G51DBI Coursework 2 Report

The HTML features used in my project include:
- Lists
- Anchors
- Images
- Paragraphs
- Headings
- Divisions
- Tables
- Forms

The CSS features used:
- Simple selectors
- Class selectors
- Generic classes
- ID selectors
- Pseudo Classes

The JavaScript features used:
- Form validation
- Alerts
- Changing HTML attributes and styles
- Functions

The PHP features used:
- Functions
- Form handling and validation
- Control statements
- Global variables

The MySQL featured used:
- SELECT, UPDATE, INSERT and DELETE queries
- Count and Sum functions
- Group By
- Order
- Joins

Search

Database Metrics

- Number of Artists: **10**
- Number of CDs: **12**
- Number of Tracks: **7**

Artists

Search

Artist ID	Name	No. Albums	
5	Animal Collective	1	✎ ✗ Albums
3	Deadmau5	1	✎ ✗ Albums
6	Kings of Leon	2	✎ ✗ Albums
4	Mark Ronson	2	✎ ✗ Albums
7	Mark Ronson & The Business Intl	0	✎ ✗ Albums
8	Maroon 5	1	✎ ✗ Albums
2	Mr. Scruff	1	✎ ✗ Albums
1	Muse	2	✎ ✗ Albums
9	Oasis	1	✎ ✗ Albums
10	Red Hot Chili Peppers	1	✎ ✗ Albums

12	Red Hot Chili Peppers	I'm With You	Rock	£11.99	3	595	✎ ✗ Tracks
7	Animal Collective	Merriweather Post Pavilion	Electronica	£12.99	0		✎ ✗ Tracks
3	Mr. Scruff	Ninja Tuna	Electronica	9.99	0		Save
8	Kings of Leon	Only By The Night	Rock	£9.99	0		✎ ✗ Tracks
5	Mark Ronson	Record Collection	Alternative Rock	£11.99	0		✎ ✗ Tracks
2	Muse	The Resistance	Rock	£11.99	0		✎ ✗ Tracks
6	Mark Ronson	Version	Rock	£12.99	0		✎ ✗ Tracks

Animal Collective ▼ | Album Title | Album Genre | Album Price | Create

SEARCH RESULTS

Home   Artists   Albums   Tracks

Search

Search results for: "the"

Artists:

Artist ID	Name	No. Albums	
7	Mark Ronson & The Business Intl	0	Albums

CDs:

CD ID	Artist	Title	Genre	Price	Tracks	Length	
11	Oasis	(What's The Story) Morning Glory	Rock	£9.00	4	970	Tracks
7	Animal Collective	Merriweather Post Pavilion	Electronica	£12.99	0		Tracks

Video demonstration: https://www.youtube.com/watch?v=M8oV_HDmCws

Source code appendix

Style.css

```css
body
{
        background-color: #d9d9d9;
        padding: 0px;
        margin: 0px;
        font-family: "Verdana", "Arial";
}

h1
{
        font-family: "Verdana", "Arial";
        font-size: 40px;
        font-weight: normal;
        font-variant: small-caps;
        color: white;
        text-shadow: 2px 2px grey;
}

h2
{
        font-size: 28px;
        font-weight: normal;
        text-decoration: underline;
}

table
{
        border: 1px solid #428a42;
        border-collapse: collapse;
        table-layout: fixed;
        width: 100%;
}

th, td
{
    text-align: left;
    padding: 6px;
      margin: 5px;
      min-width: 100px;

}

th
{
        background-color: #428a42;
        color: white;
}

tr:nth-of-type(4n-3)
{
        background-color: #f2f2f2;
}

tr.editRow
{
        background-color: #FFEBCD;
        border: 1px solid blue;
}

a:link
{
    color: #428a42;
}
```

```css
a:visited
{
    color: #428a42;
}

a:hover
{
    color: #87c587;
}

a:active
{
    color: #428a42;
}

form
{
    margin-top:0px;
    margin-bottom:0px;
    display: inline;
}

#main
{
    background-color: white;
    width: 80%;
    height: 100%;
    margin: auto;
    max-width: 980px;
}

.header
{
    padding: 15px;
    background-color: #87c587;
}

.navigation
{
    background-color: #428a42;
    margin-top: -20px;
}

ul.nav
{
    background-color: #428a42;
    list-style-type: none;
    overflow: hidden;
}

li.nav
{
    float: left;
}

li.nav a
{
    padding: 10px;
    display: block;
    color: white;
    text-align: center;
    text-decoration: none;
}

li.nav a:hover
{
    background-color: #326732;
}
```

```css
li.nav_search
{
     float: right;
     padding: 10px;
     margin-top: -5px;
}

.content
{
     padding: 15px;
     padding-left: 35px;
     padding-right: 35px;
     background-color: white;
}
```

database.php

```php
<?php

$servername = "mysql.cs.nott.ac.uk";
$username = "psyja2";
$password = "*****";
$dbname = "psyja2";
error_reporting(-1);
ini_set('display_errors', 'On');

function display_artists($searchQuery) {

     $mysqli = new mysqli($GLOBALS['servername'], $GLOBALS['username'],
$GLOBALS['password'], $GLOBALS['dbname']);

     /* check connection */
     if (mysqli_connect_errno())
     {
          printf("Connect failed: %s\n", mysqli_connect_error());
          exit();
     }

     /* if a search query is set */
     $query = "SELECT Artist.artistID, artistName, count(CD.artistID) FROM
CD RIGHT JOIN Artist ON CD.artistID=Artist.artistID GROUP BY Artist.artistID
ORDER BY artistName";
     if($searchQuery != "")
     {
          $searchQuery = "%" . $searchQuery . "%";
          $query = "SELECT Artist.artistID, artistName, count(CD.artistID)
FROM CD RIGHT JOIN Artist ON CD.artistID=Artist.artistID WHERE artistName
LIKE ? GROUP BY artistID ORDER BY artistName";
     }

     if ($stmt = $mysqli->prepare($query))
     {
          /* send search query param if set */
          if($searchQuery != "")
          {
               $stmt->bind_param("s", $searchQuery);
          }

          /* execute statement */
          $stmt->execute();

          /* bind result variables */
          $stmt->bind_result($artistID, $artistName, $numCDs);

          /* fetch and display values */
          while ($stmt->fetch())
          {
               echo "<tr id='editRowA$artistID' class='editRow'
style='display: none;'><form method='POST' action='' onsubmit='return
validateArtistForm($artistID)'><input type='hidden' name='artistID'
```

```
value='$artistID' /><input type='hidden' name='action' value='edit'
/><td>$artistID</td><td><input type='text' name='artistName'
id='artistName$artistID' style='width: 100%' value='$artistName'
/></td><td>$numCDs</td><td><input type='submit' value='Save'
/></td></form></tr>";
                echo "<tr
id='viewRowA$artistID'><td>$artistID</td><td>$artistName</td><td>$numCDs</td
><td>";
                if($searchQuery == "")
                {
                        echo "<a href='#'
onclick='editArtist($artistID)'><img src='images/edit.png' alt='Edit' /></a>
<form id='deleteA$artistID' method='POST' action=''><input type='hidden'
name='action' value='delete' /><input type='hidden' name='artistID'
value='$artistID' /></form><a href='#'
onclick='deleteArtist($artistID)'><img src='images/delete.png' alt='Edit'
/></a>";
                }
                echo " <a href='albums.php?
display_artistID=$artistID'>Albums</a></td></tr>";
            }

        /* close statement */
        $stmt->close();
    }

    /* close connection */
    $mysqli->close();
}

function display_cds($searchQuery, $artistID) {

    $mysqli = new mysqli($GLOBALS['servername'], $GLOBALS['username'],
$GLOBALS['password'], $GLOBALS['dbname']);

    /* check connection */
    if (mysqli_connect_errno())
    {
        printf("Connect failed: %s\n", mysqli_connect_error());
        exit();
    }

    /* if a search query is set */
    $query = "SELECT CD.cdID, Artist.artistName, CD.cdTitle, CD.cdGenre,
CD.cdPrice, count(Track.cdID), sum(Track.trackLength) FROM Artist RIGHT JOIN
CD ON CD.artistID=Artist.artistID LEFT JOIN Track ON CD.cdID=Track.cdID
GROUP BY CD.cdID ORDER BY CD.cdTitle";
    if($searchQuery != "")
    {
        $searchQuery = "%" . $searchQuery . "%";
        $query = "SELECT CD.cdID, Artist.artistName, CD.cdTitle,
CD.cdGenre, CD.cdPrice, count(Track.cdID), sum(Track.trackLength) FROM
Artist RIGHT JOIN CD ON CD.artistID=Artist.artistID LEFT JOIN Track ON
CD.cdID=Track.cdID WHERE CD.cdTitle LIKE ? GROUP BY CD.cdID ORDER BY
CD.cdTitle";
    }
    else if($artistID != null)
    {
        $query = "SELECT CD.cdID, Artist.artistName, CD.cdTitle,
CD.cdGenre, CD.cdPrice, count(Track.cdID), sum(Track.trackLength) FROM
Artist RIGHT JOIN CD ON CD.artistID=Artist.artistID LEFT JOIN Track ON
CD.cdID=Track.cdID WHERE CD.artistID=? GROUP BY CD.cdID ORDER BY
CD.cdTitle";
    }

    if ($stmt = $mysqli->prepare($query))
    {
        /* send search query param if set */
        if($searchQuery != "")
```

```php
            {
                    $stmt->bind_param("s", $searchQuery);
            }
            else if($artistID != null)
            {
                    $stmt->bind_param("i", $artistID);
            }

            /* execute statement */
            $stmt->execute();

            /* bind result variables */
            $stmt->bind_result($CDID, $artistName, $CDTitle, $CDGenre,
$CDPrice, $numTracks, $length);

            /* fetch and display values */
            while ($stmt->fetch())
            {
                    $artistName = htmlspecialchars($artistName, ENT_QUOTES);
                    $CDTitle = htmlspecialchars($CDTitle, ENT_QUOTES);
                    ?>
                    <tr id='editRowC<?php echo $CDID; ?>' class='editRow'
style='display: none;'>
                            <form method='POST' action='' onsubmit='return
validateCDForm(<?php echo $CDID; ?>)'>
                                    <input type='hidden' name='CDID' value='<?php
echo $CDID; ?>' /><input type='hidden' name='action' value='edit' />
                                    <td><?php echo $CDID; ?></td>
                                    <td><?php echo $artistName; ?></td>
                                    <td><input type='text' style='width: 100%'
name='CDTitle' id='CDTitle<?php echo $CDID; ?>' value='<?php echo
$CDTitle; ?>' /></td>
                                    <td><input type='text' style='width: 100%'
name='CDGenre' id='CDGenre<?php echo $CDID; ?>' value='<?php echo
$CDGenre; ?>' /></td>
                                    <td><input type='text' style='width: 100%'
name='CDPrice' id='CDPrice<?php echo $CDID; ?>' value='<?php echo
$CDPrice; ?>' /></td>
                                    <td><?php echo $numTracks; ?></td>
                                    <td><?php echo $length; ?></td>
                                    <td><input type='submit' value='Save' /></td>
                            </form>
                    </tr>
                    <tr id='viewRowC<?php echo $CDID; ?>'>
                            <td><?php echo $CDID; ?></td>
                            <td><?php echo $artistName; ?></td>
                            <td><?php echo $CDTitle; ?></td>
                            <td><?php echo $CDGenre; ?></td>
                            <td>&pound;<?php echo $CDPrice; ?></td>
                            <td><?php echo $numTracks; ?></td>
                            <td><?php echo $length; ?></td>
                            <td>
                            <?php if($searchQuery == "")
                            { ?>
                            <a href='#' onclick='editCD(<?php echo $CDID; ?
>)'><img src='images/edit.png' alt='Edit' /></a> <form id='deleteC<?php echo
$CDID; ?>' method='POST' action=''><input type='hidden' name='action'
value='delete' /><input type='hidden' name='CDID' value='<?php echo $CDID; ?
>' /></form><a href='#' onclick='deleteCD(<?php echo $CDID; ?>)'><img
src='images/delete.png' alt='Edit' /></a>
                            <?php } ?><a href='tracks.php?display_CDID=<?php echo
$CDID; ?>'>Tracks</a></td>
                    </tr>
                    <?php
            }

            /* close statement */
            $stmt->close();
    }
```

```php
        /* close connection */
        $mysqli->close();
}

function display_tracks($searchQuery, $CDID) {

        $mysqli = new mysqli($GLOBALS['servername'], $GLOBALS['username'],
$GLOBALS['password'], $GLOBALS['dbname']);

        /* check connection */
        if (mysqli_connect_errno())
        {
                printf("Connect failed: %s\n", mysqli_connect_error());
                exit();
        }

        /* if a search query is set */
        $query = "SELECT Track.trackID, Artist.artistName, CD.cdTitle,
Track.trackTitle, Track.trackLength FROM Artist NATURAL JOIN CD NATURAL JOIN
Track ORDER BY Track.trackTitle";
        if($searchQuery != "")
        {
                $searchQuery = "%" . $searchQuery . "%";
                $query = "SELECT Track.trackID, Artist.artistName, CD.cdTitle,
Track.trackTitle, Track.trackLength FROM Artist NATURAL JOIN CD NATURAL JOIN
Track WHERE Track.trackTitle LIKE ? ORDER BY Track.trackTitle";
        }
        else if($CDID != null)
        {
                $query = "SELECT Track.trackID, Artist.artistName, CD.cdTitle,
Track.trackTitle, Track.trackLength FROM Artist NATURAL JOIN CD NATURAL JOIN
Track WHERE Track.cdID=? ORDER BY Track.trackTitle";
        }

        if ($stmt = $mysqli->prepare($query))
        {
                /* send search query param if set */
                if($searchQuery != "")
                {
                        $stmt->bind_param("s", $searchQuery);
                }
                else if($CDID != null)
                {
                        $stmt->bind_param("i", $CDID);
                }

                /* execute statement */
                $stmt->execute();

                /* bind result variables */
                $stmt->bind_result($trackID, $artistName, $CDTitle, $trackTitle,
$trackLength);

                /* fetch and display values */
                while ($stmt->fetch())
                {

                        $artistName = htmlspecialchars($artistName, ENT_QUOTES);
                        $CDTitle = htmlspecialchars($CDTitle, ENT_QUOTES);
                        $trackTitle = htmlspecialchars($trackTitle, ENT_QUOTES);
                        ?>
                        <tr id='editRowT<?php echo $trackID; ?>' class='editRow'
style='display: none;'>
                                <form method='POST' action='' onsubmit='return
validateTrackForm(<?php echo $trackID; ?>)'>
                                        <input type='hidden' name='trackID' value='<?php
echo $trackID; ?>' />
                                        <input type='hidden' name='action'
```

```php
value='edit' />
                              <td><?php echo $trackID; ?></td>
                              <td><?php echo $artistName; ?></td>
                              <td><?php echo $CDTitle; ?></td>
                              <td><input type='text' style='width: 100%'
name='trackTitle' id='trackTitle<?php echo $trackID; ?>' value='<?php echo
$trackTitle; ?>' /></td>
                              <td><input type='text' style='width: 100%'
name='trackLength' id='trackLength<?php echo $trackID; ?>' value='<?php echo
$trackLength; ?>' /></td>

                              <td><input type='submit' value='Save' /></td>
                         </form>
                    </tr>
                    <tr id='viewRowT<?php echo $trackID; ?>'>
                         <td><?php echo $trackID; ?></td>
                         <td><?php echo $artistName; ?></td>
                         <td><?php echo $CDTitle; ?></td>
                         <td><?php echo $trackTitle; ?></td>
                         <td><?php echo $trackLength; ?></td>
                         <td><?php if($searchQuery == "")
                         { ?>
                         <a href='#' onclick='editTrack(<?php echo $trackID; ?
>)'><img src='images/edit.png' alt='Edit' /></a> <a href='#'
onclick='deleteTrack(<?php echo $trackID; ?>)'><img src='images/delete.png'
alt='Edit' /></a><form method='POST' action='' id='deleteT<?php echo
$trackID; ?>'><input type='hidden' name='action' value='delete' /><input
type='hidden' name='trackID' value='<?php echo $trackID; ?>' /></form><?
php } ?></td>
                    </tr>
                    <?php
          }

          /* close statement */
          $stmt->close();
     }

     /* close connection */
     $mysqli->close();
}

function display_metrics() {

     $mysqli = new mysqli($GLOBALS['servername'], $GLOBALS['username'],
$GLOBALS['password'], $GLOBALS['dbname']);

     /* check connection */
     if (mysqli_connect_errno())
     {
          printf("Connect failed: %s\n", mysqli_connect_error());
          exit();
     }

     /* if a search query is set */
     $query = "SELECT (SELECT COUNT(*) FROM Artist), (SELECT COUNT(*) FROM
CD), (SELECT COUNT(*) FROM Track)";

     if ($stmt = $mysqli->prepare($query))
     {
          /* execute statement */
          $stmt->execute();

          /* bind result variables */
          $stmt->bind_result($artists, $cds, $tracks);

          /* fetch and display values */
          while ($stmt->fetch())
          {
               echo "<li>Number of Artists: <b>$artists</b></li>";
```

```php
                echo "<li>Number of CDs: <b>$cds</b></li>";
                echo "<li>Number of Tracks: <b>$tracks</b></li>";
        }

        /* close statement */
        $stmt->close();
    }

    /* close connection */
    $mysqli->close();
}

function update_artist($artistID, $artistName) {
    $mysqli = new mysqli($GLOBALS['servername'], $GLOBALS['username'],
$GLOBALS['password'], $GLOBALS['dbname']);

    /* check connection */
    if (mysqli_connect_errno())
    {
            printf("Connect failed: %s\n", mysqli_connect_error());
            exit();
    }

    /* if a search query is set */
    $query = "UPDATE Artist SET artistName=? WHERE artistID=?";

    if ($stmt = $mysqli->prepare($query))
    {
            /* set query parameters */
            $stmt->bind_param("si", $artistName, $artistID);

            /* execute statement */
            $stmt->execute();

            /* close statement */
            $stmt->close();
    }

    /* close connection */
    $mysqli->close();
}

function update_cd($CDID, $cdTitle, $cdGenre, $cdPrice) {
    $mysqli = new mysqli($GLOBALS['servername'], $GLOBALS['username'],
$GLOBALS['password'], $GLOBALS['dbname']);

    /* check connection */
    if (mysqli_connect_errno())
    {
            printf("Connect failed: %s\n", mysqli_connect_error());
            exit();
    }

    /* if a search query is set */
    $query = "UPDATE CD SET cdTitle=?, cdGenre=?, cdPrice=?  WHERE
CDID=?";

    if ($stmt = $mysqli->prepare($query))
    {
            /* set query parameters */
            $stmt->bind_param("ssdi", $cdTitle, $cdGenre, $cdPrice, $CDID);

            /* execute statement */
            $stmt->execute();

            /* close statement */
            $stmt->close();
    }
```

```php
        /* close connection */
        $mysqli->close();
}

function update_track($trackID, $trackTitle, $trackLength) {
        $mysqli = new mysqli($GLOBALS['servername'], $GLOBALS['username'],
$GLOBALS['password'], $GLOBALS['dbname']);

        /* check connection */
        if (mysqli_connect_errno())
        {
                printf("Connect failed: %s\n", mysqli_connect_error());
                exit();
        }

        /* if a search query is set */
        $query = "UPDATE Track SET trackTitle=?, trackLength=? WHERE
TrackID=?";

        if ($stmt = $mysqli->prepare($query))
        {
                /* set query parameters */
                $stmt->bind_param("sii", $trackTitle, $trackLength, $trackID);

                /* execute statement */
                $stmt->execute();

                /* close statement */
                $stmt->close();
        }

        /* close connection */
        $mysqli->close();
}

function create_artist($artistName) {

        $mysqli = new mysqli($GLOBALS['servername'], $GLOBALS['username'],
$GLOBALS['password'], $GLOBALS['dbname']);

        /* check connection */
        if (mysqli_connect_errno())
        {
                printf("Connect failed: %s\n", mysqli_connect_error());
                exit();
        }

        /* if a search query is set */
        $query = "INSERT INTO Artist (artistName) VALUES (?)";

        if ($stmt = $mysqli->prepare($query))
        {
                /* set query parameters */
                $stmt->bind_param("s", $artistName);

                /* execute statement */
                $stmt->execute();

                /* close statement */
                $stmt->close();
        }

        /* close connection */
        $mysqli->close();

}

function delete_artist($artistID) {
```

```php
        $mysqli = new mysqli($GLOBALS['servername'], $GLOBALS['username'],
$GLOBALS['password'], $GLOBALS['dbname']);

        /* check connection */
        if (mysqli_connect_errno())
        {
                printf("Connect failed: %s\n", mysqli_connect_error());
                exit();
        }

        /* if a search query is set */
        $query = "DELETE FROM Artist WHERE artistID=?";

        if ($stmt = $mysqli->prepare($query))
        {
                /* set query parameters */
                $stmt->bind_param("i", $artistID);

                /* execute statement */
                $stmt->execute();

                /* close statement */
                $stmt->close();
        }

        /* close connection */
        $mysqli->close();

}

function create_CD($artistID, $CDTitle, $CDGenre, $CDPrice) {

        $mysqli = new mysqli($GLOBALS['servername'], $GLOBALS['username'],
$GLOBALS['password'], $GLOBALS['dbname']);

        /* check connection */
        if (mysqli_connect_errno())
        {
                printf("Connect failed: %s\n", mysqli_connect_error());
                exit();
        }

        /* if a search query is set */
        $query = "INSERT INTO CD (artistID, CDTitle, CDGenre, CDPrice) VALUES
(?,?,?,?)";

        if ($stmt = $mysqli->prepare($query))
        {
                /* set query parameters */
                $stmt->bind_param("issd", $artistID, $CDTitle, $CDGenre,
$CDPrice);

                /* execute statement */
                $stmt->execute();

                /* close statement */
                $stmt->close();
        }

        /* close connection */
        $mysqli->close();

}

function delete_CD($CDID) {

        $mysqli = new mysqli($GLOBALS['servername'], $GLOBALS['username'],
$GLOBALS['password'], $GLOBALS['dbname']);
```

```php
    /* check connection */
    if (mysqli_connect_errno())
    {
        printf("Connect failed: %s\n", mysqli_connect_error());
        exit();
    }

    /* if a search query is set */
    $query = "DELETE FROM CD WHERE CDID=?";

    if ($stmt = $mysqli->prepare($query))
    {
        /* set query parameters */
        $stmt->bind_param("i", $CDID);

        /* execute statement */
        $stmt->execute();

        /* close statement */
        $stmt->close();
    }

    /* close connection */
    $mysqli->close();
}

function create_track($CDID, $trackTitle, $trackLength) {

    $mysqli = new mysqli($GLOBALS['servername'], $GLOBALS['username'],
$GLOBALS['password'], $GLOBALS['dbname']);

    /* check connection */
    if (mysqli_connect_errno())
    {
        printf("Connect failed: %s\n", mysqli_connect_error());
        exit();
    }

    /* if a search query is set */
    $query = "INSERT INTO Track (CDID, trackTitle, trackLength) VALUES
(?,?,?)";

    if ($stmt = $mysqli->prepare($query))
    {
        /* set query parameters */
        $stmt->bind_param("isd", $CDID, $trackTitle, $trackLength);

        /* execute statement */
        $stmt->execute();

        /* close statement */
        $stmt->close();
    }

    /* close connection */
    $mysqli->close();

}

function delete_track($trackID) {

    $mysqli = new mysqli($GLOBALS['servername'], $GLOBALS['username'],
$GLOBALS['password'], $GLOBALS['dbname']);

    /* check connection */
    if (mysqli_connect_errno())
    {
        printf("Connect failed: %s\n", mysqli_connect_error());
        exit();
```

```php
        }

        /* if a search query is set */
        $query = "DELETE FROM Track WHERE trackID=?";

        if ($stmt = $mysqli->prepare($query))
        {
                /* set query parameters */
                $stmt->bind_param("i", $trackID);

                /* execute statement */
                $stmt->execute();

                /* close statement */
                $stmt->close();
        }

        /* close connection */
        $mysqli->close();
}

function displayArtistList() {

        $mysqli = new mysqli($GLOBALS['servername'], $GLOBALS['username'],
$GLOBALS['password'], $GLOBALS['dbname']);

        /* check connection */
        if (mysqli_connect_errno())
        {
                printf("Connect failed: %s\n", mysqli_connect_error());
                exit();
        }

        /* if a search query is set */
        $query = "SELECT artistID, artistName FROM Artist";

        if ($stmt = $mysqli->prepare($query))
        {
                /* execute statement */
                $stmt->execute();

                /* bind result variables */
                $stmt->bind_result($artistID, $artistName);

                /* fetch and display values */
                while ($stmt->fetch())
                {
                        echo "<option value='$artistID'>$artistName</option>";
                }

                /* close statement */
                $stmt->close();
        }

        /* close connection */
        $mysqli->close();

}

function displayCDList() {

        $mysqli = new mysqli($GLOBALS['servername'], $GLOBALS['username'],
$GLOBALS['password'], $GLOBALS['dbname']);

        /* check connection */
        if (mysqli_connect_errno())
        {
                printf("Connect failed: %s\n", mysqli_connect_error());
                exit();
```

```php
        }

        /* if a search query is set */
        $query = "SELECT CDID, CDTitle FROM CD";

        if ($stmt = $mysqli->prepare($query))
        {
                /* execute statement */
                $stmt->execute();

                /* bind result variables */
                $stmt->bind_result($CDID, $CDTitle);

                /* fetch and display values */
                while ($stmt->fetch())
                {
                        echo "<option value='$CDID'>$CDTitle</option>";
                }

                /* close statement */
                $stmt->close();
        }

        /* close connection */
        $mysqli->close();

}

?>
```

script.js

```javascript
function editArtist(id)
{
        document.getElementById("viewRowA" + id).style.display = "none";
        document.getElementById("editRowA" + id).style.display = "table-row";
}

function validateArtistForm(id)
{
        var artistName = document.getElementById("artistName" + id).value;
        if(artistName == "")
        {
                alert("Artist name field is empty!");
                return false;
        }
        return true;
}

function validateCreateArtistForm()
{
        var artistName = document.getElementById("artistName").value;
        if(artistName == "")
        {
                alert("Artist name field is empty!");
                return false;
        }
        return true;
}

function deleteArtist(id)
{
        var result = confirm("Are you sure you want to delete this record?");
        if(result == true)
        {
                document.getElementById("deleteA" + id).submit();
        }
}
```

```
function editCD(id)
{
        document.getElementById("viewRowC" + id).style.display = "none";
        document.getElementById("editRowC" + id).style.display = "table-row";
}

function validateCDForm(id)
{
        var CDTitle = document.getElementById("CDTitle" + id).value;
        var CDGenre = document.getElementById("CDGenre" + id).value;
        var CDPrice = document.getElementById("CDPrice" + id).value;
        if(CDTitle == "" || CDGenre == "" || CDPrice == "")
        {
                alert("Some field(s) are empty!");
                return false;
        }
        return true;
}

function validateCreateCDForm()
{
        var artistID = document.getElementById("artistID").value;
        var CDTitle = document.getElementById("CDTitle").value;
        var CDGenre = document.getElementById("CDGenre").value;
        var CDPrice = document.getElementById("CDPrice").value;
        if(artistID == "" || CDTitle == "" || CDGenre == "" || CDPrice == "")
        {
                alert("Some field(s) are empty!");
                return false;
        }
        return true;
}

function deleteCD(id)
{
        var result = confirm("Are you sure you want to delete this record?");
        if(result == true)
        {
                document.getElementById("deleteC" + id).submit();
        }
}

function editTrack(id)
{
        document.getElementById("viewRowT" + id).style.display = "none";
        document.getElementById("editRowT" + id).style.display = "table-row";
}

function validateTrackForm(id)
{
        var trackTitle = document.getElementById("trackTitle" + id).value;
        var trackLength = document.getElementById("trackLength" + id).value;
        if(trackTitle == "" || trackLength == "")
        {
                alert("Some field(s) are empty!");
                return false;
        }
        return true;
}

function validateCreateTrackForm(id)
{
        var CDID = document.getElementById("CDID").value;
        var trackTitle = document.getElementById("trackTitle").value;
        var trackLength = document.getElementById("trackLength").value;
        if(CDID == "" || trackTitle == "" || trackLength == "")
        {
                alert("Some field(s) are empty!");
                return false;
```

```
        }
        return true;
}

function deleteTrack(id)
{
        var result = confirm("Are you sure you want to delete this record?");
        if(result == true)
        {
                document.getElementById("deleteT" + id).submit();
        }
}
```

index.php

```
<!DOCTYPE html>
<html>
<?php
include_once('database.php');
?>
<head>
<title>Home | Music Library</title>
<link rel="stylesheet" type="text/css" href="style.css">
</head>
<body>

<div id="main">

        <div class="header">
                <h1>Home</h1>
        </div>

        <div class="navigation">
                <ul class="nav">
                        <li class="nav"><a href="index.php">Home</a></li>
                        <li class="nav"><a href="artists.php">Artists</a></li>
                        <li class="nav"><a href="albums.php">Albums</a></li>
                        <li class="nav"><a href="tracks.php">Tracks</a></li>
                        <li class="nav_search"><form action="search.php"
method="GET"><input type="text" name="query" placeholder="Search"
/></form></li>
                </ul>
        </div>

        <div class="content">

                <h2>Database Metrics</h2>
                <ul>
                        <?php display_metrics(); ?>
                </ul>

        </div>

</div>

</body>
</html>
```

artists.php
```
<!DOCTYPE html>
<html>
<?php
include_once('database.php');
if(isset($_POST['action']))
{
        if($_POST['action'] == "delete")
        {
```

```php
                $artistID = htmlspecialchars($_POST['artistID']);
                delete_artist($artistID);
        }
        else if($_POST['action'] == "create")
        {
                $artistName = htmlspecialchars($_POST['artistName']);
                create_artist($artistName);
        }
        else if($_POST['action'] == "edit")
        {
                $artistID = htmlspecialchars($_POST['artistID']);
                $artistName = htmlspecialchars($_POST['artistName']);
                update_artist($artistID, $artistName);
        }
}
?>
<head>
<title>Artists | Music Library</title>
<link rel="stylesheet" type="text/css" href="style.css">
<script type="text/javascript" src="script.js"></script>
</head>
<body>

<div id="main">


        <div class="header">
                <h1>Artists</h1>
        </div>

        <div class="navigation">
                <ul class="nav">
                        <li class="nav"><a href="index.php">Home</a></li>
                        <li class="nav"><a href="artists.php">Artists</a></li>
                        <li class="nav"><a href="albums.php">Albums</a></li>
                        <li class="nav"><a href="tracks.php">Tracks</a></li>
                        <li class="nav_search"><form action="search.php"
method="GET"><input type="text" name="query" placeholder="Search"
/></form></li>
                </ul>

        </div>

        <div class="content">

                <table>
                        <tr><th>Artist ID</th><th>Name</th><th>No.
Albums</th><th></th></tr>
                        <?php display_artists(""); ?>
                </table>
                <br /><br /><form action="" method="POST" onsubmit="return
validateCreateArtistForm();"><input type="hidden" name="action"
value="create" /><input type="text" name="artistName" id="artistName"
placeholder="Artist Name" /> <input type="submit" value="Create" /></form>


        </div>

</div>

</body>
</html>
```

albums.php

```php
<!DOCTYPE html>
<html>
<?php
include_once('database.php');
```

```php
$displayArtistID = null;
if(isset($_POST['action']))
{
	if($_POST['action'] == "delete")
	{
		$CDID = htmlspecialchars($_POST['CDID']);
		delete_CD($CDID);
	}
	else if($_POST['action'] == "create")
	{
		$artistID = htmlspecialchars($_POST['artistID']);
		$CDTitle = htmlspecialchars($_POST['CDTitle']);
		$CDGenre = htmlspecialchars($_POST['CDGenre']);
		$CDPrice = htmlspecialchars($_POST['CDPrice']);
		create_CD($artistID, $CDTitle, $CDGenre, $CDPrice);
	}
	else if($_POST['action'] == "edit")
	{
		$CDID = htmlspecialchars($_POST['CDID']);
		$CDTitle = htmlspecialchars($_POST['CDTitle']);
		$CDGenre = htmlspecialchars($_POST['CDGenre']);
		$CDPrice = htmlspecialchars($_POST['CDPrice']);
		update_cd($CDID, $CDTitle, $CDGenre, $CDPrice);
	}
}
else if(isset($_GET['display_artistID']))
{
	$displayArtistID = htmlspecialchars($_GET['display_artistID']);
}
?>
<head>
<title>Albums | Music Library</title>
<link rel="stylesheet" type="text/css" href="style.css">
<script type="text/javascript" src="script.js"></script>
</head>
<body>

<div id="main">

	<div class="header">
		<h1>Albums</h1>
	</div>

	<div class="navigation">
		<ul class="nav">
			<li class="nav"><a href="index.php">Home</a></li>
			<li class="nav"><a href="artists.php">Artists</a></li>
			<li class="nav"><a href="albums.php">Albums</a></li>
			<li class="nav"><a href="tracks.php">Tracks</a></li>
			<li class="nav_search"><form action="search.php"
method="GET"><input type="text" name="query" placeholder="Search"
/></form></li>
		</ul>
	</div>

	<div class="content">
		<table width="100%">
			<tr><th>CD
ID</th><th>Artist</th><th>Title</th><th>Genre</th><th>Price</th><th>Tracks</
th><th>Length</th><th></th></tr>
			<?php display_cds("", $displayArtistID); ?>
		</table>
		<br /><br /><form action="" method="POST" onsubmit="return
validateCreateCDForm();"><input type="hidden" name="action"
value="create" /><select id="artistID" name="artistID"><?php
displayArtistList(); ?></select> <input type="text" id="CDTitle"
name="CDTitle" placeholder="Album Title" /> <input type="text" id="CDGenre"
name="CDGenre" placeholder="Album Genre" /> <input type="text" id="CDPrice"
name="CDPrice" placeholder="Album Price" /> <input type="submit"
```

```
value="Create" /></form>

        </div>

</div>

</body>
</html>
```

tracks.php
```php
<!DOCTYPE html>
<html>
<?php
include_once('database.php');
$displayCDID = null;
if(isset($_POST['action']))
{
        if($_POST['action'] == "delete")
        {
                $trackID = htmlspecialchars($_POST['trackID']);
                delete_track($trackID);
        }
        else if($_POST['action'] == "create")
        {
                $CDID = htmlspecialchars($_POST['CDID']);
                $trackTitle = htmlspecialchars($_POST['trackTitle']);
                $trackLength = htmlspecialchars($_POST['trackLength']);
                create_track($CDID, $trackTitle, $trackLength);
        }
        else if($_POST['action'] == "edit")
        {
                $trackID = htmlspecialchars($_POST['trackID']);
                $trackTitle = htmlspecialchars($_POST['trackTitle']);
                $trackLength = htmlspecialchars($_POST['trackLength']);
                update_track($trackID, $trackTitle, $trackLength);
        }
}
else if(isset($_GET['display_CDID']))
{
        $displayCDID = htmlspecialchars($_GET['display_CDID']);
}
?>
<head>
<title>Tracks | Music Library</title>
<link rel="stylesheet" type="text/css" href="style.css">
<script type="text/javascript" src="script.js"></script>
</head>
<body>

<div class="main">

        <div class="header">
                <h1>Tracks</h1>
        </div>

        <div class="navigation">
                <ul class="nav">
                        <li class="nav"><a href="index.php">Home</a></li>
                        <li class="nav"><a href="artists.php">Artists</a></li>
                        <li class="nav"><a href="albums.php">Albums</a></li>
                        <li class="nav"><a href="tracks.php">Tracks</a></li>
                        <li class="nav_search"><form action="search.php"
method="GET"><input type="text" name="query" placeholder="Search"
/></form></li>
                </ul>
```

```
            </div>

        <div class="content">

                <table>
                        <tr><th>Track
ID</th><th>Artist</th><th>CD</th><th>Title</th><th>Duration</th><th></th></t
r>
                        <?php display_tracks("", $displayCDID); ?>
                </table>
                <br /><br /><form action="" method="POST" onsubmit="return
validateCreateTrackForm();"><input type="hidden" name="action"
value="create" /><select id="CDID" name="CDID"><?php displayCDList(); ?
></select> <input type="text" id="trackTitle" name="trackTitle"
placeholder="Track Title" /> <input type="text" id="trackLength"
name="trackLength" placeholder="Track Length" /> <input type="submit"
value="Create" /></form>

        </div>

</div>

</body>
</html>
```

search.php

```
<!DOCTYPE html>
<html>
<?php
include_once('database.php');
?>
<head>
<title>Search Results | Music Library</title>
<link rel="stylesheet" type="text/css" href="style.css">
</head>
<body>

<div id="main">

    <div class="header">
        <h1>Search Results</h1>
    </div>

    <div class="navigation">
        <ul class="nav">
                <li class="nav"><a href="index.php">Home</a></li>
                <li class="nav"><a href="artists.php">Artists</a></li>
                <li class="nav"><a href="albums.php">Albums</a></li>
                <li class="nav"><a href="tracks.php">Tracks</a></li>
                <li class="nav_search"><form action="search.php"
method="GET"><input type="text" name="query" placeholder="Search"
/></form></li>
        </ul>
    </div>

    <div class="content">

            <p>Search results for: "<?php echo
htmlspecialchars($_GET['query']); ?>"</p>

            <b>Artists:</b><br />
            <table>
                    <tr><th>Artist ID</th><th>Name</th><th>No.
Albums</th><th></th></tr>
                    <?php display_artists(htmlspecialchars($_GET['query'])); ?>
            </table>
            <br /><hr />
```

```
            <b>CDs:</b><br />
            <table>
                <tr><th>CD
ID</th><th>Artist</th><th>Title</th><th>Genre</th><th>Price</th><th>Tracks</
th><th>Length</th><th></th></tr>
                <?php display_cds(htmlspecialchars($_GET['query']),
null); ?>
            </table>
            <br /><hr />

            <b>Tracks:</b><br />
            <table>
                <tr><th>Track
ID</th><th>Artist</th><th>CD</th><th>Title</th><th>Duration</th><th></th></t
r>
                <?php display_tracks(htmlspecialchars($_GET['query']),
null); ?>
            </table>

        </div>

    </div>

    </body>
    </html>
```