Smart (Google) Android Photo Frame with wireless connectivity (AO1a-08)

Student Name:  
Chan Chun Yuen
Cheuk Ting Hung
Lee Chi Kong

Supervisor Name:  
Prof. Oscar Au

Project Overview:
Our project is making use of the ARM9 development board to have a photo frame application on it. There are various types of development platforms for making application on the development board, such as Android, Qt/Embedded, etc. Android is a newly disturbed platform that developed by Google. It is open for people to develop application by Android. However, it doesn’t allow people to post it on any hardware. So we decided to use another platform after discussing with supervisor.

Qt/Embedded is a cross platform development platform that is developed by Trolltech. We can write the code once and let it run on different platform like Linux and Windows without changing the code. And it is open source and so we can find out many references on the internet. Also, the execution speed of it is faster than other development platform because it has cut many things that may not needed for the program. As a result, we use Qt/Embedded as the development platform.

Hardware Phase
The List of hardware:
1. A ST2410 development board
2. A C740T monitor
3. A computer with Linux

Configuration for the compiling environment
Installation of several packages
1. A cross compiler – Tool chain
2. A QT - embedded library
3. A Qt – X11 emulator (optional)

The files and images to port in the board
1. linux-embedded kernel
   it is the embedded linux port of QT version operation system
2. A file system image
   It is a cramfs file system image load on the board.
3. A developed program
   It is our software phase program.

Main Control Panel:
- Stop the slide show effect
- Click on here to change the speed of transition effect
- Exit the program
- Display nine photos
- Display next or previous photos
- Increase the time of delay
- Start the slide show effect

Specifications:
- File types: JPEG, PNG, BMP
- Storage media: SD, MMC, USB memory stick
- 17 different transition effects
- The type of the transition is randomly displayed

Program Flows:
- System initialization
- Slide show
- Control panel
- Display nine photos
- Display one photo

Conclusion:
1. Method to port Android on an ARM development board is developed
2. Qt/Embedded is successfully ported on the board.
3. Photo Frame application is fully implemented
4. The board is set up well for next year’s people.

Future development:
1. Upgrading the development board and LCD receiver with better touch control
2. Updating the version of the Qt/Embedded and Embedded Linux
3. Wireless connectivity
4. Port Android on the development board.