### UHI_Logo_CMYK_Sm

**Responsive Web Design Practical Assessment – Report Template  
HND Computer Science**

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| --- | --- | --- | --- |
| **Module Code/title:** | H1J9 35 Developing Websites for Multiplatform Devices  HF57 35 Web Development: Dynamically Generated Content | | |
| **Module code**: | H1J9 35 / HF57 35 | **Word-count:** | N/A |
| **Date due/time:** | Friday 18th March 2022 11.59pm | **Date submitted:** |  |
| **Student candidate Name:** | Calum Lindsay | | |
| **Student ID:** | 21010093 | | |

**Completing your assessment:**

You must submit all documentation in the appropriate Network & Information Security assessment folder on the VLE. The name the file should be **studentid\_web2.docx**. So for example, if your Student Id is: 0123456 then the file name will be 0123456\_web2.docx

**Declaration of originality and authorisation to hold this assessment electronically and verify that it is original:**

UHI recognises that plagiarism, where deliberately engaged in, is unacceptable and is considered serious academic malpractice. **Students are responsible for ensuring the work they submit is their own**. If you have any queries you should contact your Tutor or Student Adviser before submitting your assessment.

**By submitting this assessment I declare that the attached piece of work is my own**. I have acknowledged all the sources I have consulted and where I have used words which are not my own, I have clearly indicated this in the references.

|  |  |  |  |
| --- | --- | --- | --- |
| **Student ID:** | 21010093 | **Date:** |  |
|  | | | |
| **Lecturer Feedback:**  **Date:** |  | | |

# Music Online – Assessment Planning, Implementation and Testing

# Checklist

|  |  |  |  |
| --- | --- | --- | --- |
|  | **DESIGN Checklist** | **LO Element** | **Date Achieved** |
|  | Provide an overview of the main web site. | DWM LO2 |  |
| 1 | Identify functional website requirements. | DWM LO2 |  |
| 2 | Identify non-functional requirements.  (constraints) | DWM LO2 |  |
| 3 | Who are the target audience. Admin & Users | DWM LO2 |  |
| 4 | Developer requirements: Hardware, Software, Server Software | DWM LO2 |  |
| 5 | Project Schedule of expected/actual completion of major tasks | DWM LO2 |  |
| 6 | Site Map | DWM LO2 |  |
| 7 | Storyboard layout of min 2 viewports | DWM LO2 |  |
| 8 | Summary description of pages | DWM LO2 |  |
| 9 | Database Design/Data Dictionary | WDD LO2-4 |  |
| 10 | Explain Test Strategy to be used | DWM LO2 |  |
| 11 | Create a Test Plan.  Expected & Actual Results.  Any actions taken.  (Responsiveness test in different browsers) | DWM LO2 |  |

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|  | **IMPLEMENTATION Checklist** | **LO Element** | **Date Achieved** |
| 1 | Implement **Responsive** design | DWM LO3 | 22/02/2022 |
| 2 | Use Client & Server based scripting | DWM LO3 | 10/02/2022 |
| 3 | Use Control structures & modularity (use of if, loops, functions) | DWM LO3 | 10/02/2022 |
| 4 | Comment Code suitable | DWM LO3 | 02/06/2022 |
| 5 | Client Side-validation on register & login | DWM LO3 | 20/02/2022 |
| 6 | Implement Key Event – User Reg (address to uppercase) | DWM LO3 | 29/05/2022 |
| 7 | Implement Button/Submit Events | DWM LO3 | 15/02/2022 |
| 8a | Implement Touch Event handling eg Album of the week | DWM LO3 |  |
| 8b | Implement Drag Event handling eg Album of the week | DWM LO3 |  |
| 9 | Implement a Cookie  (Set and Retrieve data) | DWM LO3 | 30/05/2022 |
| 10 | Prepared statement in Register & Login | DWM LO3 | 17/05/2022 |
| 11 | Password Encryption | DWM LO3 | 17/05/2022 |
| 12 | Admin & User login control | DWM LO3/4 | 29/05/2022 |
| 13 | User Registration | DWM LO3/4 | 17/05/2022 |
| 14 | Search Facility for eg Vinyl, Genre, Price | DWM LO3/4 |  |
| 15 | User: Add, Delete, Update Vinyls for sale | DWM LO3/4 |  |
| 16 | Admin: view users, view Vinyls | DWM LO3/4 |  |
| 17 | Admin: Block User | DWM LO3/4 |  |
| 18 | Use of passing/obtaining data via the URL | DWM LO3/4 | 30/05/2022 |
| 19 | Demonstrate website to Lecturer |  |  |
| 20 | Submit completed documentation template | ALL |  |

# Web site overview

I must create a website that allows users to buy and sell vinyl music by searching on the website for what they wish to buy or by adding their own vinyls that they wish to sell to the website. The website should only allow users aged 18 or over to use it and should have a responsive user interface. The website is a prototype and doesn’t need to have any sales or payments functionality. Space should be allocated for advertisements to be added in the future and these spaces can be filled with placeholder images for now. Users should be able to choose their favourite album cover of the week by dragging the cover image to a certain area.

# Functional & Non-functional requirements

## Functional requirements

* User Registration
  + Users must be aged 18+ to register.
  + Passwords should be confirmed.
  + Address should be changed to uppercase using the KEY EVENT.
  + If the user is a retailer, they will be redirected to a mock payment screen.
* User Actions
  + Login/logout.
  + Adding vinyls for sale to their profile.
  + Removing vinyls for sale on their profile.
  + Modifying vinyls for sale on their profile.
  + Setting their favourite album of the week by dragging the album to a display area.
* Searching
  + Searching for music based on artist, album title, single title, etc.
  + Sorting of search results.
  + Filtering of search results.
  + Basic information shown about vinyls returned from search.
  + Detailed information shown when a vinyl is clicked on.
* Administration
  + Secure area accessible only to admins by logging in.
  + Able to view user and vinyl records.
  + Able to suspend/block user accounts.
* Security
  + Passwords must be encrypted when stored.
  + Prepared statements must be used for user registration and login.
* Other
  + Placeholder images should be placed where advertisements will later be displayed.
  + A cookie must be used to store user-specific data somewhere on the website.

## Non-functional (constraint) requirements

* The website must be completed by 18/03/2022.
* The website must be functional on a range of modern web browsers.
* The website should be responsive, intuitive and easy to use.
* The website must be maintainable as the website is going to be heavily modified in the future.
* The website should be designed using up to date tools, technologies and techniques and follow current web standards.

# Target client/audience

The intended target audience is anyone who is interested in music and aged 18 or older. This will include people with a wide range of IT experience, physical location, age group and gender and so the website should be made as accessible as possible to as wide a group of people as possible excluding people under the age of 18 and people without access to the internet.

# Developer Hardware & Software requirements

## Hardware required:

* Development computer:
  + Fairly basic computer able to run the software required for development
  + Internet access
* Web Server:
  + ???
* Tablet device (Samsung Galaxy Tab ?):
  + Must be able to run multiple modern web browsers so that a broad range of software and hardware combinations can be tested.
* Mobile device (iPhone 8 Plus):
  + Must be able to run multiple modern web browsers so that a broad range of software and hardware combinations can be tested.

## Software required for design, development, and testing:

* Development computer:
  + A text editor for creating and modifying source files. I have chosen to use Sublime Text as I have a licence key for it and am familiar with it however any text editor would work.
  + An image editor for creating and modifying images used in the website. I have chosen to use paint.net as it is free for personal and commercial use and as before I am familiar with it.
  + A range of modern web browsers will need to be used to test all aspects of the website to ensure correct functionality:
    - Google Chrome
    - Apple Safari (iPhone only)
    - Microsoft Edge
    - Mozilla Firefox
* Web Server:

# Project Plan Schedule:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Target Completion Date:** | 03/03/2022 |  | | |
| **Actual Completion Date:** |  |
| **Task Schedule** | | | | |
| **Task** | **Target Date** | **Actual completion Date** | **Status** | **Notes** |
| Create Project Plan Schedule | 25/01/2022 | 25/01/2022 | Completed |  |
| Determine Functional and Non-Functional requirements | 25/01/2022 | 26/01/2022 | Completed |  |
| Determine target audience | 25/01/2022 | 27/01/2022 | Completed |  |
| Determine Hardware and Software Requirements | 27/01/2022 |  | Started |  |
| Create a Site Map | 27/01/2022 | 27/01/2022 | Completed |  |
| Create Storyboard | 27/01/2022 |  | Started |  |
| Create a list of pages and summarise their purposes | 27/01/2022 |  | Started |  |
| Design Database | 31/01/2022 |  |  |  |
| Create Test Strategy | 31/01/2022 |  |  |  |
| Create Test Tables | 31/01/2022 |  |  |  |
| Implement the responsive design | 03/02/2022 |  |  |  |
| Implement key event  (address to uppercase) | 03/02/2022 |  |  |  |
| Implement button events | 03/02/2022 |  |  |  |
| Implement touch event handling | 03/02/2022 |  |  |  |
| Implement drag event handling | 03/02/2022 |  |  |  |
| Implement user login | 03/02/2022 |  |  |  |
| Implement cookies | 03/02/2022 |  |  |  |
| Implement registration | 07/02/2022 |  |  |  |
| Implement search | 07/02/2022 |  |  |  |
| Populate database with vinyls | 17/02/2022 |  |  |  |
| Implement user functionality | 21/02/2022 |  |  |  |
| Implement admin functionality | 21/02/2022 |  |  |  |
| Refactor design | 24/02/2022 |  |  |  |
| Refactor source code | 28/02/2022 |  |  |  |
| Demonstrate website to lecturer | 01/03/2022 |  |  |  |
| Refactor documentation | 03/03/2022 |  |  |  |
| Submit completed Assessment | 03/03/2022 |  |  |  |

# Site (navigation) Map

Responsive storyboard  
*minimum of 2 viewports shown(eg Mobile and Desktop layout – basic wireframe layout is acceptable)*

# Page summary/description

Homepage:

The home page will have the main company logo, some navigation links ((Login, Register)/(Profile, Basket) and Home) depending on if the user is logged in, a substantial search box and it will show a display of some random vinyl covers as well as displaying the users cover of the week if they have one selected. Its purpose is to enable the user to navigate wherever they want to go as easily as possible.

* At lower resolutions
  + The company banner is replaced with the company logo,
  + The common links are replaced with icons,
  + The cover image is reduced in size and,
  + The company logo, common link icons and cover of the week text are all placed inline at the top of the page.
  + The album showcase will show fewer albums per row and at a certain limit will show 2 album covers per row.
* When the user searches their search will be passed via URL to the search page which will then send the query to the database.
* The user (if logged in) may drag with a mouse or hold then drag with touch controls any album cover to their displayed cover of the week to update it. This will then update their album cover of the week in the database.

Registration:

The registration page will have the main company logo, some navigation links (Login, Register and Home), and the registration form for new users to register. Its purpose is to enable the user to create an account so they can login and purchase/sell vinyls.

* At lower resolutions
  + The company banner is replaced with the company logo,
  + The common links are replaced with icons and,
  + The company logo and common link icons are placed inline at the top of the page.
* The user will be asked to confirm their password and the two entered passwords will be compared to ensure they are the same.
* The password will be encrypted using SHA-512 before being stored in the database.
* A KeyEvent function will be registered on the address input that will capitalise the input address as it is typed.
* When the user submits the form their input will be validated and Prepared Statements will be used to add the validated data to the database, creating a new user.
* Once the user has been successfully registered they will be redirected to their profile page.

Login:

The login page will have the main company logo, some navigation links (Login, Register and Home), and the login form for users to login. Its purpose is to enable the user to login so they can purchase/sell vinyls.

* At lower resolutions
  + The company banner is replaced with the company logo,
  + The common links are replaced with icons and,
  + The company logo and common link icons are placed inline at the top of the page.
* A KeyEvent function will be registered on the address input that will capitalise the input address as it is typed.
* The password will be encrypted using SHA-512 before being sent to the database.
* When the user submits the form their input will be validated by the database against information in the database and if they have supplied valid login information they will be logged in.
* Once the user has been successfully logged in, they will be redirected to their profile page.

Profile:

The profile page will have the main company logo, some navigation links (Profile, Basket and Home), a substantial search box and it will show the users cover of the week if they have one selected. Its purpose is to enable the user to see their profile, browse vinyls they have up for sale and add/remove/update vinyls for sale.

* At lower resolutions
  + The company banner is replaced with the company logo,
  + The common links are replaced with icons and,
  + The company logo and common link icons are placed inline at the top of the page.
* When the user searches it will search within the records they are selling, and their search will be passed via URL to the search page which will then send the query to the database. A hidden textbox will be used to send the users username as part of the query.
* A query will be sent to the database to retrieve all the vinyls the user is selling sorted by the time they were added and these will be paginated and displayed in a grid layout.
* When the user submits the form their input will be validated and Prepared Statements will be used to add the validated data to the database, creating a new user.
* Once the user has been successfully registered they will be redirected to their profile page.

Search:

The registration page will have the main company logo, some navigation links (Login, Register and Home), and the registration form for new users to register. Its purpose is to enable the user to create an account so they can login and purchase vinyls.

* At lower resolutions
  + The company banner is replaced with the company logo,
  + The common links are replaced with icons,
  + The cover image is reduced in size and,
  + The company logo, common link icons and cover of the week text are all placed inline at the top of the page.
* The user will be asked to confirm their password and the two entered passwords will be compared to ensure they are the same.
* A KeyEvent function will be registered on the address input that will capitalise the input address as it is typed.
* When the user submits the form their input will be validated and Prepared Statements will be used to add the validated data to the database, creating a new user.
* Once the user has been successfully registered they will be redirected to their profile page.

Product:

The registration page will have the main company logo, some navigation links (Login, Register and Home), and the registration form for new users to register. Its purpose is to enable the user to create an account so they can login and purchase vinyls.

* At lower resolutions
  + The company banner is replaced with the company logo,
  + The common links are replaced with icons and,
  + The company logo and common link icons are placed inline at the top of the page.
* The user will be asked to confirm their password and the two entered passwords will be compared to ensure they are the same.
* A KeyEvent function will be registered on the address input that will capitalise the input address as it is typed.
* When the user submits the form their input will be validated and Prepared Statements will be used to add the validated data to the database, creating a new user.
* Once the user has been successfully registered they will be redirected to their profile page.

*List your expected pages and purpose.*

*Indicate where you expect to incorporate the following coding examples:*

*Responsive features*

*Any events triggers, Key, Mouse, Touch*

*Prepared Statement*

*Encryption*

*Cookie*

*Touch control example*

*Database: add/delete/update/query*

*Use of passing/obtaining data via the URL*

# Database table design & Data Dictionary

## Considerations / Design Decisions

## ERD Design

## Data Dictionary

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Table name: | | User | | | |
| Field name | Data type | Field Size | Auto Increment | Null | Comments |
| UserID | INT | default | YES | NO | Primary Key |
| Username | VARCHAR | 64 | NO | NO |  |
| Password | VARCHAR | 256 | NO | NO |  |
| Address | VASRCHAR | 256 | NO | NO |  |
| Blocked | BOOL | default | NO | NO |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Table name: | | Album | | | |
| Field name | Data type | Field Size | Auto Increment | Null | Comments |
| AlbumID | INT | default | YES | NO | Primary Key |
| UserID | INT | default | NO | NO | Foreign Key |
| Title | VARCHAR | 64 | NO | NO |  |
| Artist | VARCHAR | 64 | NO | NO |  |
| Price | DECIMAL | (5,2) | NO | NO |  |
| Condition | VARCHAR | 12 | NO | NO |  |
| Genre | VARCHAR | 20 | NO | NO |  |
| Image | VARCHAR | 256 | NO | YES |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Table name: | | Order | | | |
| Field name | Data type | Field Size | Auto Increment | Null | Comments |
| OrderID | INT | default |  | NO | Primary Key |
| UserID | INT | default |  | NO | Foreign Key |
|  |  |  |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Table name: | | OrderEntry | | | |
| Field name | Data type | Field Size | Auto Increment | Null | Comments |
| OrderID | INT | default |  | NO | Foreign Key |
| AlbumID | INT | default |  | NO | Foreign Key |
| Quantity | SMALLINT | default |  | NO |  |

# Test Strategy & Plan

## Test Strategy

## Test Plan & results

*Create a test table to record your testing*

*Test in multiple browsers*

*Test, Test Data, Expected Result, Pass/Error, Comments*