CMPU 102 Computer Science II
Assignment 10

“What have you been doing all semester? Why are you always staring at that computer screen?” No doubt you have grown weary of hearing your friends ask these questions over and over. Now you can show them the fruits of your labor. In this assignment you will develop an HTML document (ApplicationDemoApplet.html) and a Java applet (ApplicationDemoApplet) that will let you run your programs from remote locations over the internet, using a web browser. Your HTML document should include a brief description of the programs to be demonstrated, along with an invocation of the applet that demonstrates the programs. The applet should include two components with which the user can interact: (1) A drop down menu from which the user may select an application program; (2) A button that the user may press to launch the selected application. The applet will be implemented by two classes. The class ApplicationDemoApplet will implement the applet itself. The class ApplicationThread will implement the thread in which the selected application program will run. The design and implementation of these two classes is described below.

The class ApplicationDemoApplet will extend JApplet (so it will be an applet) and will implement ActionListener (so it can be registered as a handler for ActionEvents). It will include two methods:

• public void init(): This method will initialize the applet’s user interface. The method should construct a JComboBox to implement the drop-down menu of application programs. The combo box should be attached to a JPanel object with a border. The method should also construct a JButton object attached to a JPanel object with a border, to allow the user to launch the selected application. The applet should register itself as an action listener on the launch button. The two JPanel objects should be attached to the applet’s content pane, in an arrangement governed by a GridLayout manager.

• public void actionPerformed(ActionEvent e): This method will be invoked when the user clicks on the launch button. It should access the combo box (saved in an instance variable) to determine which application was selected. It should construct an ApplicationThread object, passing the constructor an integer representing the application program that was selected. Finally, it should call the application thread’s start() method to launch the application program.

The program LunarPhases.java shows you how to construct a combo box and later determine the index of the menu item currently selected in the combo box. The program SwingApplication.java shows you how to construct a button and register an action listener on it. The program LunarPhases.java shows you how to construct a panel, put a border on it and attach a component to it. This program also shows you how to attach multiple panels to a content pane and use GridLayout manager to determine their arrangement.

The class ApplicationThread will extend the class Thread. This class will have one constructor method that takes an integer representing the application that the user selected to run. The constructor should simply store this parameter in the instance variable choice. This class will also have a void run() method. This method will invoke the start method of the class corresponding to the user’s choice.

You will need to make a web (HTML) page that launches your applet. Since your program uses the ACM Student Package, you will need to make the acm.jar file available on your web site. You can find an example of an applet that uses the ACM package here: https://vspace.vassar.edu/thellman/web/102/applets/ACMProgramApplet.html. The NetBeans project for this applet is included in the files for this assignment.

Your applet should demonstrate at least three programs that you wrote this semester.