FIT5042 Assignment Portfolio V1.0

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INTERNET APPLICATIONS DEVELOPMENT

OVERVIEW:

1. Portfolio Background and Description

FIT5042 Assignment portfolio comprises four deliverables: **Design Report**, **JEE web application**, **Research Report** and the **Learning Summary.**

Assume that you work for an Australian Local Indigenous Heritage Non-Governmental Organisation (NGO) (**LocalHeritage Pty Ltd)** in Melbourne. You are responsible to design and develop a (fictitious) web application for the workers of the company and members of the public that interact with the system Research on different technologies to meet the organisation's future business requirements.

Your customer is a local **Indigenous Heritage NGO** with around 100 staff. Your customer is aiming to launch a new Web Application to support workers and end users.

The rest of this specification is organised into two parts: 1) the business requirements, and 2) the instructions on how you should approach this task and grading method.

2. Business requirements

The new Web Application must be able to meet the following business requirements:

BUSINESS REQUIREMENT (A):

BR (A.1): Development Stack

The new Web Application must be developed using JEE and built in Java DB (Derby).

BUSINESS REQUIREMENT (B):

BR (B.1): Visual Design

The new Web Application must have a consistent look and feel. A navigation bar (on each page) should provide quick links to other pages.

BUSINESS REQUIREMENT (C):

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BR (C.1): Validations

The new Web Application must implement validations with minimum two types of validations.

BR (C.2): Database Table

The new Web Application must have Two or more tables linked with foreign keys, Persistence managed using persistence API. Use JPQL to retrieve data.

A variety of data types should be used, e.g. Integer, String, double, Date, Array, etc …

BR (C.3): Search Functions

The new Web Application must be able to search results of at least two tables, with headings of columns shown in results. A selection of columns should be returned (not all columns in table).

BR (C.4): Web Clients

Implemented in JSF

BUSINESS REQUIREMENT (D):

BR (D.1): Authentication

The new Web Application must have authentication mechanism to provide confidentiality (implemented using JAAS).

BR (D.2): Role based authentication

The new Web Application must have role-based authentication mechanism with minimum two roles to facilitate CRUD.

BR (D.3): CRUD (Create, Update, Delete and View)

All roles (of registered users) in Web Application should have relevant CRUD features of data they own.

BR (D.4): EJBs

EJBs should be used in Web Application to manage interaction between clients and database. Different examples of BOTH Criteria API and JPQL should be used for data retrieval.

BR (D.5): Additional Validations

The new Web Application must implement additional two types of validations, e.g. checking for Dates, emails, phone numbers, two passwords same when changing passwords etc.

BUSINESS REQUIREMENT (E):

BR (E.1): Combination Search

Search for data in tables using a combination of fields selected by user.

BR (E.2): Web Service

Illustrate the use of a RESTful Web Service in your application.

BR (E.3): JavaScript Frameworks / Ajax

Implement a business feature demonstrating a JavaScript Framework/Ajax etc.

BR (E.4): Inheritance Mapping

Demonstrate mapping of inheritance to database.

BR (E.5): Bean Validations

Also use Bean based validation (as well as other forms listed above).

Note: All users in the JEE system should have already been registered. There is no need to implement a user registration feature (unless you want to for fun)

3. Instructions and Grading Method

You must select any one of the recommended services to demonstrate your web development skills while meeting the above business requirements:

- Native Plants
- Native Insects
- Native Animals
- Native Artifacts (Historical or Modern)
- Heritage Locations
- Any other innovative service as approved by Tutor

A **stepped approach is mandated** to implement the new JEE Web Application. Before you move on to implement a higher-level business requirement i.e. BR (A) towards BR(E), you will need to show your tutor your work for feedback first. The following table outlines grading overview:

Deliverables	Grade
Final Learning Summary from EFolio	Mandatory
BR (A1) and BR (B1)	C → C+
BR (C1, C2, C3, C4)	C+ → C++
BR (D1, D2, D3, D4, D5)	D → D++
BR (E1, E2, E3, E4, E5)	HD → HD+
Research report	HD+ → HD++
Final Demonstration	Mandatory for D/HD

Please refer to the Design report, Research report and Learning Summary templates in Moodle.

DEVELOPMENT HINTS (IN ADDITION TO LECTURE AND STUDIO MATERIALS)

- Log in Authentication should use JAAS

SUBMISSION AND DEMONSTRATION

You will be given the opportunity to show your interim work to your tutor during the studio sessions or during the consultation times. This will give you an opportunity to fix issues and improve. You will receive feedback on Assignment Portfolio in Week 4 (Credit level design), Week 7 (Credit level code) and Week 10 (D/HD level design and code). To receive feedback on time, please upload draft work in the EFolio.

The final assignment portfolio (Design Report, **JEE web application**, **Research Report** and the **Learning Summary) submission is due in Moodle at the end of Week 12.**

In FIT5042 All P/C demos should be completed in Week 12 or before. D/HD demos can be completed in Week 13.