

**Exercises for Delphi Advanced  
Programming Technology  
(English Version)**

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# Exercises

## Chapter 1:

- 1、 How many editions in Delphi 7? Try to describe them separately.
- 2、 What is the main features of the Delphi IDE? How does the IDE of Delphi 7 consist of?
- 3、 The Delphi editor consists of two windows, what are they? Try to describe the use of each window?
- 4、 What is the use of the form designer? Try to describe the main steps to carry on the form design.
- 5、 Give a brief introduction of the usage and composition of the object inspector.
- 6、 How to manage Delphi projects? How can you quickly switch between a unit's form and source code when working with Delphi?
- 7、 List the additional and external Delphi tools.
- 8、 Give a brief introduction of different files produced by the system.
- 9、 List the file types needed to build an application in Delphi.
- 10、 Try to create a simple program which outputs "Hello world!" in the screen.

## Chapter 2:

- 1、 What are the main features of such an OOP language as Delphi? How to define a class type?
- 2、 What is object and its properties, events and methods?
- 3、 What is a constructor and destructor? When is a class's destructor called?
- 4、 What is the methods of a class? Try to give an example to demonstrate the implementation of the method.
- 5、 What is encapsulation?
- 6、 Try to describe the Delphi's object reference model.
- 7、 What is inheriting? How to inheriting from existing types? Try to give an example.
- 8、 What is polymorphism? Try to explain how to implementation it.
- 9、 How to overriding and redefining methods?
- 10、 What are the differences between the virtual methods and the dynamic methods?
- 11、 What is the abstract methods?
- 12、 What is the exceptions? How to define the exception classes? How to handle an exception? Give an example.

13、 Write a class that takes a person's height in inches and returns the height in feet. Derive a class from the class of person that also returns the height in meters, centimeters, or millimeters.

14、 What is the purpose of having private fields and methods?

### **Chapter 3:**

- 1、 What is the RTL?
- 2、 List some units of the run time library.
- 3、 Try to enumerate some classes included in the system unit.
- 4、 How to use the Convert function? Give an example.

### **Chapter 4:**

- 1、 What is VCL and CLX?
- 2、 Try to describe representation of the main groups of VCL components in graph. How many component classes can be further divided into?
- 3、 How the Delphi components are programmed?
- 4、 What is the structure of the CLX?
- 5、 What is event?
- 6、 When the lists and containers classes are used?
- 7、 What is stream? What is the advantage by using stream?

### **Chapter 5:**

- 1、 What are the differences between the Window-Based Controls and Graphical Controls?
- 2、 List the common properties of the controls.
- 3、 Write a simple program which demonstrate the use of the text input components (include The Edit Component, The LabeledEdit Control, The MaskEdit Component, The Memo and RichEdit Components), Selecting Options (The CheckBox and RadioButton Components, The GroupBox Components, The RadioGroup Component), lists (The ListBox Component, The ComboBox Component, The CheckListBox Component), Ranges (The ScrollBar Component, The TrackBar and ProgressBar Components, The UpDown Component)?
- 4、 Classify the menu- and toolbar-related command.
- 5、 Write a simple program which demonstrate the use of commands and menus.

- 6、 Write a program to demonstrate the use of the ListView and the TreeView.
- 7、 Are all components visible at design time?

### **Chapter 6:**

- 1、 When you need to create multiple-page Forms?
- 2、 What are the differences between the PageControl component and the TabControl component?
- 3、 Write a program of an image viewer with Owner-Draw Tabs.
- 4、 What is toolbar?
- 5、 When you have the Customize dialog box open, how do you add buttons to a toolbar?
- 6、 How do you remove buttons from a toolbar?
- 7、 What is status bar?
- 8、 Write a program to demonstrate the use of the toolbar and the status bar.
- 9、 List some predefined actions in Delphi.
- 10、 Write a program to demonstrate the use of the actionlist component.
- 11、 Delphi has two ready-to-use toolbar containers, what are they and what are the differences between them?
- 12、 Write an simple program to demonstrate the use of the CoolBar component and the ControlBar component.
- 13、 Describe the ActionManager Architecture in Delphi 7.

### **Chapter 7:**

- 1、 How to set the form style, the border style and the border icons? Write a program to demonstrate the use of plain forms.
- 2、 How to handle the mouse event? Describe the parameters of the mouse events and write the key code of some mouse event.
- 3、 Write a program to show how to paint on the form.
- 4、 How to scrolling and scaling a form? Write a program to demonstrate them.
- 5、 Describe the form coordinates in the graph.
- 6、 Describe the order of how form-creation events are fired.
- 7、 How to closing a form? List the values of the action parameter of close actions.
- 8、 What are the differences between a modal and a modeless dialog boxes?

- 9、 Write a program to demonstrate how to create secondary form at runtime and show the difference between the modal and modeless dialog boxes?
- 10、 List the predefined windows common dialogs and write a program to demonstrate how to use them?
- 11、 How to use Delphi procedures and functions to display simple dialog boxes?
- 12、 write a program to show how to use an about boxes and a splash screen?

### **Chapter 8:**

- 1、 Describe the Application Object.
- 2、 What is event-driven programming and how the windows messages are delivered?
- 3、 What is threads? Write a program to demonstrate the use of threads?
- 4、 What is MDI Application and how to create an MDI application?
- 5、 What is frames? Describe the difference between the frames and the pages.
- 6、 How to use a base form class?
- 7、 Write a program to show how to use a base form class and the interface?

### **Chapter 9:**

- 1、 List the rules for writing components
- 2、 Write a new component, such as a Fonts Combo Box.

### **Chapter 10:**

- 1、 What Is Dynamic Linking? What are DLLs For?
- 2、 List the rules for writing Delphi DLLs.
- 3、 Write a program to demonstrate how to use existing DLLs.
- 4、 Write a program to create a new DLL and use it in another program.
- 5、 What are the structure of a packages?

### **Chapter 11:**

- 1、 What is a local database?
- 2、 What is the purpose of the BDE?

- 3、 Are a dataset and a table the same thing? If not, explain the difference.
- 4、 Name one advantage of cached updates.
- 5、 What is a stored procedure?
- 6、 What is the purpose of the SQL property of the TQuery component?
- 7、 Name one reason you might want to use your own TDatabase object instead of the default.
- 8、 Why would you want to keep a connection to a remote database open even when you are not currently using the connection?
- 9、 What does the TBatchMove component do?
- 10、 What is a BDE alias?
- 11、 What's the fastest and easiest way to create a database form?
- 12、 How do you control the order and number of columns that appear in a DBGrid component?
- 13、 What component enables you to display a dataset in table format?
- 14、 How can you add or remove buttons from a DBNavigator?
- 15、 What component do you use to display BLOB image data?
- 16、 What property is common to all data-aware components?
- 17、 What property is used to select the field that a data component is linked to?
- 18、 Can you rearrange the columns in a DBGrid component?
- 19、 Which component is used to edit and display text fields in a database?
- 20、 What does BLOB stand for?
- 21、 What method do you call to create a database table at runtime?
- 22、 What does the Edit method of TTable do?
- 23、 What method do you call when you want to apply the changes made to a record?
- 24、 How do you create a new data module?
- 25、 Is a data module a regular form?
- 26、 What is the Dataset component? List the Status of a Dataset.
- 27、 Describe the Delphi database architecture.
- 28、 How to indexing, filtering and locating records when using the ClientDataSet components?
- 29、 List the data-aware controls and their properties, methods and events.
- 30、 List the data access controls and their purpose.
- 31、 List the data control components and their purpose.

- 32、 List the Delphi data sources.
- 33、 What is Database Desktop?
- 34、 Write a database application to implement basal operates of the records.

**Chapter 12:**

- 1、 What is Microsoft Data Access Components (MDAC)?
- 2、 List the OLE DB Providers.
- 3、 Write a program to demonstrate how to use dbGo Components(ADOConnection, ADOCommand, ADODataset, ADOTable, ADOQuery, ADOStoredProc, RDSConnection).

Answer:

**Chapter 13:**

- 1、 What is rave?
- 2、 List components of the rave designer.
- 3、 Write simple application to demonstrate how to use rave to fulfill the data report.