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Database System

NetBeans IDE
and
Introduction to Database Application Development

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Introduction to NetBeans IDE

- The NetBeans IDE is one of the most current and updated IDEs and widely implemented in a wide spectrum of Java applications.
- The NetBeans IDE is actually written in Java and runs every-where where a Java Virtual Machine (JVM) is installed, including Windows, Mac OS, Linux, and Solaris.
- A Java Development Kits (JDK) is required for Java development functionality, but is not required for development in other languages.
- The NetBeans project consists of an open-source IDE and an application platform that enable developers to rapidly create web, enterprise, desktop, and mobile applications using the Java platform, as well as JavaFX, PHP, JavaScript and Ajax, Ruby and Ruby on Rails, Groovy and Grails, and C/C++.

The NetBeans Platform

- The NetBeans Platform is a broad Swing-based framework on which you can base large desktop applications. The IDE itself is based on the NetBeans Platform. The Platform contains APIs that simplify the handling of windows, actions, files, and many other things typical in applications.

- The NetBeans platform offers reusable services common to desktop applications, allowing developers to focus on the logic specific to their application. Among the features of the platform are:

  - User interface management (e.g. menus and toolbars)
  - User settings management
  - Storage management (saving and loading any kind of data)
  - Window management
  - Wizard framework (supports step-by-step dialogs)
  - NetBeans Visual Library

The NetBeans Platform

- A complete set of bundles that can be used by users when they download and install NetBeans IDE onto their computers is shown below:

  - NetBeans Base IDE
  - Java SE, JavaFX
  - Web & Java EE
  - Java ME
  - Ruby
  - C/C++
  - PHP (Version 6.5 and later)
  - GlassFish
  - Apache Tomcat

The NetBeans Platform

- By using NetBeans IDE, the developers can design and build Java related applications with different categories that are shown below:

  - Java Applications
  - JavaFX Applications
  - Java Web applications
  - Java Enterprise applications
  - Maven applications
  - Grails applications
  - NetBeans modules

The NetBeans Platform

- When you first time launch the NetBeans IDE, a main menu and some default windows are displayed, as shown in Figure

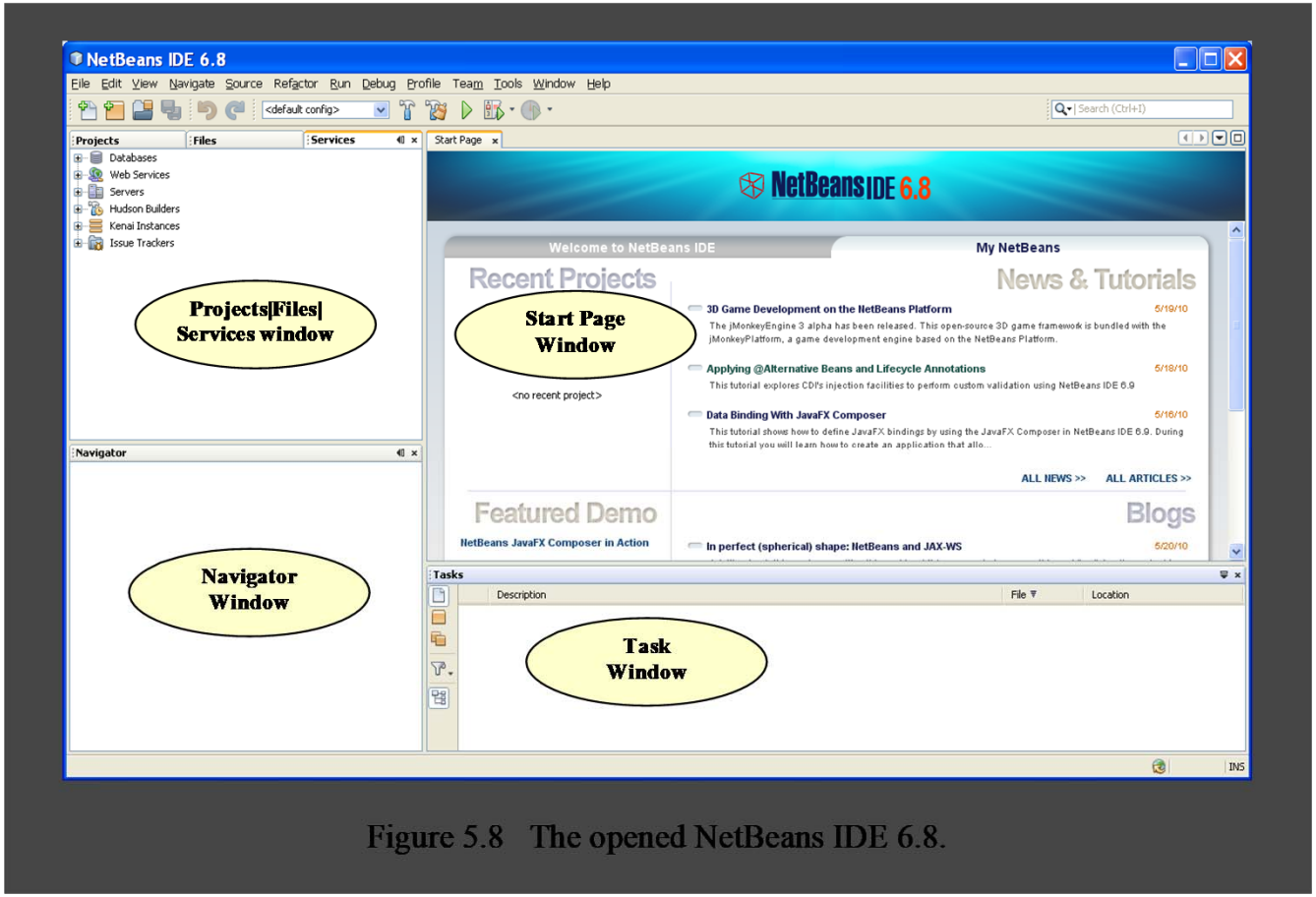

Figure 5.8 The opened NetBeans IDE 6.8.

Build a New Java Project

- Under the Java category, the IDE contains the following standard project templates for Java desktop and Web applications:
  - Java Application: Creates a skeleton Java Standard Edition (SE) project with a main class
  - Java Desktop Application: Creates an application based on the Swing Application Framework. Skeletons are offered for a basic desktop application and a database application that makes use of the Beans Binding and Java Persistence API libraries
  - Java Class Library: Creates a skeleton Java class library without a main class
  - Java Project with Existing Sources: Creates a Java SE project based on your own Java sources
  - Java Free-Form Project: The free-form templates enable you to use an existing Ant script for a project but require manual configuration

Build a New Java Project

- To build a new Java Application project:
  - Create a new Java Application project:

    File > New Project
    Project Name
    Project Location
  - Add a Graphical User Interface

    Most popular Java GUI containers include:
    - JFrame Form (Java Frame Form window)
    - JDialog Form (Java Dialog Box Form window)
    - JPanel Form (Java Panel Form window)

Build a New Java Project

- The GUI Builder's various windows include:

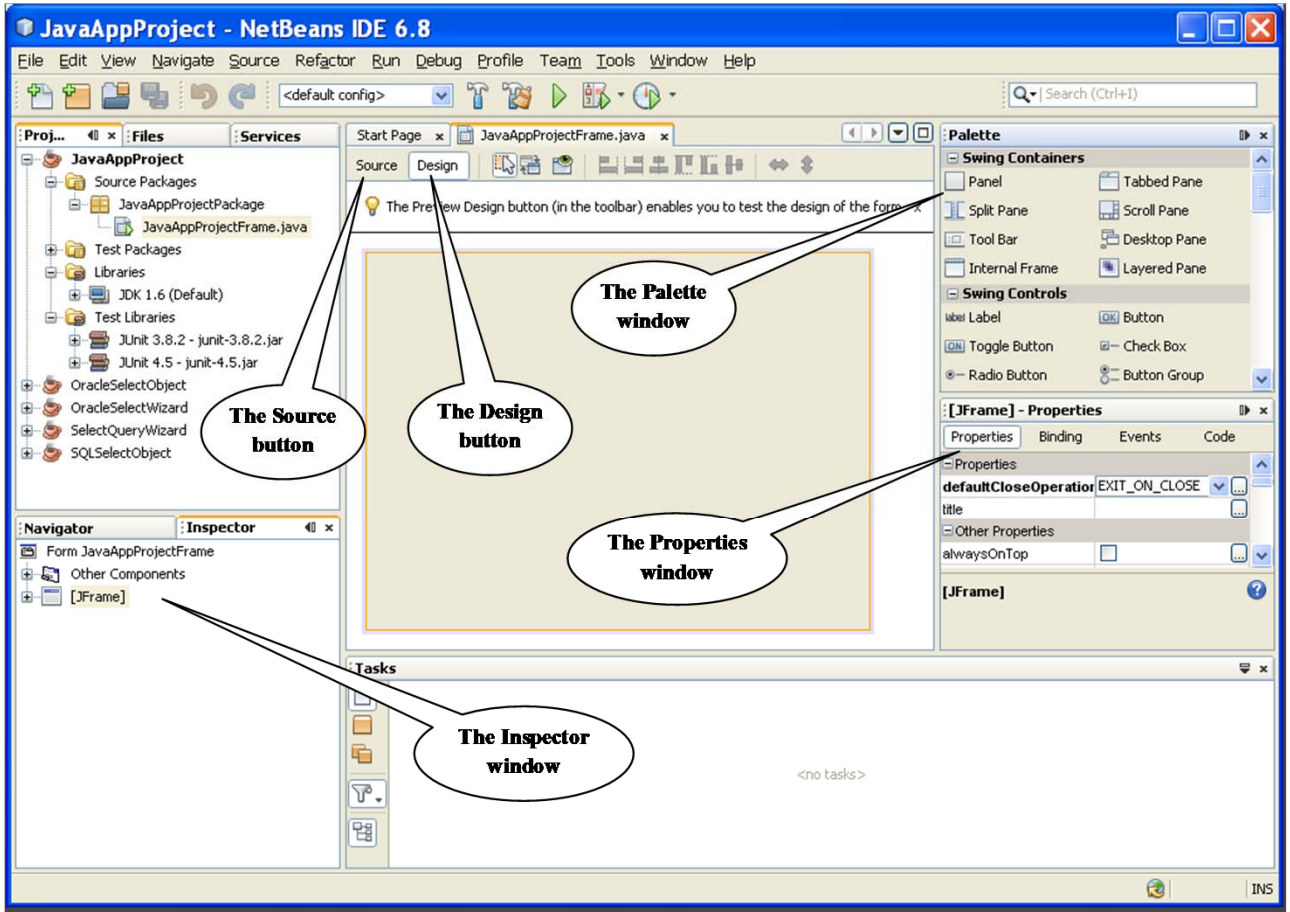

Figure 5.13 The opened ContactEditor form.

Add a Graphical User Interface

- All Java GUI related components are located in the Palette window and distributed in the different packages or namespaces.

- This Palette window contains the following GUI related components based on the different packages:
  - Swing Containers: contains all Java container classes
  - Swing Controls: contains all Swing related GUI components
  - Swing Menus: contains all Swing related menu items
  - Swing Windows: contains all Swing related window classes
  - AWT: contains all AWT related GUI components
  - Beans: contains all JavaBeans related GUI components
  - Java Persistence: contains all Java Persistence related components

- Relatively speaking, AWT related GUI components are older compared with those components defined in the Swing package, in which all components are defined in a model view controller (MVC) style.

Add a Graphical User Interface

- Example:
  - One JPanel object that can be considered as a kind of container.
  - Two JTextField objects to retrieve and hold the user's first and the last name.
  - Four JLabel objects to display the caption for each JTextFields and the user's full name as the Display button is clicked.
  - Three JButton objects, Display, Clear and Exit. The Clear button is used to clean up all contents on two JTextField objects (user's first and last name), and the Exit button is used to exit the application.
  - Rename and setup new Text for each component

Exercise – Develop the Codes

- *Coding for the Display Button*
  - The function of the Display button is to concatenate the first and the last names entered by the user and stored in the FirstTextField and the LastTextField TextFields, and display it in the FullNameLable when this Display button is clicked
- *Coding for the Clear Button*
  - The function of this Clear button is to cleanup all contents in two TextFields, FirstTextField and LastTextField, respectively to allow the user to enter a new name.
- *Coding for the Exit Button*
  - The function of this button is to stop the running of this project and exit from this application.
- *Build and run the project*