

**Read the below instructions carefully before you start.**

- Software Requirement: Apache NetBeans 17, MS SQL Server 2008 R2+ or higher, Java SE Development Kit 17, Apache Tomcat 10.1.x.
- Download the given material then unzip.
- You receive folders: Q1\_XXX (1) and Q2\_XXX (2) ... They are template for your corresponding exam questions. Q1\_XXX used for question number 1 and Q2\_XXX for question number 2 and so on. Open them as NetBeans project, replace XXX by [your student ID], e.g. Q1\_SE1111, Q2\_SE1111, Q3\_SE1111. Change the context application to new name, e.g. /Q1\_SE1111/Index.html instead of /Q1\_XXX/Index.html. **Your work will not be considered for grading if this condition is not satisfied.**
- Template project already contains the **DBContext.java** (3) to source package (src\java\dal) under folder (2), (3).
- You **MUST** use **DBContext.java** for your database activities. Update your database connection string by filling values for instance variables in the **constructor**.
- All allowed libraries including jdbc 6.0 and jakarta jstl 2.0 are already added to your given NetBeans projects, you are **NOT** allowed to change or add more libraries.

On completion, read submission guide carefully.

**Note:** In case you cannot submit the exam due to your submission folder contains more than 10MB. Open Netbeans > right click on the project icon > Clean. It would help if you did it for all questions. Netbeans will delete the .class files and reduce the size of your projects.

### **Question 1: (2.5 points)**

You are given a NetBeans template project.

Your tasks

- Edit index.html to create a web page

Enter an integer:

Your tasks: Assume that users fill an integer into the textfield

1. When users click “RESET” button, set value of textfield is empty. **(0.5 point)**
2. When users click “FIBO” button, the browser makes a request to **/fibo** using Post method (The Servlet is configured in web.xml) **(0.5 point)**:
  - a. Check input: If users input the number that is not an integer number $\leq 1$ , show the error message *"You input wrong"* to servlet. Otherwise, make the request b. **(0.5 point)**

- b. Displays the first fibo sequence corresponding to the entered number and output the result to servlet. **(1.0 point)**

**Question 2: (2.5 points)**

You are given a NetBeans template project:

Your tasks

- Add q2.jsp to create a web page (*If interface is not edited according to the exam requirements. The remaining parts will not be graded*). **(0.5 point)**

INFORMATION OF STUDENT

Code:

Name:

Date Of Birth:

Gender: ☒ Male ☐ Female

Major

List of FPT Students:

Code	Name	Date of Birth	Gender	Major
------	------	---------------	--------	-------

**Major:** (Software Engineering, Business Administration, Information Assurance, Multimedia Communications).

- Assume that users fill an integer into the textfield, when users click “Add Student” button:

**a. Check input**

- If users input the value of Code existed in the list, show the error text “Code existed”. **(0.5 points)**
- Gender is shown by avatar **(0.5 points)**

Otherwise, make the request b.

**b. Add information to the “List of FPT Students” (1.5 point)**

**Question 3: (5.0 points)**

**IMPORTANT – before you start doing your solution, MUST do the following steps:**

1. Create your MS SQL database named **Workshop2** by running code in script **Workshop2.sql**.
2. You **MUST** use **DBContext.java** for your all database connection.

You are given a database script, execute the script to get the database as shown in below figure:

You are given a NetBeans template project (read more detail in the first page).

You are asked to build a web application using the given database.

1. User can type **/show** (/ represents your web application context path) to access Show Students Page (**0.5 point**).

LIST OF ID STUDENTS	INFORMATION OF STUDENT	
<a href="#">HE05001</a>	ID:	<input type="text"/>
<a href="#">BA05003</a>	Name:	<input type="text"/>
<a href="#">IA05008</a>	DATE OF BIRTH	<input type="text"/> <input type="button" value="CHOSE"/>
<a href="#">MC05603</a>	GENDER	<input type="text"/>
<a href="#">HE05102</a>	MAJOR	<input type="text"/>

- Display the interface as above (execuding data taken from the database) (**0.5 points**)
  - The table LIST OF ID STUDENTS are loaded from [Students] table (**1.0 points**)
2. When a user clicks the link (include ID of Student), the corresponding information of that student will be displayed in the texts in “INFORMATION OF STUDENT”(1.5 points). **Major** is taken from [MajorName] in the [Major] table that corresponds to the MajorID in the [Students].
  3. When a user clicks “**CHOSE**” button, display all students in the table below with the same major as the student in the table “INFORMATION OF STUDENT” (**1.5 points**)