

## 109 客户端项目创建

第一步，先构建Monitor项目的基本框架和用户界面。

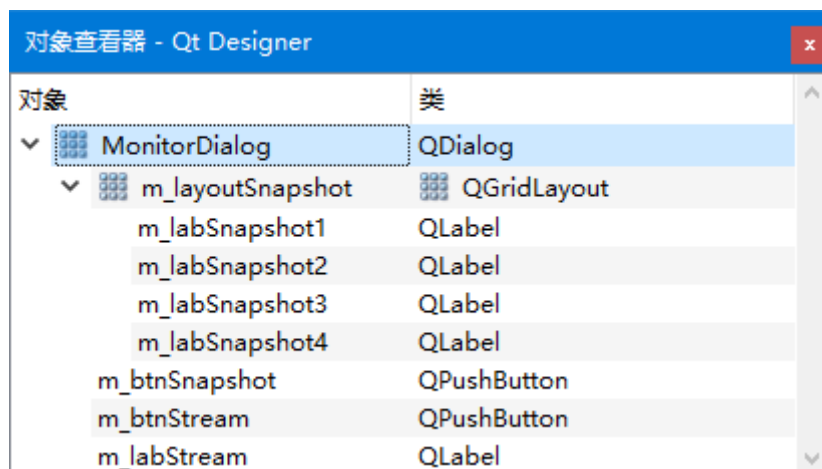
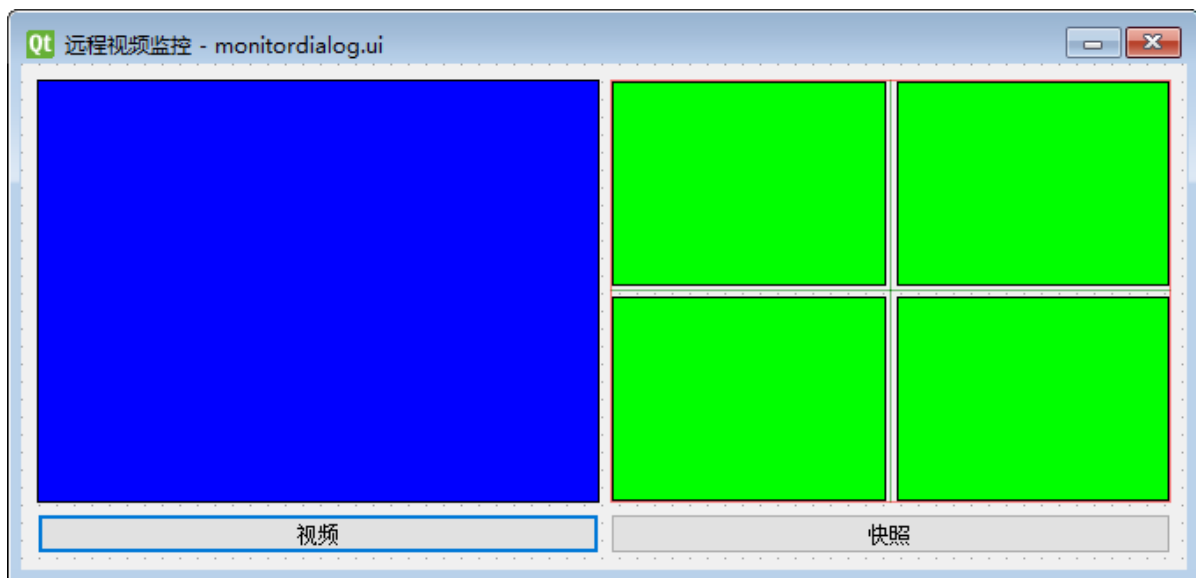
### 109.1 创建项目

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

C:\Users\Minwei\Projects\Qt\Monitor\Monitor.pro:

```
1 ...
2 QT += ... network
3 ...
4 INCLUDEPATH += C:\opencv-3.4.3\build\install\include
5 ...
6 LIBS += C:\opencv-3.4.3\build\install\x64\mingw\lib\libopencv_*.a
7 ...
```

### 109.2 设计界面



C:\Users\Minwei\Projects\Qt\Monitor\monitordialog.ui:

```
1 <?xml version="1.0" encoding="UTF-8"?>
2 <ui version="4.0">
3   <class>MonitorDialog</class>
```

```
4 <widget class="QDialog" name="MonitorDialog">
5 <property name="geometry">
6 <rect>
7 <x>0</x>
8 <y>0</y>
9 <width>663</width>
10 <height>287</height>
11 </rect>
12 </property>
13 <property name="windowTitle">
14 <string>远程视频监控</string>
15 </property>
16 <layout class="QGridLayout" name="m_layoutGrid">
17 <item row="0" column="0">
18 <widget class="QLabel" name="m_labStream">
19 <property name="palette">
20 <palette>
21 <active>
22 <colorrole role="Base">
23 <brush brushstyle="SolidPattern">
24 <color alpha="255">
25 <red>255</red>
26 <green>255</green>
27 <blue>255</blue>
28 </color>
29 </brush>
30 </colorrole>
31 <colorrole role="Window">
32 <brush brushstyle="SolidPattern">
33 <color alpha="255">
34 <red>0</red>
35 <green>0</green>
36 <blue>255</blue>
37 </color>
38 </brush>
39 </colorrole>
40 </active>
41 <inactive>
42 <colorrole role="Base">
43 <brush brushstyle="SolidPattern">
44 <color alpha="255">
45 <red>255</red>
46 <green>255</green>
47 <blue>255</blue>
48 </color>
49 </brush>
50 </colorrole>
51 <colorrole role="Window">
52 <brush brushstyle="SolidPattern">
53 <color alpha="255">
54 <red>0</red>
55 <green>0</green>
56 <blue>255</blue>
57 </color>
58 </brush>
59 </colorrole>
```

```
60     </inactive>
61     <disabled>
62     <colorrole role="Base">
63     <brush brushstyle="SolidPattern">
64     <color alpha="255">
65     <red>0</red>
66     <green>0</green>
67     <blue>255</blue>
68     </color>
69     </brush>
70     </colorrole>
71     <colorrole role="window">
72     <brush brushstyle="SolidPattern">
73     <color alpha="255">
74     <red>0</red>
75     <green>0</green>
76     <blue>255</blue>
77     </color>
78     </brush>
79     </colorrole>
80     </disabled>
81     </palette>
82 </property>
83 <property name="autoFillBackground">
84 <bool>true</bool>
85 </property>
86 <property name="frameShape">
87 <enum>QFrame::Box</enum>
88 </property>
89 </widget>
90 </item>
91 <item row="0" column="1">
92 <layout class="QGridLayout" name="m_layoutSnapshot">
93 <item row="0" column="0">
94 <widget class="QLabel" name="m_labSnapshot1">
95 <property name="palette">
96 <palette>
97 <active>
98 <colorrole role="Base">
99 <brush brushstyle="SolidPattern">
100 <color alpha="255">
101 <red>255</red>
102 <green>255</green>
103 <blue>255</blue>
104 </color>
105 </brush>
106 </colorrole>
107 <colorrole role="window">
108 <brush brushstyle="SolidPattern">
109 <color alpha="255">
110 <red>0</red>
111 <green>255</green>
112 <blue>0</blue>
113 </color>
114 </brush>
115 </colorrole>
```

```
116     </active>
117     <inactive>
118         <colorrole role="Base">
119             <brush brushstyle="SolidPattern">
120                 <color alpha="255">
121                     <red>255</red>
122                     <green>255</green>
123                     <blue>255</blue>
124                 </color>
125             </brush>
126         </colorrole>
127         <colorrole role="window">
128             <brush brushstyle="SolidPattern">
129                 <color alpha="255">
130                     <red>0</red>
131                     <green>255</green>
132                     <blue>0</blue>
133                 </color>
134             </brush>
135         </colorrole>
136     </inactive>
137     <disabled>
138         <colorrole role="Base">
139             <brush brushstyle="SolidPattern">
140                 <color alpha="255">
141                     <red>0</red>
142                     <green>255</green>
143                     <blue>0</blue>
144                 </color>
145             </brush>
146         </colorrole>
147         <colorrole role="window">
148             <brush brushstyle="SolidPattern">
149                 <color alpha="255">
150                     <red>0</red>
151                     <green>255</green>
152                     <blue>0</blue>
153                 </color>
154             </brush>
155         </colorrole>
156     </disabled>
157 </palette>
158 </property>
159 <property name="autoFillBackground">
160     <bool>true</bool>
161 </property>
162 <property name="frameShape">
163     <enum>QFrame::Box</enum>
164 </property>
165 </widget>
166 </item>
167 <item row="0" column="1">
168     <widget class="QLabel" name="m_labSnapshot2">
169         <property name="palette">
170             <palette>
171                 <active>
```

```
172 <colorrole role="Base">
173 <brush brushstyle="SolidPattern">
174 <color alpha="255">
175 <red>255</red>
176 <green>255</green>
177 <blue>255</blue>
178 </color>
179 </brush>
180 </colorrole>
181 <colorrole role="window">
182 <brush brushstyle="SolidPattern">
183 <color alpha="255">
184 <red>0</red>
185 <green>255</green>
186 <blue>0</blue>
187 </color>
188 </brush>
189 </colorrole>
190 </active>
191 <inactive>
192 <colorrole role="Base">
193 <brush brushstyle="SolidPattern">
194 <color alpha="255">
195 <red>255</red>
196 <green>255</green>
197 <blue>255</blue>
198 </color>
199 </brush>
200 </colorrole>
201 <colorrole role="window">
202 <brush brushstyle="SolidPattern">
203 <color alpha="255">
204 <red>0</red>
205 <green>255</green>
206 <blue>0</blue>
207 </color>
208 </brush>
209 </colorrole>
210 </inactive>
211 <disabled>
212 <colorrole role="Base">
213 <brush brushstyle="SolidPattern">
214 <color alpha="255">
215 <red>0</red>
216 <green>255</green>
217 <blue>0</blue>
218 </color>
219 </brush>
220 </colorrole>
221 <colorrole role="window">
222 <brush brushstyle="SolidPattern">
223 <color alpha="255">
224 <red>0</red>
225 <green>255</green>
226 <blue>0</blue>
227 </color>
```

```
228         </brush>
229         </colorrole>
230     </disabled>
231 </palette>
232 </property>
233 <property name="autoFillBackground">
234     <bool>true</bool>
235 </property>
236 <property name="frameShape">
237     <enum>QFrame::Box</enum>
238 </property>
239 </widget>
240 </item>
241 <item row="1" column="0">
242     <widget class="QLabel" name="m_labSnapshot3">
243         <property name="palette">
244             <palette>
245                 <active>
246                     <colorrole role="Base">
247                         <brush brushstyle="SolidPattern">
248                             <color alpha="255">
249                                 <red>255</red>
250                                 <green>255</green>
251                                 <blue>255</blue>
252                             </color>
253                         </brush>
254                     </colorrole>
255                     <colorrole role="window">
256                         <brush brushstyle="SolidPattern">
257                             <color alpha="255">
258                                 <red>0</red>
259                                 <green>255</green>
260                                 <blue>0</blue>
261                             </color>
262                         </brush>
263                     </colorrole>
264                 </active>
265                 <inactive>
266                     <colorrole role="Base">
267                         <brush brushstyle="SolidPattern">
268                             <color alpha="255">
269                                 <red>255</red>
270                                 <green>255</green>
271                                 <blue>255</blue>
272                             </color>
273                         </brush>
274                     </colorrole>
275                     <colorrole role="window">
276                         <brush brushstyle="SolidPattern">
277                             <color alpha="255">
278                                 <red>0</red>
279                                 <green>255</green>
280                                 <blue>0</blue>
281                             </color>
282                         </brush>
283                     </colorrole>
```

```
284     </inactive>
285     <disabled>
286     <colorrole role="Base">
287     <brush brushstyle="SolidPattern">
288     <color alpha="255">
289     <red>0</red>
290     <green>255</green>
291     <blue>0</blue>
292     </color>
293     </brush>
294     </colorrole>
295     <colorrole role="window">
296     <brush brushstyle="SolidPattern">
297     <color alpha="255">
298     <red>0</red>
299     <green>255</green>
300     <blue>0</blue>
301     </color>
302     </brush>
303     </colorrole>
304     </disabled>
305     </palette>
306 </property>
307 <property name="autoFillBackground">
308 <bool>true</bool>
309 </property>
310 <property name="frameShape">
311 <enum>QFrame::Box</enum>
312 </property>
313 </widget>
314 </item>
315 <item row="1" column="1">
316 <widget class="QLabel" name="m_labSnapshot4">
317 <property name="palette">
318 <palette>
319 <active>
320 <colorrole role="Base">
321 <brush brushstyle="SolidPattern">
322 <color alpha="255">
323 <red>255</red>
324 <green>255</green>
325 <blue>255</blue>
326 </color>
327 </brush>
328 </colorrole>
329 <colorrole role="window">
330 <brush brushstyle="SolidPattern">
331 <color alpha="255">
332 <red>0</red>
333 <green>255</green>
334 <blue>0</blue>
335 </color>
336 </brush>
337 </colorrole>
338 </active>
339 <inactive>
```

```
340     <colorrole role="Base">
341     <brush brushstyle="SolidPattern">
342     <color alpha="255">
343     <red>255</red>
344     <green>255</green>
345     <blue>255</blue>
346     </color>
347     </brush>
348     </colorrole>
349     <colorrole role="window">
350     <brush brushstyle="SolidPattern">
351     <color alpha="255">
352     <red>0</red>
353     <green>255</green>
354     <blue>0</blue>
355     </color>
356     </brush>
357     </colorrole>
358 </inactive>
359 <disabled>
360     <colorrole role="Base">
361     <brush brushstyle="SolidPattern">
362     <color alpha="255">
363     <red>0</red>
364     <green>255</green>
365     <blue>0</blue>
366     </color>
367     </brush>
368     </colorrole>
369     <colorrole role="window">
370     <brush brushstyle="SolidPattern">
371     <color alpha="255">
372     <red>0</red>
373     <green>255</green>
374     <blue>0</blue>
375     </color>
376     </brush>
377     </colorrole>
378 </disabled>
379 </palette>
380 </property>
381 <property name="autoFillBackground">
382 <bool>true</bool>
383 </property>
384 <property name="frameShape">
385 <enum>QFrame::Box</enum>
386 </property>
387 </widget>
388 </item>
389 </layout>
390 </item>
391 <item row="1" column="0">
392 <widget class="QPushButton" name="m_btnStream">
393 <property name="text">
394 <string>视频</string>
395 </property>
```



```

396     <property name="default">
397         <bool>true</bool>
398     </property>
399 </widget>
400 </item>
401 <item row="1" column="1">
402     <widget class="QPushButton" name="m_btnSnapshot">
403         <property name="text">
404             <string>快照</string>
405         </property>
406     </widget>
407 </item>
408 </layout>
409 </widget>
410 <resources/>
411 <connections/>
412 </ui>

```

## 109.3 功能框架

将C:\opencv-3.4.3\build\install\etc\haarcascades目录下的haarcascade\_frontalface\_default.xml文件复制到项目目录下。

C:\Users\Minwei\Projects\Qt\Monitor\monitordialog.h:

```

1  #ifndef MONITORDIALOG_H
2  #define MONITORDIALOG_H
3
4  #include <QDialog>
5
6  QT_BEGIN_NAMESPACE
7  namespace Ui { class MonitorDialog; }
8  QT_END_NAMESPACE
9
10 class MonitorDialog : public QDialog
11 {
12     Q_OBJECT
13
14 public:
15     MonitorDialog(QWidget *parent = nullptr);
16     ~MonitorDialog();
17
18 private slots:
19     void on_m_btnStream_clicked();
20     void on_m_btnSnapshot_clicked();
21
22 private:
23     Ui::MonitorDialog *ui;
24 };
25
26 #endif // MONITORDIALOG_H

```

C:\Users\Minwei\Projects\Qt\Monitor\monitordialog.cpp:

```


```

```
1 #include "monitordialog.h"
2 #include "ui_monitordialog.h"
3
4 MonitorDialog::MonitorDialog(QWidget *parent)
5     : QDialog(parent)
6     , ui(new Ui::MonitorDialog)
7 {
8     ui->setupUi(this);
9 }
10
11 MonitorDialog::~MonitorDialog()
12 {
13     delete ui;
14 }
15
16 void MonitorDialog::on_m_btnStream_clicked()
17 {
18 }
19
20 void MonitorDialog::on_m_btnSnapshot_clicked()
21 {
22 }
```

## 109.4 测试验证

运行效果如图所示：

