ANDROID

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Abstract— **I finished my studies at iut 'a' of Lille with an internship abroad, an internship with the aim to improve my technical abilities in computer science, English, but also in Japanese, because this course is held in Japan, a country that I love for many years.**

My topic for this internship was to learn how to create an application in android, the Google operating system for mobile devices. The design of such an application is made in slightly modified Java. The purpose of the final application is to help students to speak easily with the Japanese. It is a system of databases that allows the user to have English phrases and their translations in Japanese. So I also used my knowledge of databases during my internship.

This internship allowed me to increase my knowledge in Java, a language with which I had many difficulties, but also to discover differents aspects of Japanese culture and wonderful people who made this internship really enriching for me.

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Keywords— **development tools project application multitasking.**

I. INTRODUCTION

Android is basically an operating system for smartphones. But we find now integrated into PDAs, touch pads or televisions, even cars (trip computer) or netbooks. The OS was created by the start-up of the same name, which is owned by Google since 2005 . As part of my DUT (equivalent to the OTC), in the 4 th semester a internship is required. We can either do it in french company , or in a university abroad. This is the option I chose when the opportunity was given to me to be able to go to Japan, a country which I am passionate about for many years. So it is in the Sendai National College of Technology (SNCT) that I did my internship. I was under the tutelage of Mr. Suenaga, who offered me as project to do an android application. Android is an operating system for mobile devices.

This project was conducted in two stages: the first is to familiarize myself with the development in android (development tools, coding instructions, setting up the display). During this first step I tried to do a Task Killer, because there is not task manager under android. For the second part of my project, I needed a topic that can be useful and accessible for me because of my low skills in Java.Mr. Suenaga proposed the idea of a mobile application to help foreign students to speak Japanese. The application is consist therefore in a database of translations of English / Japanese that the student can view and edit in order to have in any situations the chance to express themselves.

I intend to improve the application once that my internship is ended, because there was lack of time to finish my application,and so the graphics are quite neglected, and I would like to add support for the camera in certain situations, but all this will detailed in the section on my application.

II. PRESENTATION OF THE WORK ENVIRONMENT.

JAPAN

Japan is an archipelago of 6,852 islands. The four largest islands are Honshū, Hokkaidō, Kyūshū and Shikoku, together accounting for 97% of Japan's land area which is 377,944 square kilometers. The capital of Japan is Tokyo, which is considered as one of the three command center for the world economy, with New York and London.

Japan has the world's tenth-largest population, estimated at around 127.3 million. Japanese society is linguistically and culturally homogeneous with small populations of foreign workers. In 2003, there were about 136,000 Western expatriates in Japan. Japan has one of the highest life expectancy rates in the world, at 81.25 years of age as of 2006. The Japanese population is rapidly aging, the effect of a

post-war baby boom followed by a decrease in births in the latter part of the twentieth century. In 2004, about 19.5% of the population was over the age of 65.

A. SNCT

The establishment that welcomed me for my placement is one of them. It is called SNCT that means Sendai National College of Technology. It educate junior high school graduates who will work as engineers. Students are here for at least five years, and can obtain an associate degree. They can also continue for two more years in advanced courses to have a bachelor's degree. You can find the choices that a student has for being engineer in the appendixes. The college mottoes are spirit of independence, self-respect and exploration of possibilities.

B. Specifications

This operating system is based on version 2.6 of Linux, so it has a monolithic system kernel, what means that all system functions and drivers are grouped into one block of code.

C. Architecture

Android consists of five layers:

The Linux kernel 2.6-which includes useful drivers that allow for example WiFi or Bluetooth.

The library written in C and C + + that provide higher level functionality such as an HTML engine, or a database (SQLite).

A runtime environment for applications based on a virtual machine, made for inefficient machines such as telephones. The aim is to translate JAVA in machine language understood by Android.

A JAVA framework that allows applications running on the virtual machine to organize and cooperate.

III. CHARACTERISTIC OF THE MARKET

A. Competitors

The principal competitor is iPhone OS. It is mainly for competing with Apple that Android has been 11 created. -Palm OS devices on PDA. -Blackberry: which team the same name smartphones -Windows Mobile: which team smartphones and PDAs. -Sybian: Cu$rrent Market Leader

Key partners

To help launch Android, Google has created an alliance of thirty companies in order to develop standards for mobile devices. There is, among others: -Operators such as NTT Dokomo, T-Mobile or Bouygues Telecom -Of-equipment manufacturers like Sony Ericsson or Samsug -Manufacturers of semiconductors, including Intel and Nvidia -Corporate businesses.

market share

The android market share continues to increase since its inception, and is likely to continue climbing because it is favored by big players like HTC , Sony Ericsson, Samsung, LG, Motorola, Dell, Acer . Moreover, according to IDC, android will be the 2nd mobile operating system used of the market in 2013. Here is the state of the market from 2006 to 2009. You have to know that the first mobile phone appeared in android date October 2008.

IV. . WHY ANDROID IS BETTER

Applications
google applications
Android includes most of the time many Google applications like Gmail, YouTube or Maps. These applications are delivered with the machine most of the time, except in certain cases, such as some phones running android on which the provider has replaced Google applications by its own applications.
widgets
With android, it is possible to use widgets which are small tools that can most often get information. These widgets are directly visible on the main window.

Android Market

This is an online software store to buy applications. Developers who created applications can add them into the store, and these applications can be downloaded by users, they can be both free and paid.

• *Multitasking*

Android allows multitasking in the sense that multiple applications can run simultaneously. With Task Manager it is possible view all running tasks and to switch from one to another easily.

• *SDK*

A development kit has been put at disposal of everybody. Accordingly, any developer can create their own applications, or change the android platform. This kit contains a set of libraries, powerful tools for debugging and development, a phone emulator, thorough documentation, FAQs and tutorials.

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• *Modifiability:*

This allows everyone to use, improve or transform the functions of Android for example transform the interface in function of uses , to transform the platform in a real system embedded Linux.

V.   THE PROJECT

For my first application, I was not really comfortable with android, so in this application there is only two differents screen, and so two differents activities, but it was a good training to try how to communicate between the activities, how to display elements (TextView, Buttons ...) on the screen and how to interact with them.
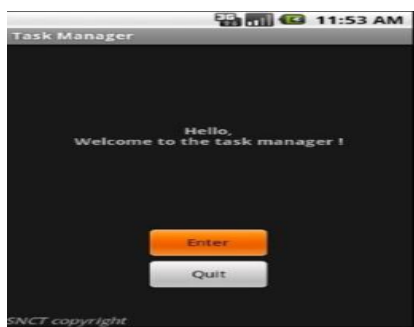

Fig 1

The first screen is drawn in a linear layout which is the simplest layout mechanism available on Android. you can add components horizontally or vertically'. This is a pretty simple way of getting

components assembled on a screen. You can find the XML code for this screen in the Appendixes. As you will see, there is one TextView, two buttons and again one TextView

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