ICTPRG302 - Apply introductory programming techniques

DESIGN DOCUMENT	
Student Name	
Workplace/Organisation	Bounce Fitness
Date Prepared	
State/Territory	

Work Brief Requirements

Application to Develop	Bounce Fitness Connect
Task Objectives *Include ALL task objectives for the application* [Approximate word count: 20 – 40 words]	1. Enhance member engagement through a user-friendly interface for class schedules, bookings, and fitness tracking. 2. Develop an admin portal for staff to manage memberships, track attendance, and update class schedules.
Task Deadline *This must be within your assessment period.*	DD>MM>YY

Requirements for the Application *This refers to the specific considerations that must be included in the design and development of the application (e.g., colour schemes, features)*	• Utilise Bounce Fitness' brand colours, • Ensure the application is responsive across different devices, • Prioritise security and privacy, focus on user experience, and • Integrate a robust booking system.

Task Requirements

Actions to Take *Write actions in the order that they must be taken*	Priority
a. Gather project requirements and finalise the project plan.	High
b. Set up the development environment with VS Code.	High
c. Design the user interface incorporating Bounce Fitness' brand colours.	High
d. 	Medium

	Implement member engagement features (class schedules, booking, fitness tracking).	
e. Develop the admin portal for employee management.		Medium
f. Conduct initial testing for functionality and user experience.		Medium
g. Integrate feedback and finalise the application for beta testing.		Low
Programming Software to Use	Visual Studio Code (VS Code)	
Required Hardware [Approximate word count: 20 – 40 words]	Standard development computers with internet access, sufficient RAM, and processing power to handle the development and testing of the application.	

Design Specifications

Assessor Instructions:

At a minimum, this must include **ALL of the following:**

a.   User interface design

b.   Functional requirements

c.   Performance considerations

d.   Data structures and storage

e.   Error handling and exception handling

f.   Security and access controls

g.   Testing and quality assurance

h.   Integration and compatibility

The acceptable responses must:

•   Be within the specified word limit.

• Reflect the characteristics described in the exemplar answer.	
User Interface Design *This refers to how the software will look* [Approximate word count: 10 – 30 words]	The software will have a clean, intuitive design, using Bounce Fitness' brand colours (#82D4DF, #2C2F36, etc.), optimised for both mobile and web platforms.
Functional Requirements *This refers to the features and functions that the application must provide* [Approximate word count: 10 – 30 words]	Class schedules and booking system, fitness progress tracking for members, admin dashboard for staff.
Performance Considerations *This refers to aspects of the application that ensure it performs optimally.* [Approximate word count: 5 – 10 words]	Application optimised for speed, responsive design, and scalable architecture.
Data Structures and Storage *This refers to how data will be collected, processed, stored and retrieved.* [Approximate word count: 10 – 30 words]	Use of SQL or NoSQL databases for storing user profiles, class schedules, bookings, and fitness progress data.
Error and Exception Handling *This refers to how the application handles and responds to errors, exceptions or unexpected events.* [Approximate word count: 10 – 30 words]	Implementation of robust error handling mechanisms for a seamless user experience.

Security and Access Controls *This refers to aspects of the application that ensure user data protection and access control methods.* [Approximate word count: 10 – 30 words]	Implementation of encryption for data storage and secure login mechanisms with multi-factor authentication.
Testing and Quality Assurance *This refers to testing procedures to ensure the application meets the specified functionalities and standards.* [Approximate word count: 10 – 30 words]	Use of automated testing tools for unit and integration tests and manual testing for user experience.
Integration and Compatibility *This refers to the requirements needed to integrate the application to other platforms.* [Approximate word count: 10 – 30 words]	Ensure compatibility across various browsers and mobile platforms and integration with existing Bounce Fitness systems.

Add more rows as necessary

Programming Standards and Guidelines

Programming Standards

Include two (2) programming standards applicable to the task.

Assessor Intrsuctions:

Student must identify at least two programming standards applicable to the task.

The acceptable responses must:

- Reflect the characteristics described in the exemplar answer.

a.
Naming Conventions: Use meaningful names for variables and methods; camelCase for variables, PascalCase for classes.

b.
Code Formatting and Indentation: Maintain consistent indentation (two spaces), place braces on the same line.

Add more tables as necessary

Programming Guidelines
Include two (2) programming guidelines applicable to the task.
Assessor Intrsuctions:
Student must identify at least two programming guidelines applicable to the task.
The acceptable responses must:
• Reflect the characteristics described in the exemplar answer.

a.
Flexibility in Naming Conventions: While adhering to general rules, flexibility is allowed based on project specifics.

b.
Code Formatting and Readability: Encourage readable code with consistent formatting, allowing some developer discretion.

Add more rows as necessary

Algorithm Design

Control Structure	User Authentication	Class Scheduling and Booking
This refers to mechanisms or constructs that decide how the code will be executed. Appropriate control structures must be based on		

the application's objectives.		
All Variables to be Included *Variables and arguments refer to parameters that define what action the code will take.*		
All Arguments to be Included *Variables and arguments refer to parameters that define what action the code will take.*		
What Each Control Structure Does *This must be a brief summary detailing the outcome achieved by the control structure.* [Approximate word count: 40 – 60 words]		
How Control Structure Achieves Task Objectives *This must be based on the objectives for the application* [Approximate word count: 10 – 30 words]		

Control Structure Design *This refers to a visualisation of how the control structure will look like (e.g., using flowcharts or mind mapping)* [Approximate word count: 50 – 60 words]		

Add more tables as necessary

END OF DESIGN DOCUMENT