 "Year",
    "Bösendorfer",                          "Bösendorfer",
    "Walter",                               "Walter",
    "Bechstein",                            "Bechstein",
    "Kawai",                                "Kawai",
    "Baldwin"                               "Baldwin"
  ],                                      ],
  [                                       [
    2017                                |     "2017",
                                        >     3,
                                        >     5,
                                        >     9,
                                        >     1,
                                        >     5
  ],                                      ],
  [                                       [
    2017,                               |     "2018",
    2018,                               |     5,
    "5",                                |     5,
    2020,                               |     2,
    "2",                                |     3,
    2022,                               |     2
    "3",                                |   ],
    2024,                               |   [
    "0",                                |     "2019",
    2026,                               |     4,
    "0"                                 |     7,
                                        >     2,
                                        >     6,
                                        >     4
                                        >   ],
                                        >   [
                                        >     "2020",
                                        >     7,
                                        >     2,
                                        >     6,
                                        >     5,
                                        >     2
                                        >   ],
                                        >   [
                                        >     "2021",
                                        >     6,
                                        >     3,
                                        >     4,
                                        >     2,
                                        >     10
                                        >   ],
                                        >   [
                                        >     "2022",
                                        >     6,
                                        >     4,
                                        >     3,
                                        >     8,
                                        >     1
  ]                                       ]
]                                       ]
```

order is good, but data -3

Test #2

```
curl http://localhost:8080/pianoJSON.php?n=20&start=2017&end=2022
```

YOUR OUTPUT	EXPECTED OUTPUT
[	[
[	[
"Year",	"Year",
"Bösendorfer",	"Bösendorfer",
"Walter",	"Walter",
"Bechstein",	"Bechstein",
"Kawai",	"Kawai",
"Baldwin",	"Baldwin",
"Stuart & Sons",	"Stuart & Sons",
"Steinway & Sons",	"Steinway & Sons",
"Fazioli",	"Fazioli",
"Yamaha",	"Yamaha",
"Mason & Hamlin"	"Mason & Hamlin"
],	],
[	[
2017	"2017",
	3,
	5,
	9,
	1,
	5,
	1,
	9,
	3,
	4,
	3
],	],
[	[
2017,	"2018",
2018,	5,
"5",	5,
2020,	2,
"2",	3,
2022,	2,
"3",	5,
2024,	5,
"0",	5,
2026,	4,
"0",	4
2028,	],
"0",	[
2030,	"2019",
"0",	4,
2032,	7,
"0",	2,
2034,	6,
"0",	4,
2036,	3,
"0"	2,
	1,
	2,
	1
	],
	[
	"2020",
	7,
	2,
	6,
	5,
	2,

```
>      7,
>      3,
>      1,
>      2,
>      1
>    ],
>    [
>      "2021",
>      6,
>      3,
>      4,
>      2,
>      10,
>      4,
>      2,
>      3,
>      2,
>      3
>    ],
>    [
>      "2022",
>      6,
>      4,
>      3,
>      8,
>      1,
>      5,
>      3,
>      8,
>      5,
>      4
    ]
  ]
]
```

```
--------------------------------------------------------------------------------
                                                                        Test #3
--------------------------------------------------------------------------------
curl http://localhost:8080/pianoJSON.php?n=1&start=1990&end=1992
--------------------------------------------------------------------------------

YOUR OUTPUT                          | EXPECTED OUTPUT
--------------------------------------------------------------------------------
[                                      [
  [                                      [
    "Year",                                "Year",
    "Bösendorfer"                          "Bösendorfer"
  ],                                     ],
  [                                      [
    1990                               |     "1990",
                                       >     0
  ],                                     ],
  [                                      [
    1990,                              |     "1991",
    1991,                              |     0
    "0"                                |   ],
                                       >   [
                                       >     "1992",
                                       >     0
  ]                                      ]
]                                      ]
```

Test #4

```
curl http://localhost:8080/pianoJSON.php?n=20&start=2023&end=2023
```

YOUR OUTPUT	EXPECTED OUTPUT
[	[
[	[
"Year",	"Year",
"Bösendorfer",	"Bösendorfer",
"Walter",	"Walter",
"Bechstein",	"Bechstein",
"Kawai",	"Kawai",
"Baldwin",	"Baldwin",
"Stuart & Sons",	"Stuart & Sons",
"Steinway & Sons",	"Steinway & Sons",
"Fazioli",	"Fazioli",
"Yamaha",	"Yamaha",
"Mason & Hamlin"	"Mason & Hamlin"
],	],
[	[
2023	"2023",
],	1,
[	1,
2023,	0,
2024,	1,
"0",	1,
2026,	0,
"0",	0,
2028,	0,
"0",	1,
2030,	0
"0",	<
2032,	<
"0",	<
2034,	<
"0",	<
2036,	<
"0",	<
2038,	<
"0",	<
2040,	<
"0",	<
2042,	<
"0"	<
]	]
]	]

```
--------------------------------------------------------------------------------
                                                                        Test #5
--------------------------------------------------------------------------------
curl http://localhost:8080/pianoJSON.php?n=5&start=2023&end=2023
--------------------------------------------------------------------------------

YOUR OUTPUT                          | EXPECTED OUTPUT
--------------------------------------------------------------------------------
[                                      [
  [                                      [
    "Year",                                "Year",
    "Bösendorfer",                         "Bösendorfer",
    "Walter",                              "Walter",
    "Bechstein",                           "Bechstein",
    "Kawai",                               "Kawai",
    "Baldwin"                              "Baldwin"
  ],                                     ],
  [                                      [
    2023                               |     "2023",
  ],                                   |     1,
  [                                    |     1,
    2023,                              |     0,
    2024,                              |     1,
    "0",                               |     1
    2026,                              <
    "0",                               <
    2028,                              <
    "0",                               <
    2030,                              <
    "0",                               <
    2032,                              <
    "0"                                <
  ]                                        ]
]                                      ]
```

```
Stopping Docker Containers...
Stopping cmpt310_www ...
Stopping cmpt310_db  ...
Stopping cmpt310_www ... done
Stopping cmpt310_db  ... done
Removing cmpt310_www ...
Removing cmpt310_db  ...
Removing cmpt310_db  ... done
Removing cmpt310_www ... done
Removing network asafari_default
Removing image asafari_db
Removing image asafari_www
```

```
<?php
//
//  FRANKLIN SAFARI
//  210203
//
//  lab3.php
//
//  The purpose of this lab is to give you experience with web technologies,
//  specifically SQL, php (and mysqli), JSON.  You will also be exposed to
//  JQuery and Google Charts API that are used in the reports (*Report.html).
//
//  Good Luck!

$username = "cmpt310";
$password = "#4Rbr6";
$server   = "db";
$schema   = "Lab3";
$port     = 3306;

function orgJSON() {

  $db = openDB();

  // ========================================================================
  // Replace this static data with dynamic data from the DB
  $output = array(
             array("Name/Position", "Supervisor EmployeeID", "EmployeeID"),
             //array( array('v'=>'1', 'f'=>'John Smith <div class="title">Chief Technician</div>'), '',
 '1'),
             //array( array('v'=>'2', 'f'=>'B'), '1', '2'),
            // array( array('v'=>'3', 'f'=>'C'), '1', '3'),
            // array( array('v'=>'4', 'f'=>'E'), '3', '4'),
            // array( array('v'=>'5', 'f'=>'F'), '3', '5'),
            // array( array('v'=>'6', 'f'=>'D'), '2', '6'),
           );
  // ========================================================================
  $result = $db->query ("SELECT * FROM Technician;");


 // $output[] = [['v' => $row ["EmployeeID"], 'f' => $row ["Name"]], '', '1' ];

  if ($result) {
        while ($row = $result-> fetch_assoc()){
        $output[] = [ ['v' => $row["EmployeeID"], 'f' => $row['Name']."<div class='title'>".$row['Title'
]."</div>" ], $row["Technician_EmployeeID"], $row["EmployeeID"] ];
        }
      }
  closeDB($db);

  echo json_encode($output);

  exit;
}

function technicianJSON() {

  $db = openDB();

  $n =  $db->real_escape_string($_GET["n"]);

  // ========================================================================
  // Replace this static data with dynamic data from the DB


  $output = [
              ["Technician",  "Number of Pianos Inspected"],
            //  ["Tech 1",    12345],
             // ["Tech 2",    12345],
             // ["Tech 3",    12345],
             // ["Tech 4",    12345],
```

```
            // ["Tech 5",        0]
           ];

 $result = $db ->query("SELECT Technician.Name,COUNT( Inspection.InspectionID) AS InspectionNumber FROM
 Technician, Inspection WHERE Technician.EmployeeID = Inspection.Technician_EmployeeID GROUP BY Name ORD
ER BY InspectionNumber DESC, Name ASC LIMIT $n;
 ");
   if ($result){
        while ($row = $result->fetch_assoc())
        $output[] = [ $row["Name"], intval ($row ["InspectionNumber"])];
        }

  // ============================================================================
  $result-> free();
  closeDB($db);

  echo json_encode($output);

  exit;

}

function pianoJSON() {

  $db = openDB();

  $start =  $db->real_escape_string($_GET["start"]);
  $end =    $db->real_escape_string($_GET["end"]);
  $n =      $db->real_escape_string($_GET["n"]);

  // ============================================================================
$result = $db ->query("SELECT Model.Name, Model.ModelID, COUNT(Piano.Model_ModelID) As NumberOfSales FRO
M Piano, Model WHERE Model.ModelID = Piano.Model_ModelID GROUP BY Model.ModelID ORDER BY NumberOfSales D
ESC, Name ASC LIMIT $n;");
        $headerRow [] = "Year" ;
        if ($result){
             while ($row = $result->fetch_assoc()){
             $IdArray[] = $row["ModelID"];
                $headerRow[] = $row["Name"];
             }}
        $output[] = $headerRow ;

         $startint = intval($start);
         $endint = intval ($end);
       while($startint <= $endint){

       $headRow [] = $startint;
        $output[] = $headRow;
        foreach ($IdArray as $value){
        $startint ++;
        $headRow [] = $startint;
             $result2 = $db->query( "SELECT COUNT(SerialNo) FROM Piano WHERE Model_ModelID = $value A
ND YEAR (MfgDate) = ". $startint.";");
        if ($result2){
        $startint ++;
             while ($row = $result2->fetch_assoc()){
                $headRow[] = $row["COUNT(SerialNo)"];

             }}
        }
        $startint ++;
        $output[] = $headRow;
}



        //$headRow = $startint +1;
```

good order query

this adds the years in

data out put

query always returns 0

-2

```
        //foreach ($IdArray as $value){
        //      $result2 = $db->query( "SELECT COUNT(SerialNo) FROM Piano WHERE Model_ModelID = $value A
ND YEAR (MfgDate) = ".$startint.";");
        //if ($result2){
        //     while ($row = $result2->fetch_assoc()){
         //     $headRow[] = $row["COUNT(SerialNo)"];

        //     }}
//      }

        //$startint = startint +1;
        //$startt = $start + 1;
        //$headdRow[] = $startt;
        //foreach ($IdArray as $value){
                //$result3 = $db->query( "SELECT COUNT(SerialNo) FROM Piano WHERE Model_ModelID = $value
 AND YEAR (MfgDate) = ". $startt.";");
        //if ($result3){
         //    while ($row = $result3->fetch_assoc()){
           //   $headdRow[] = $roww["COUNT(SerialNo)"];

          //   }}
//      }//

        //$output[] = $headRow;
//}
        //converting the string year into int so I can get the difference and use that in a loop to prin
t the respective years as requested by the user.

        //$startint = intval($start);
        //$endint = intval($end);
        //$startint = intval($start);
        //$yeardiff = $endint - $startint;



//$result
   // ["Year",  "Bosern",  "Mofasdfadel B",  "Model C",  "Model D" ],
   // ["2017",        0,      12345,      12345,      12345   ],
    //["2018",    12345,          0,      12345,      12345   ],
  //  ["2019",    12345,      12345,          0,      12345   ],
  //  ["2020",    12345,      12345,      12345,          0   ],
  //  ["2021",        0,          0,          0,          0   ]
  //  ];
  // ============================================================================

  closeDB($db);

  echo json_encode($output);

  exit;
}

// DO NOT MODIFY BELOW THIS POINT -------------------------------------------

function openDB()
{
  try {

    $db = new mysqli( $GLOBALS['server'],
                      $GLOBALS['username'],
                      $GLOBALS['password'],
                      $GLOBALS['schema'],
                      $GLOBALS['port']);

    if ($db->connect_errno)
      echo "Failed to connect to MySQL: (" . $db->connect_errno . ") " . $db->connect_error;
    return $db;

  } catch (mysqli_sql_exception $e) {
    echo "Failed to connect to MySQL: ".$e->getMessage()."\n";
```

```
  }

  return NULL;
}

function closeDB($db)
{
  if ($db !=NULL )
    $db->close();
}
```