UOW MALAYSIA

PART OF THE UNIVERSITY
OF WOLLONGONG AUSTRALIA
GLOBAL NETWORK

Bachelor of Computer Science (Hons)
Bachelor of Software Engineering (Hons)

Internet & Web Development
XBMC3014N

Prepared by Wong Choon Yee
Semester September 2024

SCHOOL OF COMPUTING & CREATIVE MEDIA

ASSIGNMENT: Group Project

Course Title : Bachelor of Computer Science (Hons)
Bachelor of Software Engineering (Hons)
Course Code : XBMC3014N
Course Lecturer : Wong Choon Yee
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LEARNING OUTCOMES

On completion of this module, the student should be able to:

1. Design a web site or web application and identify the different components required to execute it . (PLO5,C4)
2. Develop a web site or web application and identify the different components required to execute it . (PLO3,P4)
3. Work in groups to present web application developed to show it meets specified requirements (PLO4,A3)

BRIEF

In this project, teams of 3 to 4 members will collaborate to design and develop a dynamic, responsive web-based dashboard using the Internet Movie Database (IMDb) dataset. The aim is to create an interactive platform that visualizes key insights and trends within the movie industry, including top-rated films, genre distribution, gross income, and other relevant data points.

This project constitutes 100% of your course grade and will be evaluated through multiple deliverables over the semester. Assessment will focus on both individual contributions and overall group performance.

Your team will collectively develop a dashboard that presents insights from the IMDb dataset. The dashboard should incorporate interactive features such as filtering, sorting, and searching, allowing users to intuitively explore different aspects of the dataset—such as movie ratings, genres, and release years.

REQUIREMENTS

Basic Features:

1. **Dashboard Layout**
    - A clear, responsive layout that includes a navigation menu, a main dashboard view, and filters for exploring the data.

2. **Basic Data Visualization**
    - Present simple insight, example:
        - Top 10 highest-rated movies.
        - Genre breakdown by percentage.
        - Total number of movies per year.
3. **Basic Interactivity**
    - Allow users to sort data (e.g., by movie rating or release year).
    - Basic filtering options by genre or year.

Intermediate Features:

1. **Advanced Data Visualization**
    - Use advanced charts and graphs to show:
        - Trends in movie releases over multiple years.
        - The most frequent actors/actresses across multiple genres.
        - Ratings distribution across different genres.
2. **Intermediate Interactivity**
    - Allow users to filter data by multiple criteria (e.g., filter by both genre and year simultaneously).
    - Add a search functionality for specific movies, directors, or actors.
3. **Backend Integration**
    - Store and query the IMDB data using server-side technology (e.g., PHP, Node.js) and a database (e.g., MySQL).

Advanced Features:

1. **Data Update Mechanism**
    - Implement real-time or periodic data updates using an API to fetch the latest IMDB data or provide a form for manual updates.
2. **Data Comparison Tools**
    - Allow users to compare multiple movies, genres, or actors in terms of ratings, earnings, or popularity trends.
3. **Advanced Data Visualizations**
    - Integrate more complex data visualizations using libraries like D3.js for interactive, real-time visualizations.
4. **User Authentication**
    - Allow users to create accounts and save their dashboard preferences (e.g., favorite movies, customized filters).
5. **Performance Optimization**
    - Implement performance optimization strategies such as caching frequently used queries or data to improve loading times.

Storytelling with Data:
The dashboard should also demonstrate **effective storytelling with data** by presenting insights that convey a clear and engaging narrative. Students should structure the presentation of the data in a way that communicates meaningful trends and comparisons, allowing users to gain actionable insights. The narrative should:

- Highlight key points (e.g., top-performing movies, trends over time).
- Be structured with a clear introduction, core message, and conclusion based on the data.
- Use visuals to enhance the narrative and avoid overwhelming the user with excessive information.

Dataset:
The IMDB dataset will be provided to you in CSV format. You will need to preprocess and import this data into your database for use in the dashboard.

You are encouraged to submit your app that includes database-oriented CRUD's four basic functions but is not limited to the other advanced features.

ASSESSMENT CRITERIA

1. If you do not attend the proposal or Presentation, the maximum mark you can achieve for this assignment is **40%**.
2. Your submission should include the following items:
    - Proposal Presentation (20%)
    - Group Project (60%)
    - Project Presentation (10%)
    - Progress Report (10%)

Please refer to the marking rubric for further details

RESOURCES

Credit all sources you use, including photos, graphics, logos, widgets, and text. If you created your own graphics or took photos, credit yourself. Do not submit prototype from other sources as your own, as this constitutes plagiarism and will result in a grade of 0 for the assignment. The module team is aware of internet sources and recognizes the sharing and reuse of code in the coding community. The goal of this assignment is to demonstrate your skills, not your ability to copy others' code.

HAND-IN REQUIREMENTS

Hand in all components through Open Learning by the due date listed in this assignment brief. Late submissions will receive full marks, but will be penalized 10% per day after the deadline. NOTE – You can always hand in the work early.

Team leader:

1. Proposal Presentation (20%)
2. Group Project (60%)
3. Project Presentation (10%)
4. Progress Report (10%)

Name all files using your student ID and name, e.g. PeerAssessment0123456MaryJane.doc or IWD-Group1.zip.

REFERENCES

1. Do not include references in your word count.
2. References must be in APA format. Recommended to use Mendeley for auto generation of the citation.
3. Please use ACM or IEEE portal for research journals.
4. Font Times New Roman or Arial, 11 points font, 1.15-line spacing, and justified format.

DUE DATE:

- Proposal (20%): 23 October 2024
- Final Project (60%): 27 November 2024
- Project Presentation (10%): TBA
- Progress Report (10%):
  - Analysis, Design & Task Allocation (2%): 09 October 2024
  - Implementation & Task Allocation (3%) : 30 October 2024
  - Critical Review (5%) : 06 December 2024

ASSESSMENT RUBRIC: Proposal Presentation (20%)

Proposal Presentation (20%)						
Criteria	**Very Poor (0-2)**	**Poor (3-4)**	**Average (5-6)**	**Good (7-8)**	**Excellent (9-10)**	**Marks**
Introduction	Fulfilled 0 - 1 of the excellent elements.	Fulfilled 2 of the excellent elements.	Fulfilled 3 of the excellent elements.	Fulfilled 4 of the excellent elements.	1. Introduction: a. Clear articulation of the purpose and goals of the dashboard website. b. Identification of the target audience and their needs. 2. Problem Statement and Justification: a. Clearly defined problem statement related to habit tracking. b. Justification for why a dashboard website is needed. c. Support with infographic.	
Functional specification	Fulfilled 0 - 1 of the excellent elements.	Fulfilled 2 of the excellent elements.	Fulfilled 3 of the excellent elements.	Fulfilled 4 of the excellent elements.	1. Comparison tables of 3 similar web apps. 2. Comprehensive set of comparison criteria for 3 apps. 3. Highlighting the uniqueness of each web app. 4. Clearly outlining the main functional specifications. 5. Clearly outlining the sub-functional specifications.	
Wireframe	Fulfilled 0 - 1 of the excellent elements.	Fulfilled 2 of the excellent elements.	Fulfilled 3 of the excellent elements.	Fulfilled 4 of the excellent elements.	1. Clarity and Simplicity 2. Navigation and User Flow 3. Content Representation 4. Functionality and Interaction 5. Consistency with Design Principles	

ASSESSMENT RUBRIC: Group Project (60%)

Group Project (60%)						
Criteria	**Very Poor (0-2)**	**Poor (3-4)**	**Average (5-6)**	**Good (7-8)**	**Excellent (9-10)**	**Marks**
Design & Usability Elements	Fulfilled 0 - 1 of the excellent elements.	Fulfilled 2 of the excellent elements.	Fulfilled 3 of the excellent elements.	Fulfilled 4 of the excellent elements.	1. Purpose and Goals: a. Clearly define the purpose of your website and its goals. b. Understand your target audience and tailor the design to their needs. 2. Clarity: a. The dashboard layout clear and intuitive. b. Allowing users to easily navigate. 3. Responsive Design: a. Ensure your website is responsive and works well on various devices (desktops, tablets, smartphones). 4. Aesthetic Appeal: a. Hierarchy of information & proper use of typography. b. Use a cohesive colour scheme that aligns with your brand and is visually appealing. 5. Images and Graphics: a. Use images and graphics that enhance the visual appeal. b. Optimize images for fast loading times.	

Functionality & Interactivity	Fulfilled 0 - 1 of the excellent elements.	Fulfilled 2 of the excellent elements.	Fulfilled 3 of the excellent elements.	Fulfilled 4 of the excellent elements.	1. Filtering: Can users filter data effectively (e.g., by genre, year, rating) to explore the dataset? 2. Sorting: Are users able to sort data based on various criteria (e.g., highest-rated movies, alphabetical order)? 3. Search Functionality: Does the dashboard include a search feature for finding specific movies, actors, or directors? 4. Dynamic Interactions: Are interactive elements, such as dropdowns or sliders, functioning smoothly without lag? 5. User Feedback: Is there feedback (e.g., loading indicators, messages) provided to users when actions are performed?	
Data Handling & Integration	Fulfilled 0 - 1 of the excellent elements.	Fulfilled 2 of the excellent elements.	Fulfilled 3 of the excellent elements.	Fulfilled 4 of the excellent elements.	1. Data Storage: Is data stored efficiently in a database (e.g., MySQL, MongoDB), with proper data management? 2. Data Querying: Are queries optimized for fast retrieval and accurate results, even with large datasets? 3. Backend Integration: Is server-side integration (e.g., PHP, Node.js) effectively implemented to manage data flow? 4. Data Preprocessing: Has the dataset been properly cleaned, organized, and imported into the system? 5. Error Handling: Are there mechanisms to handle data errors or missing data, ensuring the system remains functional?	
Storytelling with Data					1. Data Narrative: Does the dashboard provide a clear narrative or story that helps users make sense of the data? 2. Key Insights: Are the most important insights highlighted, guiding the user toward meaningful conclusions? 3. Data Visualization: Are charts, graphs, and tables used effectively to enhance the story being told? 4. Structure: Is the data presented in a logical sequence, with an introduction, key message, and conclusion? 5. Engagement: Does the dashboard engage users, making data exploration easy and insightful without overwhelming them?	

Basic Functions:	Fulfilled 0 - 1 of the excellent elements.	Fulfilled 2 of the excellent elements.	Fulfilled 3 of the excellent elements.	Fulfilled 4 of the excellent elements.	1. Sorting: Is data sorting functional for basic columns like movie ratings, release dates, or titles? 2. Filtering by Year/Genre: Can users filter the dataset by simple criteria, such as year or genre? 3. Basic Data Visualization: Are basic charts (e.g., bar charts, pie charts) included to visualize key metrics? 4. Navigation: Does the dashboard have a functional navigation menu that helps users explore different sections? 5. Static Data Display: Can users see a static display of important data points, such as top-rated movies or total movies released?	
Intermediate Functions:	Fulfilled 0 - 1 of the excellent elements.	Fulfilled 2 of the excellent elements.	Fulfilled 3 of the excellent elements.	Fulfilled 4 of the excellent elements.	1. Multi-Criteria Filtering: Can users filter data by multiple criteria simultaneously (e.g., filtering by genre and year)? 2. Advanced Data Visualization: Are more complex charts or graphs (e.g., line charts, histograms) included? 3. Search: Is there a functional search bar that allows users to search for specific movies, actors, or directors? 4. User Preferences: Are user preferences (e.g., saved filters, favorite lists) implemented to personalize the experience? 5. Interactive Visualizations: Do visualizations respond to user interactions, such as hovering or clicking to reveal more information?	
Advanced Functions:	Fulfilled 0 - 1 of the excellent elements.	Fulfilled 2 of the excellent elements.	Fulfilled 3 of the excellent elements.	Fulfilled 4 of the excellent elements.	1. Data Updates: Is there an API or mechanism to update the dataset in real time or periodically? 2. User Authentication: Can users create accounts and save their dashboard preferences or data views? 3. Comparison Tools: Are there tools that allow users to compare movies, genres, or income side by side? 4. Performance Optimization: Have performance optimizations been implemented to improve loading times and data processing speed? 5. Real-Time Visualization: Are there advanced, real-time visualizations that display live or constantly updating data?	

ASSESSMENT RUBRIC: Presentation (10%)

Presentation (10%)						
Criteria	**Very Poor (0-2)**	**Poor (3-4)**	**Average (5-6)**	**Good (7-8)**	**Excellent (9-10)**	**Marks**
Clarity of Content	Fulfilled 0 - 1 of the excellent elements.	Fulfilled 2 of the excellent elements.	Fulfilled 3 of the excellent elements.	Fulfilled 4 of the excellent elements.	1. Explanation of Key Features: How well does the team explain the main features of the dashboard? 2. Clarity in Communication: Is the content presented in a clear and logical manner? 3. Use of Examples: Are examples provided to clarify complex ideas or features? 4. Relevance of Content: Does the presentation stay focused on relevant aspects of the project? 5. Simplification of Technical Concepts: Are complex technical aspects explained in a simple, understandable way?	
Engagement & Delivery	Fulfilled 0 - 1 of the excellent elements.	Fulfilled 2 of the excellent elements.	Fulfilled 3 of the excellent elements.	Fulfilled 4 of the excellent elements.	1. Audience Engagement: Does the team actively engage the audience through questions or interaction? 2. Confidence & Fluency: Is the presentation delivered confidently and fluently, with minimal pauses or hesitations? 3. Body Language & Eye Contact: Do the presenters use appropriate body language and maintain eye contact? 4. Team Collaboration: Do all members contribute evenly to the presentation, showing good collaboration? 5. Handling of Distractions: How well do the presenters handle interruptions or distractions during the presentation?	

Visual Aids & Demonstration	Fulfilled 0 - 1 of the excellent elements.	Fulfilled 2 of the excellent elements.	Fulfilled 3 of the excellent elements.	Fulfilled 4 of the excellent elements.	1. Use of Visual Aids: Are visual aids (slides, graphs, or diagrams) used effectively to complement the spoken content? 2. Live Demonstration: Is the dashboard demonstrated live, showing key features and functionality? 3. Visual Quality: Are the visual aids and demo clear, easy to follow, and visually appealing? 4. Flow of the Demonstration: Does the demo proceed logically, with smooth transitions between features? 5. Relevance of Visual Aids: Do the visual aids and demo align with and enhance the points being made?	
Structure & Organization	Fulfilled 0 - 1 of the excellent elements.	Fulfilled 2 of the excellent elements.	Fulfilled 3 of the excellent elements.	Fulfilled 4 of the excellent elements.	1. Introduction: Is there a clear introduction outlining the project's objectives and purpose? 2. Logical Flow: Does the presentation follow a clear and logical structure (introduction, demo, conclusion)? 3. Time Management: Is the presentation well-timed, covering all key points without rushing or going over time? 4. Transitions: Are transitions between different sections of the presentation smooth and coherent? 5. Conclusion: Is there a clear and concise conclusion summarizing the project's outcomes and insights?	

ASSESSMENT RUBRIC: Progress Report (10%)

Progress Report (10%)						
Criteria	**Very Poor (0-2)**	**Poor (3-4)**	**Average (5-6)**	**Good (7-8)**	**Excellent (9-10)**	**Marks**
Progress report 1: Analysis, Design & Task Allocation (2%)	Fulfilled 0 - 1 of the excellent elements.	Fulfilled 2 of the excellent elements.	Fulfilled 3 of the excellent elements.	Fulfilled 4 of the excellent elements.	1. Comprehensive Progress Update. 2. Quality of Deliverables: 3. Task Allocation and Timeline. 4. Communication and Collaboration. 5. Adaptability and Problem Resolution.	/2
Progress report 2: Implementation & Task Allocation (3%)	Fulfilled 0 - 1 of the excellent elements.	Fulfilled 2 of the excellent elements.	Fulfilled 3 of the excellent elements.	Fulfilled 4 of the excellent elements.	1. Comprehensive Progress Update. 2. Quality of Deliverables: 3. Task Allocation and Timeline. 4. Communication and Collaboration. 5. Adaptability and Problem Resolution.	/3
Progress report 3: Critical Review (5%)	Fulfilled 0 - 1 of the excellent elements.	Fulfilled 2 of the excellent elements.	Fulfilled 3 of the excellent elements.	Fulfilled 4 of the excellent elements.	1. Comprehensive Progress Update. 2. Quality of Deliverables: 3. Task Allocation and Timeline. 4. Communication and Collaboration. 5. Adaptability and Problem Resolution.	/5