

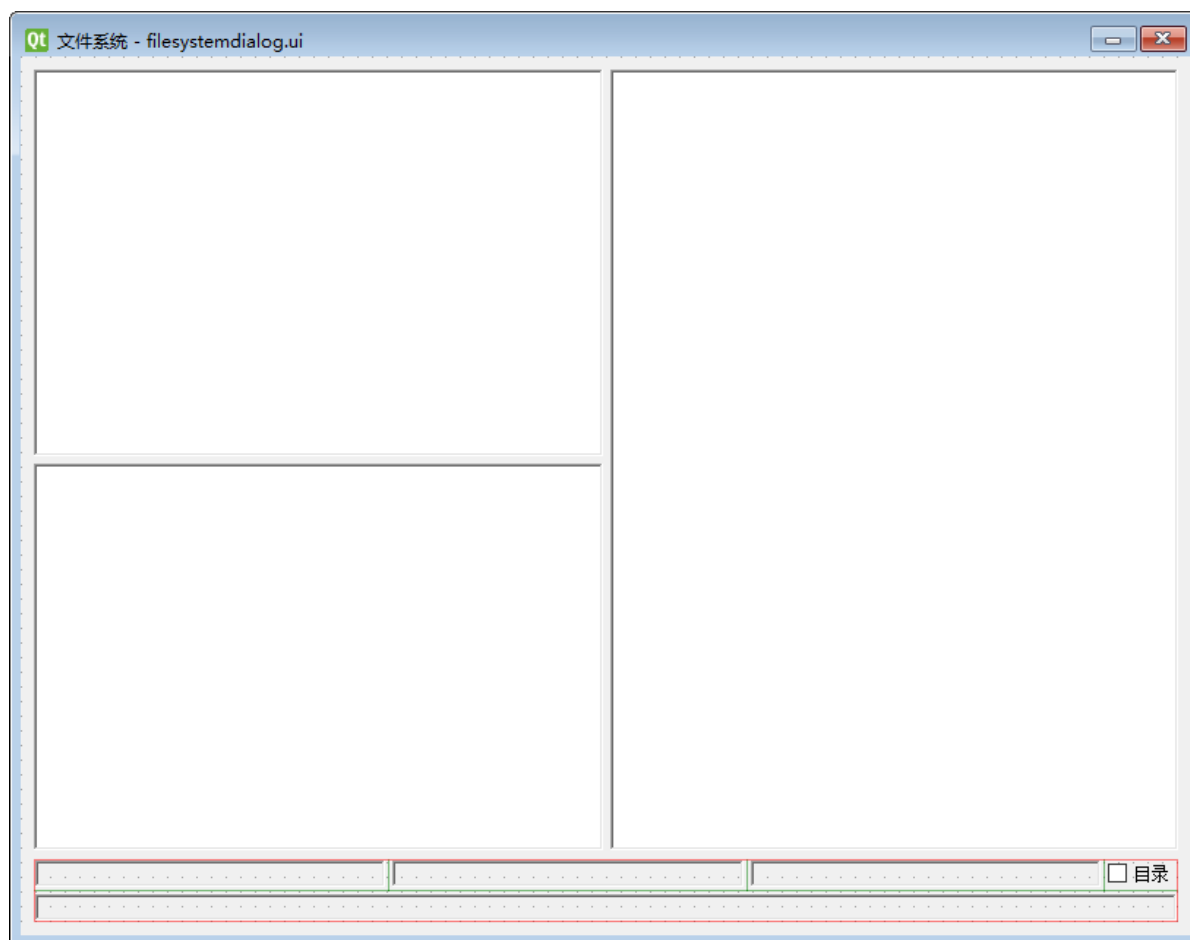
49 QFileSystemModel

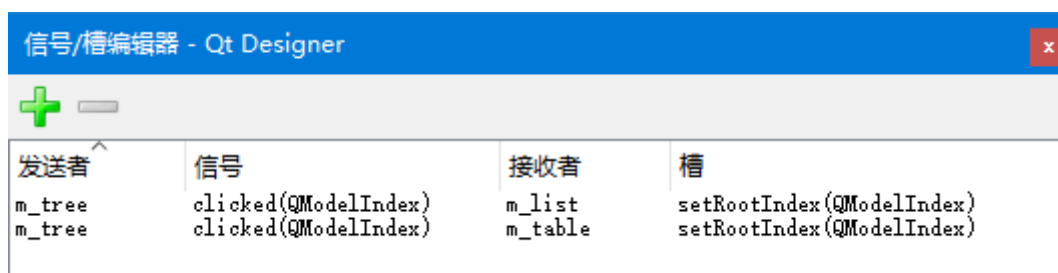
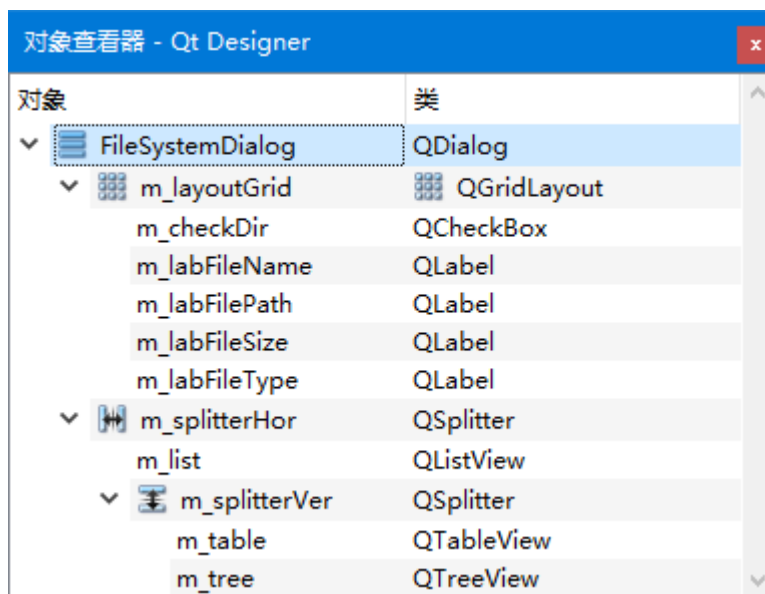
在这个案例中，借助QFileSystemModel类的对象，表示计算机磁盘上的文件系统，将其关联于QTreeView、QTableView和QListView三种不同的视图。不难发现，即便是同一个模型，当从不同视图看过去时，亦呈现出不同的逻辑结构。通过QTreeView看到的模型呈树状结构，通过QTableView看到的模型呈表格结构，而通过QListView看到的模型则呈列表结构。这为将同一个数据源展现为不同的外观，提供了可能。

49.1 创建项目

通过QtCreator，在C:\Users\Minwei\Projects\Qt路径下，创建名为FileSystem的项目。

49.2 设计界面





C:\Users\Minwei\Projects\Qt\FileSystem\filesystemdialog.ui:

```

1  <?xml version="1.0" encoding="UTF-8"?>
2  <ui version="4.0">
3  <class>FileSystemDialog</class>
4  <widget class="QDialog" name="FileSystemDialog">
5  <property name="geometry">
6  <rect>
7  <x>0</x>
8  <y>0</y>
9  <width>800</width>
10 <height>600</height>
11 </rect>
12 </property>
13 <property name="windowTitle">
14 <string>文件系统</string>
15 </property>
16 <layout class="QVBoxLayout" name="m_layoutVer">
17 <item>
18 <widget class="QSplitter" name="m_splitterHor">
19 <property name="sizePolicy">
20 <sizepolicy hsize="Expanding" vsize="Expanding">
21 <horstretch>0</horstretch>
22 <verstretch>0</verstretch>
23 </sizepolicy>
24 </property>
25 <property name="orientation">
26 <enum>Qt::Horizontal</enum>
27 </property>
28 <widget class="QSplitter" name="m_splitterVer">
29 <property name="orientation">

```

```
30     <enum>Qt::vertical</enum>
31 </property>
32 <widget class="QTreeView" name="m_tree">
33     <property name="frameShape">
34         <enum>QFrame::WinPanel</enum>
35     </property>
36 </widget>
37 <widget class="QTableView" name="m_table">
38     <property name="frameShape">
39         <enum>QFrame::WinPanel</enum>
40     </property>
41 </widget>
42 </widget>
43 <widget class="QListView" name="m_list">
44     <property name="frameShape">
45         <enum>QFrame::WinPanel</enum>
46     </property>
47 </widget>
48 </widget>
49 </item>
50 <item>
51     <layout class="QGridLayout" name="m_layoutGrid">
52         <property name="spacing">
53             <number>5</number>
54         </property>
55         <item row="0" column="0">
56             <widget class="QLabel" name="m_labFileName">
57                 <property name="frameShape">
58                     <enum>QFrame::WinPanel</enum>
59                 </property>
60                 <property name="frameShadow">
61                     <enum>QFrame::Sunken</enum>
62                 </property>
63                 <property name="text">
64                     <string/>
65                 </property>
66             </widget>
67         </item>
68         <item row="0" column="1">
69             <widget class="QLabel" name="m_labFileSize">
70                 <property name="frameShape">
71                     <enum>QFrame::WinPanel</enum>
72                 </property>
73                 <property name="frameShadow">
74                     <enum>QFrame::Sunken</enum>
75                 </property>
76                 <property name="text">
77                     <string/>
78                 </property>
79             </widget>
80         </item>
81         <item row="0" column="2">
82             <widget class="QLabel" name="m_labFileType">
83                 <property name="frameShape">
84                     <enum>QFrame::WinPanel</enum>
85                 </property>
```

```

86     <property name="frameShadow">
87         <enum>QFrame::Sunken</enum>
88     </property>
89     <property name="text">
90         <string/>
91     </property>
92 </widget>
93 </item>
94 <item row="0" column="3">
95     <widget class="QCheckBox" name="m_checkDir">
96         <property name="sizePolicy">
97             <sizepolicy hsize="Fixed" vsize="Fixed">
98                 <horstretch>0</horstretch>
99                 <verstretch>0</verstretch>
100            </sizepolicy>
101        </property>
102        <property name="text">
103            <string>目录</string>
104        </property>
105    </widget>
106 </item>
107 <item row="1" column="0" colspan="4">
108     <widget class="QLabel" name="m_labFilePath">
109         <property name="frameShape">
110             <enum>QFrame::WinPanel</enum>
111         </property>
112         <property name="frameShadow">
113             <enum>QFrame::Sunken</enum>
114         </property>
115         <property name="text">
116             <string/>
117         </property>
118     </widget>
119 </item>
120 </layout>
121 </item>
122 </layout>
123 </widget>
124 <tabstops>
125     <tabstop>m_tree</tabstop>
126     <tabstop>m_table</tabstop>
127     <tabstop>m_list</tabstop>
128     <tabstop>m_checkDir</tabstop>
129 </tabstops>
130 <resources/>
131 <connections>
132     <connection>
133         <sender>m_tree</sender>
134         <signal>clicked(QModelIndex)</signal>
135         <receiver>m_list</receiver>
136         <slot>setRootIndex(QModelIndex)</slot>
137     <hints>
138         <hint type="sourcelabel">
139             <x>203</x>
140             <y>140</y>
141         </hint>

```

```

142     <hint type="destinationlabel">
143         <x>596</x>
144         <y>275</y>
145     </hint>
146 </hints>
147 </connection>
148 <connection>
149     <sender>m_tree</sender>
150     <signal>clicked(QModelIndex)</signal>
151     <receiver>m_table</receiver>
152     <slot>setRootIndex(QModelIndex)</slot>
153     <hints>
154         <hint type="sourcelabel">
155             <x>203</x>
156             <y>140</y>
157         </hint>
158         <hint type="destinationlabel">
159             <x>203</x>
160             <y>409</y>
161         </hint>
162     </hints>
163 </connection>
164 </connections>
165 </ui>

```

49.3 实现功能

C:\Users\Minwei\Projects\Qt\FileSystem\filesystemdialog.h:

```

1  #ifndef FILESYSTEMDIALOG_H
2  #define FILESYSTEMDIALOG_H
3
4  #include <QDialog>
5  #include <QFileSystemModel>
6
7  QT_BEGIN_NAMESPACE
8  namespace Ui { class FileSystemDialog; }
9  QT_END_NAMESPACE
10
11 class FileSystemDialog : public QDialog
12 {
13     Q_OBJECT
14
15 public:
16     FileSystemDialog(QWidget *parent = nullptr);
17     ~FileSystemDialog();
18
19 private slots:
20     void on_m_tree_clicked(const QModelIndex &index);
21     void on_m_table_clicked(const QModelIndex &index);
22     void on_m_list_clicked(const QModelIndex &index);
23
24 private:
25     void updateLabels(QModelIndex const& index);
26

```

```

27     Ui::FileSystemDialog *ui;
28     QFileSystemModel* m_model;
29 };
30
31 #endif // FILESYSTEMDIALOG_H

```

C:\Users\Minwei\Projects\Qt\FileSystem\filesystemdialog.cpp:

```

1  #include "filesystemdialog.h"
2  #include "ui_filesystemdialog.h"
3
4  FileSystemDialog::FileSystemDialog(QWidget *parent)
5      : QDialog(parent)
6      , ui(new Ui::FileSystemDialog)
7      , m_model(new QFileSystemModel(this))
8  {
9      ui->setupUi(this);
10
11     ui->m_splitterVer->setStretchFactor(0, 3);
12     ui->m_splitterVer->setStretchFactor(1, 2);
13
14     ui->m_splitterHor->setStretchFactor(0, 83);
15     ui->m_splitterHor->setStretchFactor(1, 50);
16
17     m_model->setRootPath(QDir::currentPath());
18     ui->m_tree->setModel(m_model);
19     ui->m_table->setModel(m_model);
20     ui->m_list->setModel(m_model);
21 }
22
23 FileSystemDialog::~FileSystemDialog()
24 {
25     delete ui;
26 }
27
28 void FileSystemDialog::on_m_tree_clicked(const QModelIndex &index)
29 {
30     updateLabels(index);
31 }
32
33 void FileSystemDialog::on_m_table_clicked(const QModelIndex &index)
34 {
35     updateLabels(m_model->index(index.row(), 0, index.parent()));
36 }
37
38 void FileSystemDialog::on_m_list_clicked(const QModelIndex &index)
39 {
40     updateLabels(index);
41 }
42
43 void FileSystemDialog::updateLabels(QModelIndex const& index)
44 {
45     ui->m_labFileName->setText(m_model->fileName(index));
46     ui->m_labFileSize->setText(QString("%1 Bytes").arg(m_model->
>size(index)));

```

```
47     ui->m_labFileType->setText(m_model->type(index));
48     ui->m_checkDir->setChecked(m_model->isDir(index));
49     ui->m_labFilePath->setText(m_model->filePath(index));
50 }
```

49.4 测试验证

运行效果如图所示：

