Subject: [BUG] Patch to Switch.cpp to support touch screens
Posted by Giorgio on Thu, 10 Aug 2017 14:39:55 GMT
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Hi there,
I am trying to reach out the maintainer of the Switch control to see if it is possible modify the Switch.cpp code in order to support touch screens.

I am porting an application developed with U++ on Windows to a raspberry/raspbian platform with a touch screen; the whole story is here.

With the touch screen, when I tap on a Switch control it does not work e.i. it does not set the relevant case, but stays always with the initial case. I added some logging in the gtkevent.cpp file and in the Switch.cpp file.

This is the sequence of gtk events and Switch methods with a real mouse:

GDK_BUTTON_PRESS
GDK_PROPERTY_NOTIFY
Switch::MouseMove: pushindex: 3 value: 002
Switch::LeftDown: pushindex: 3 value: 002
GDK_EXPOSE
GDK_BUTTON_RELEASE
Switch::LeftUp (before the outer if cycle): pushindex: 3 value: 002
Switch::LeftUp (inside the outer if cycle): pushindex: 3 value: 002
Switch::LeftUp (inside the inner if cycle): pushindex: 3 v: 005 value: 002
Switch::LeftUp: pushindex: -1 value: 005

And this is the sequence with the touch screen:

GDK_BUTTON_PRESS
GDK_PROPERTY_NOTIFY
Switch::MouseMove: pushindex: 3 value: 002
GDK_EXPOSE
Switch::MouseMove: pushindex: 3 value: 002
Switch::LeftDown: pushindex: 3 value: 002
GDK_EXPOSE
GDK_MOTION_NOTIFY
GDK_BUTTON_RELEASE
Switch::MouseMove: pushindex: -1 value: 002
GDK_EXPOSE
Switch::LeftUp (before the outer if cycle): pushindex: -1 value: 002
Switch::LeftUp: pushindex: -1 value: 002

With the real mouse the sequence of the gtk events is:

GDK_BUTTON_PRESS
GDK_PROPERTY_NOTIFY
GDK_EXPOSE
GDK_BUTTON_RELEASE

With the touch screen is:

GDK_BUTTON_PRESS
GDK_PROPERTY_NOTIFY
GDK_EXPOSE
GDK_EXPOSE
GDK_MOTION_NOTIFY
GDK_BUTTON_RELEASE
GDK_EXPOSE

So, with a real mouse the LeftUp method is called immediately after the LeftDown, but with the touch screen ther is a MouseMove method in between. This MouseMove method set pushindex to -1. Now let's go where the variable "value" (the variable containig the value of the selected case) is set: inside the LeftUp method.

This is the relevant code:

```
 if(pushindex >= 0 && pushindex < cs.GetCount()) {
  RefreshCase(GetIndex());
  const Value& v = cs[pushindex].value;
  if(v != value) {
   value = v;
   UpdateAction();
  }
  RefreshCase(pushindex);
 }
```

As you can see, the value is set only if pushindex >=0, but the MouseMove method has set it to -1.

Let's see what the MouseMove method does:

```
 int i = GetIndex(p);
 int a = -1;
 if(keyflags & K_MOUSELEFT)
  a = i;
 if(pushindex != a) {
  RefreshCase(pushindex);
  RefreshCase(a);
  pushindex = a;
```

```
}
```

Onestly I don't understand what that code actually does; I tried to comment out the whole method and the application crashes, so I modified it as follows:

```
 int i = GetIndex(p);
// int a = -1;
 int a = pushindex;
 if(keyflags & K_MOUSELEFT)
  a = i;
 if(pushindex != a) {
  RefreshCase(pushindex);
  RefreshCase(a);
  pushindex = a;
 }
```

With this modification the Switch control works also with the touch screen and the application does not crash. Of course that code is there for some reason, so I am not comfortable with my modification. I kindly ask to the maintainer of Switch.cpp to see how we can work out things in a way that the touch screen is supported. I am available to carry out the required test.
Thanks,
Gio
