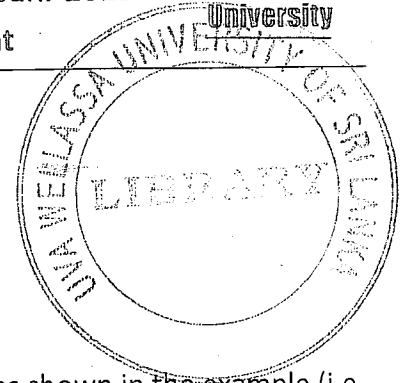
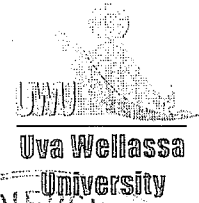


Uva Wellassa University of Sri Lanka  
Faculty of Science and Technology  
Department of Computer Science and Technology  
200 level 2<sup>nd</sup> Semester Examination – Dec.-2018/Jan.-2019  
CST226-3 Rapid Application Development



**Instructions to candidates**

**Duration:** Two (02) hours

**Number of questions:** Three (03)

**Mark allocation:** 100

**Answer all the questions**

Create a separate project/solution for each question.

You need to upload the project/solution folder as a ZIP file to the VLE.

When you are uploading, rename the ZIP file with your 'Index Number' as shown in the example (i.e. UWU\_EX\_14\_XXXX).

**Download 'Resources' ZIP file from the VLE for the database queries and required images.**

1. Uva Wellassa University is requested to build an application to facilitate their distance learners to access university resources. The development team decided to build a **Standalone Java Application** to cater these requirements. The team is following the Scrum methodology and followings are the interfaces that development team agreed to release during their first sprint. Implement following interfaces and functionalities to deliver the first release successfully. (The database script of the application and the screenshots of the application interfaces are available in the 'Resources' ZIP file.)

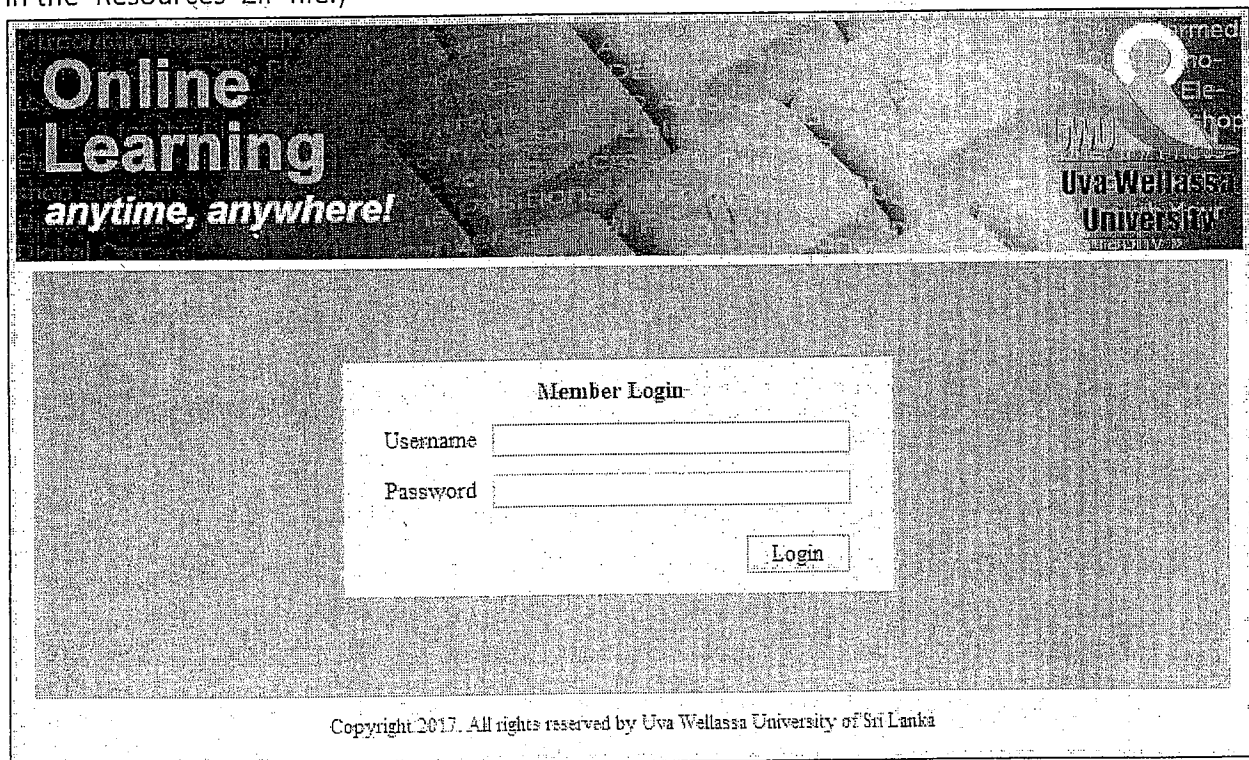


Figure 01: Login Interface

In the 'Login' interface (Figure 01), 'Username' should be a text field and 'Password' should be a password field. When the user clicks on 'Login' button in the interface, the system should check whether the entered username and password is matched with the database. If it is matched, then

the application should check the user type ('Ins' or 'Stu'). 'Ins' type user should get the 'Instructor' interface (Figure 02) and 'Stu' type user should get 'Student' interface (Figure 03). If the entered details are incorrect, then the application should show an error message to the user (i.e. Invalid login, try with correct username and password).

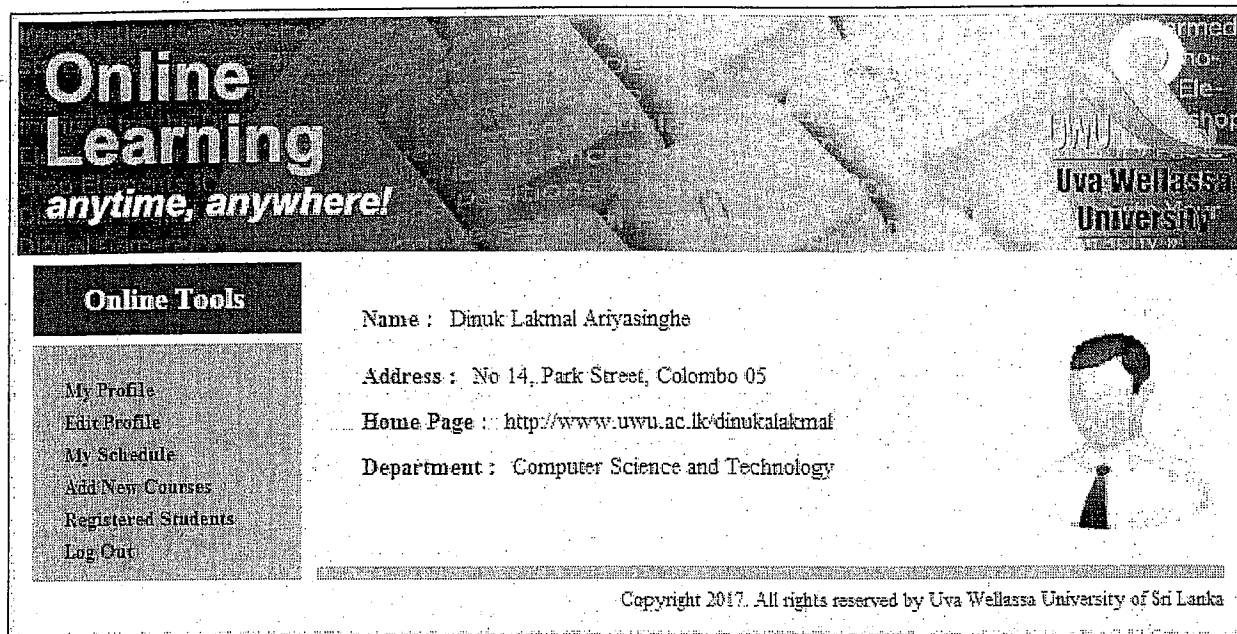


Figure 02: Instructor Interface

In the 'Instructor' interface (Figure 02), 'Name', 'Address', 'Home Page' and, 'Department' values are labels and values for these labels (i.e. Dinuk Lakmal Ariyasinghe) should be loaded from the database. The 'Panel' controller is used to design separate sections within the interface and 'My Profile', 'Edit Profile', 'My Schedule', 'Add New Courses', 'Registered Students' and 'Log Out' are labels.

In the 'Student' interface (Figure 03), 'Name', 'Address', 'Home Page', 'Department', 'Enrolled Year' and, 'Email' values are labels and values for these labels (i.e. Ishanka Sadakalum Bandara) should be loaded from the database. The 'Panel' controller is used to design separate sections within the interface and 'My Profile', 'Edit Profile', 'Register Courses', 'View Grades', 'Courses By Period' and, 'Log Out' are labels.

**Note:**

- Use 'Integer.parseInt (<string>)' to convert string value into an integer value.
- Use 'showMessageDialog()' method of 'JOptionPane' class to show messages.
- When you are making 'setVisible(true)' for an interface, you can pass some value to the new interface from the previous interface through a parameter passing (i.e. new Home(*the value you need to pass*).setVisible(true);).
- Create a database called 'vle' before executing the database queries (you can find the database in the 'Q1\_SQL.txt' file under 'Resources' ZIP file).

**Online Learning**  
*anytime, anywhere!*

**Uva Wellassa University**

**Online Tools**

- My Profile
- Edit Profile
- Register Courses
- View Grades
- Course By Period
- Log Out

Name : Ishanka Sadakalum Bandara

Address : No 75, Bazar Street, Badulla

Home Page : <http://www.uwu.ac.lk/students/ishankasadakalum>

Department : Computer Science and Technology

Enrolled Year : 2015

Email : [isb@uwu.ac.lk](mailto:isb@uwu.ac.lk)

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Figure 03: Student Interface

(50 mark)

- The company ABC requested to create a Q and A forum for their web site, which help company customers to discuss their queries. The current website is built with Java Servlet, therefore, you are requested to implement the following application using **Java Servlet technology**.

**ABC Company Q and A Forum**

Type your question here:

Send

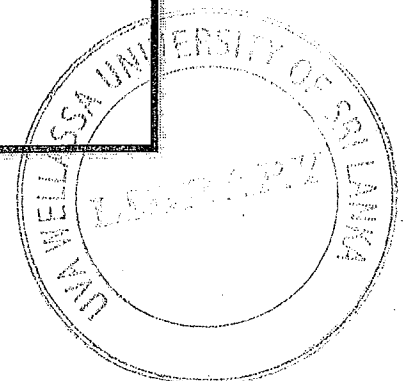
Is this your searching for:

[How to find product price?](#)

[How to find expiry date?](#)

[How to open this?](#)

Figure 04: Servlet Interface



- a. Design the Servlet page according to Figure 04.
- b. Implement the functionality of 'Send' button to save these field values to the given database.

Note:

- Use 'index.html' page to add a hyperlink to the Servlet Interface.
- The 'Send' button will save the question to the 'question' table (you can find the database in the 'Q2\_SQL.txt' file under 'Resources' ZIP file).
- Under "Is this your searching for:" section will list previously asked questions as hyperlinks and should to load these question titles from the 'question' table.

(20 mark)

3. The Uva Wellassa University is requested to build a Standalone Application to facilitate the Student Affairs division of the University. The development team decided to build a **Windows Forms application using Visual C#** to cater this requirement.

Figure 05: Add Profile Interface

In the interface (Figure 05), First Name, Middle Name, Last Name and Enrolled Year are text-boxes, Male and Female are radio buttons, and Address is a text-area.

- a. Design the interface according to Figure 05.
- b. Implement the functionality of 'Add' button to save these field values to the given database.

Note:

- Use a Windows 'MessageBox' to show the success and error messages.
- Create a database schema as 'studentaff' in SQL Server and use the query given in the 'Q3\_SQL.txt' file under 'Resources' ZIP file to create the 'profile' table inside the database to store these relevant information.

(30 mark)