

Multi-Lingual Input System with 正音(Hangul)

Explained by AnYin(安音) Chinese Input System

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(Abstract) AnYin 3.0 is the fastest Hanzi computer input system ever invented in the history. It can input up to 250-400 Hanzi characters per minute(250字-400字/分), as each syllabic character is created by pushing several appropriate keys at once like playing piano to create a beautiful harmonious sound. It uses Hangul, which is an official writing system of Korean-Chinese (朝鲜族), one of many ethnic minorities in China. It is easy to learn and easy to use. Each character will have its own sound created as it appears on the monitor. Since Hanzi has so many characters and the standard keyboard has limited number of keys, no one thought it is possible to process it like a short-hand machine without any assistance of expensive short-hand machine. It took many years of experiments and research on the languages and computer input systems. This method of simultaneous input system can be applied to any language and writing systems of the world.

Introduction

Jeung Eum (正音) is politically neutral term, which was agreed by the North and South Koreans scholars, as both countries were using different names since the division of the country. North Koreans call it **Choseun Geul**, while South Koreans call it **Hangeul**.

It was invented in 1443 by King Sejong and seven court scholars. It was originally called Hoon Min Jeung Eum (训民正音). Due to the Chinese Hanzi influence in Korea, it was not popular and benignly neglected until fairly recently. North Korea exclusively used it since inception of the communist country, and South Korea started using it exclusively only recent years.

AnYin(安音) 3.0 is the most fastest input system of Hanzi out of more than one hundred input systems of Chinese characters. AnYin is also one of the most scientifically developed character input system of Chinese language. It uses 正音(朝鲜文). It is the Chinese Standard Coded Character Set GB 12052-89 (中国标准文字符号: GB 12052-89). GB is an abbreviation of *Guojia Biaozhun* (国家标准) in People's Republic of China (中华人民共和国)

Hanzi(汉字) is extremely difficult to process in the computer, as it has so many characters to process with the limited number of input keys on the standard keyboard. Therefore, more than one hundred methods were developed so far throughout the world.

One of the most widely used systems in mainland China is called *Pinyin* (拼音) input system, which uses Latin characters as an input medium. However, this system is so slow that sometimes it is slower than writing by hand. Hanzi has so many different characters with the same sound that you have to choose one out of many candidates of synonym characters(同音异义词). You have to push appropriate numeric number for it, or dragging and clicking mouse button on right character or move the arrow to the right character and choose it.

Another most widely used system is called *Ubi* (五笔) system, which is much faster than *Pinyin*, but it takes much longer time to learn it. Also, it has only about 7,300 characters which you can process. Those characters out of these ranges should use other methods, which takes a lot of times. Out of more than 20,000 characters listed in ISO 10646, and in Unicode, just over Seven Thousand (7,000+) is too small in numbers. Moreover, it takes so much time to learn it that ordinary people can not use this system.

AnYin 1.0 was developed with Modern Chinese Small Dictionary (现代汉语小词典) in 2005. It has 13,885 vocabularies. It was developed as a Beta version of AnYin input system, and it is freely distributed throughout the world. It is still available free of charge on-line at www.ahnmatae.org.

AnYin 2.0 was developed with Modern Chinese Dictionary, Fifth Edition (现代汉语词典第五版) in 2006. It has approximately 65,000 vocabularies. As it has improved version from the 1.0, it is slightly easier to input than 1.0 version.

AnYin 3.0 version is available in 2007 with additional 250 new characters which were omitted in Version 2.0 due to there were no assigned code points in either Unicode, nor in ISO 10646. It will have an appropriate sound of each character as one types each syllable.

It will be sold on the world market at the price of US \$100 by 丹东安马太计算机开发有限公司, 中国辽宁省东港市桥南经济开发区海鸥花园小区6#楼东3单元1106室, 电话: 0415-7141583, 传真: 0415-7141508, or on www.ahnmatae.com

AnYin 3.0 will be popular in other countries including the US(美国) to the people who learn Chinese language and its writing system, which is extremely difficult to learn by books alone.

Decades of Hardship to learn Hanzi

Developing this most efficient computer input system with this most difficult to learn, as there are so many characters, was not invented over night. It was a culmination of life time learning process of Hanzi, Hangul and computer, and long period of research and developments with them.

My life time learning Hanzi was started around 1942, when I started attending primary school. I had to learn Japanese writing systems first. Though I was born in Korea, I was forced to speak Japanese as Korea was the Japanese colony in that time. Japanese not only use *Katakana* and *Hiragana*, but also *kanji*, which is Japanese pronunciation of Hanzi in Japanese. Both *Katakana* and *Hiragana* are simple syllabaries (单纯音节文字), while *Kanji* is pictographic or ideographic syllabaries (表意音节文字). As a young boy, I had no choice but to memorize all of these difficult writing systems by repeating the pronunciation of each character or chanting them. Writing them on the paper with pencil or brush was another hard toil. This calligraphy class was one of the methods to discipline young children. Therefore, there were no such words like juvenile delinquencies in that period. It was in the World War II period and we were driven like slaves as the subjects of the Japanese emperor.

My learning of Hanzi continued after 1945, when Korea was liberated from Japanese rule. I had to learn how to speak Korean and how to write Korean character, Hangul, as well as Hanja, which is Korean pronunciation of Hanzi. Korea uses Hanzi until now, but the reading same characters this time completely different from Japanese reading. For instance, the word Japan (日本) is read in Japanese *Nippon or Nihon*, but in Korean it is read *Ilbon*. My learning how to read Hanzi as Chinese pronounce them was in 1960 when I chose Chinese language as a second foreign language when I was attending Yonsei University in Seoul, South Korea.

Now, as a resident in China to develop Chinese input system, I have to learn the simplified Hanzi (简化汉字), at the age of seventy one, which is not an easy task.

Computer Usage in Military

My first encounter with computer was during my military service in Korea between 1956 and 1959. I was assigned to the US Army as a KATUSA (Korean Augmentation To the United States Army) soldier. The unit I was assigned was the Anti-Aircraft Artillery unit. To shoot down the flying enemy planes, you have to have a fast calculation machine. You need to have accurate information of plane's flying speed, speed of ammunition, wind speed, altitude of flying object and distance between the gun and the plane. These informations should be fed into the computer and have to feed into the gun and ammunition before you fire them. Also in this period, I became familiarized in English word processing on machines, such as typewriters and teletypewriters. I had to communicate with sub-ordinate units located some distance with teletypewriter. We had to use passwords and sometimes with scrambled codes so that our message could not be read to our enemies. I had to use English typewriter to make my reports and to do some homework while I was attending night school: the University of Maryland's extension courses.

Computer Keyboard Research

My research on the Hangeul computer keyboard was started in 1977 when I had to publish a monthly Korean language magazine in the US to provide the educational materials to newly migrating Korean immigrants to US. The initial Ahnmatae Orth-Phonetic Keyboard (安马太正音键盘) was published in the May Issue of New Life Magazine in 1985, in the name of Ahnmatae Unified Keyboard (安马太统一键盘). However, due to more than a hundred times of changes of key positions from this period to 2003 when it was finalized, total Hangeul alphabet locations on the keyboard has radically changed.

The simultaneous input systems (同时输入) was theorized early part of 1980's, but the first product came out in China in 1999. It was programmed by Mr. Jin Kwang (金光先生) of Yanbian University(延边大学), Yanji(延吉), Jilin Province(吉林省).

The first simultaneous Hangeul input system was programmed on DOS system.

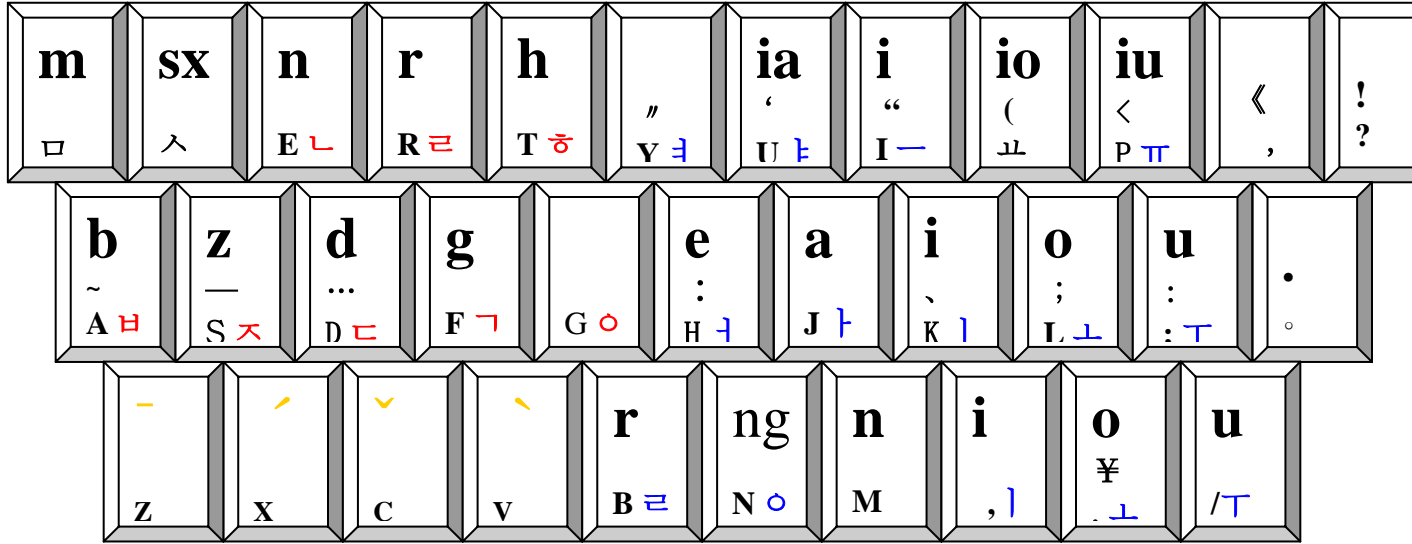
Keyboard driver for Ahnmatae keyboard was developed by the KAIST (Korean Advanced Institute of Science and Technology), Artificial Intelligence Lab scientists in 2003 to be used on the MS windows systems. Other computer scientists in South Korea also contributed to develop it on Linux systems.

Hanzi Development

Since my knowledge of Hanzi, particularly of simplified Hanzi(简体字), was limited, I had to depend on my Chinese partner, Ms. Cui He Xian(崔学仙), who has helped me to rearrange the keyboard for Hanzi, but also to transcribe the right pronunciation of Hanzi from Pinyin.

The original Ahnmatae Hangeul Phonetic Keyboard was patented in US (Patent # 6,462,678) and in South Korea (Patent #0390361) in my name alone. However, Ahnmatae Ortho-Phonetic Keyboard (安马太正音键盘) was patented in China with her name, as she was the co-inventor of Hanzi keyboard (Chinese Patent # 200410048668.X).

Ahnmatae Ortho-Phonetic Keyboard (安马太正音键盘) for Chinese.



This keyboard can be used as a short-hand machine as you push several keys simultaneously to extract a syllabic Hanzi character. For instance, to type, 我爱你(나는 당신을 사랑합니다), Wo Ai Ni (*I love you*), you type H;C+space bar all at once. Hanzi character 我 will appear on screen. When you type J.V+space bar, all at once, will show Hanzi character 爱 on the screen. When you type EKC'+space bar, all at once will show Hanzi character 你 on the screen.

Reasons for High Speed

AnYin 3.0 is much faster than any other systems. Let me compare it with the Pinyin system first. To type three scripts as illustrated above, you have to type WO for 我(我). There are at least Twenty One (21) scripts with same syllabic sound of WO. Then you have to choose one script by pushing the number assigned to an appropriate script, or drag the prompt on the right script by arrow and push the key to choose it, or click with the mouse button. To type AI for 爱(爱) (There are at least 36 scripts with same syllabic sound), you have to go thru the same procedure. So is the NI for 你(你). There are at least 34 scripts with the same syllabic sound. So the total stroke is only 9 for three scripts. However, choosing a right script out of so many scripts requires so much time.

Ubi system is much faster than Pinyin. For WO, you bush one key, Q. For AI, you push three keys: EPD. For NI, you push only two keys: WQ. The total stroke is only 6. However, with Ubi system, you have only type about 7,300 scripts. No one knows exactly how many Hanzi scripts there are. But considering there are tens of thousands of Hanzi in various dictionaries, only a few thousand with Ubi systems is far shorter than enough.

AnYin 3.0 lists about 65,000 words now, and we intend to list more characters in the future versions. Whether it is a single script or vocabularies with multiple scripts, it will definitely include more scripts.

AnYin 3.0 is programmed to display 1,348 single scripts directly on the monitor with most frequently used ones out of many synonymous syllabic scripts. Other less frequently used scripts will be shown on the screen with other combined scripts, when the typist will push the space bar at the end of the vocabulary. Only the few Hanzi scripts, far less frequently used names of the places or names of individuals, will require manual choosing.

Key positions are arranged in a logical way, by clustering together the first consonants, it is called *chosung* (初声), on the left hand side and vowels on the right, called *Jungsung* (中声). And tone marks on the bottom on the left hand side. The *Jongsung* (韵尾) of second consonants of second vowels on the bottom row of right hand side.

It uses the most scientific writing system, 正音.

All the linguists in the world agree that Hangul is known one of the most scientifically arranged and phonetically accurate symbol marks. The CJKV (Chinese, Japanese, Korean and Vietnamese) word processing guru, Ken Lund, in his book titled CJKV, published in 2000, states that Hangul is “The most scientific writing system due to its regular structure”.

There are other phonetic symbols, such as International Phonetic Alphabet (IPA) and Bopomopo (Chinese phonetic symbols). But they are for limited languages and not for other language: IPA for Latin languages and Bopomopo for Chinese language.

Chung In Ji(1396-1478), one of the eight scholars of *Jiphyunjun* (集贤殿) who has assisted King Sejong in the process of inventing Hangul, described in his book *Hunminjeongeum Haerae* (训民正音解例) as following.

King Sejong invented the Hangul that there should be the natural writing system, where there are sound of nature (有天地自然之声、则必有天地自然之文). So, Hangul was invented to write all the sound of nature, including the human language. According to Professor, Byun Jeung Yong of Dongguk University, South Korea, if we follow the instructions laid out by Jung In Ji in *Hunminjeongeum Haerae*, we can create almost 300,000,000 syllabic characters with original Hangul alphabets.

It is designated by the UNESCO as the world’s cultural heritage. Also UNESCO awards annually the Sejong Award to any individual or groups, including nation or international organization, for the best achievement in elimination of illiteracy. Sejong is the name of the king who has invented Hangul in 1443.

Hangul is easy to learn

Professor Kim Suk Yun of New York State University, Buffalo Campus, once reported that average learning time of Hangul Alphabet by her American students were 45 minutes. My own experience of teaching Hangul Alphabet to average American took about an hour in 1970's. Jung In Ji, in his book described in 15th century, that a bright person will learn the Hangul Alphabet in the morning before the noon time, and dullest person will learn it within ten days. It all means that Hangul is so easy that it would not take too much time to learn how to read and write Hangul.

It is amazingly easy to learn because (1) No single Hangul alphabet looks alike visually. (2) Consonants and Vowels are visually different. (3) Each alphabet has only one sound value. Let me describe it in detail.

(1) No Hangul alphabet look alike

English has confusing typography. For example, capital letter 'I' (ai) and small letter 'l' (el) look so much alike, that a non-native English user confuses in reading and writing. However, there is no single Hangul alphabet typography, which looks alike.

(2) Consonants and Vowels are visually look different

In Hangul alphabet, vowels are dot (·), horizontal line (ㅡ), vertical line (ㅣ), and or combination of it.. Consonants are circle (ㅇ), square (ㅁ), combination of vertical and horizontal lines (ㄱ, ㅋ) or geometrical signs of slush plus reverse slush (ㅇ). Vertical line on top of these basic consonants to make the aspirated sounds (ㄱ, ㅋ, ㆁ). Adding the dot on the top of these will make a guttural sound of aspirated sound (ㄱ, ㆁ, ㆁ, ㆁ).

(3) Only one sound value for each Hangul alphabet

In English, alphabet 'a' can be pronounced differently, such as o in the case of ball, eu in the case of another, ei in the case of baby, and a in the case of colaa. On the other hand, in Hangul alphabet 'ㅏ' is pronounced 'a' in the case of colaa, and nothing else. Only one exception is 'ㅇ'. Due to the combining of similarly looking 'ㅇ' with 'ㅇ' the sound value changes.

When it used in front of vowel, there is no sound value and it is only used as a fill code to make a syllabic script. When it is used after the vowel, it has a sound value of 'ng', a nasal sound.

When it is used with other consonants it softens the preceding consonant's sound value, such like V(ㅍ) and F(ㅍ).

Hangul Consonants are made by the shape of where the sound is created.

Hangul is really amazing invention. There are five basic sound creating organs when a person makes sound.

Basic Consonants

First place is a throat. Throat is a round shaped tube. So the symbol is ㅇ (喉音).

Second place is around tongue root. When a tongue root touches inner upper palate and air is blown out it create the sound ㄱ (g)(牙<舌根>音), and the tongue root look alike bended stick facing front.

When tongue tip touches front upper palate and blow the air out, it creates ㄴ (n)(舌<舌头>音) sound. The symbol looks like flat stick's front end bent upward.

Next place where it makes sound is where upright teeth are located. A person blows air out when you have to almost close your upper and down side teeth together to make sound of 's'. The symbol ㄷ (s) looks very much alike upright teeth, with sharp side on the top. It is called(齿音).

The last place to create sound is both lips where ㅁ (m)(唇音) letter is created. It looks like opened mouth.

Aspirated Sounds

Aspirated sounds of these basic consonants have a horizontal line on the top of these basic consonants.

“ㅇ” + “—” is “ㆁ”. However, this consonant is no longer in use.

“ㄱ” + “—” is “ㄲ”. It has sound value of English “d”.

“ㄴ” + “—” is “ㄴ̄” which has English “j” sound.

“ㅁ” + “—” is “ㅁ̄” which has English sound of “b”.

Guttural Sounds

Guttural sound is adding the dot on the top of these aspirated sound alphabets.

“ㆁ̄” + “、” + “ㆁ̄” which has the sound value of English “h”.

“ㄱ” + “ㅇ” = “ㅋ”, which has the English sound of “k”.

“ㄷ” + “ㅇ” = “ㅌ”, which has English sound “t”.

“ㅈ” + “ㅇ” is “ㅊ” which has English sound of “ch”.

“ㅍ” + “ㅇ” is “ㅑ” which has English sound of “p”.

There are hard sounds made by placing same sound script parallel

“ㄱ” + “ㄱ” = “ㄲ”, which has heavy “g” sound..

“ㄷ” + “ㄷ” = “ㄸ”, which has heavy “d” sound.

“ㅂ” + “ㅂ” = “ㅃ”, which has heavy “b” sound

“ㅅ” + “ㅅ” = “ㅆ”, which has heavy “s” sound

“ㅈ” + “ㅈ” = “ㅉ”, which has heavy “j” sound.

Combination Consonants (only applicable in Chinese Hanzi)

“ㄹ” + “ㅇ” = “ㄺ”, which has English “r” sound.

“ㅅ” + “ㅇ” = “ㅆ”, which has English “sh” sound.

“ㅈ” + “ㅇ” = “ㅊ”, which has English “zh” sound.

“ㅊ” + “ㅇ” = “ㅌ”, which has English “ch” sound

“ㅑ” + “ㅇ” = “ㅓ”, which has English “f” sound.

“ㄹ” + “ㄹ” = “ㄺ”, which has English “l” sound.

Hangul Vowels use the Cosmological Relations.

Basic vowels are three essence of universe: Sun(天), Earth(地), Man(人).

It has Yin (阴), Yang (阳) and neutral forces. Likewise almost all basic vowels

have these Yin and Yang forces.

“•” is the sun, a round object, which symbolizes SKY. It has Yang forces. Its sound value is somewhere between “a” sound and “o” sound, like the first crying sound of a baby.

“—” is the flat horizontal line, which symbolizes EARTH. It has Yin forces. Its sound value is like “eu”, which is a person making a sound when making a bowl movement.

“|” is the upright vertical posture, which symbolizes MAN. It is neutral. Its sound value is like “ee”.

“⌋” is when the sun is located right side of man and therefore, it is Yang force. It is pronounced as “ah”.

“⌋” is when the sun is located left side of man and therefore, it is Yin force. It is pronounced as “euh”.

“⌌” is when the sun rises above the horizontal earth and therefore, it is Yang force. It is pronounced as “oh”.

“⌍” is when the sun sets down under the horizontal earth and therefore, it is Yin force. It is pronounced as “wooh”

“⌋” “⌋” “⌌”. “⌍” are called iotized vowels as it has added iota on “⌋” “⌋” “⌌” “⌍”. It is pronounced as “ya” “ieu” “yo” “yoo”.

“⌋” “⌋” “⌋” “⌋” are called double combined vowels as it combines two vowels together. It is pronounced as “wae” “wi” “wa” “woa”.

“⌋” “⌋” are called triple combined vowels as it combines three vowels together. It is pronounced as “wae” “wi”, however, the sound is slightly prolonged than simple double combined similar sounds.

For Chinese Hanzi input purpose only, we added “⌋”(eh), “⌋”(ihh), “⌌”(o), “⌍”(wooh) as second vowels. However, due to lack of key spaces on the bottom row, we decided the “⌋” could not show on the keyboard. It is

invisible, but can be extracted by pushing the bottom row's “ㄱ” and “ㄴ” together at the same time.

For those who have the difficulties of understanding my lecture in English, I will insert it in Chinese as following:

“正音(韩文)”由初·中·终三声分流，也就是说初·中·终“三声”字结合形成文字。韩语最大特征之一可以说是用初声、中声、终声表示音节。也就是说音节是由一个或几个音素组成的语音单位，韩文的音节由3个部分组成，分别是初声的辅音（子音）、中声的元音（母音）、终声的尾音（辅音韵尾），这是世宗大王创造韩文字的基础。尾音不是另外创建的，而是重用辅音表示尾音的。因此韩语文字充分有效地结合辅音（子音）和元音（母音），是一个即可以表示音素，又可以表示音节的特殊的拼音文字。其组合音素成字的规律简单易学，只要能记住最基础的五个辅音（子音）和三个元音（母音），再记住那些按一定规律加笔画而生成其他字母就可以了。

我将分五个步骤来进行讲解。

第一步：基本音

初声：辅音（子音）

据《训民正音解例·制字解》，正音初声即韵书之字母（即指声母，亦即辅音）也。与中国的音韵学字母体系有着极深的关联性。

初声中的基本字：“ㄱ·ㄴ·ㅇ·ㄷ·ㄹ·ㅇ”象形发音时发音器官的形状。

喉音：基本音“ㅇ”是喉咙的形状，它在元音前没有音值，与其它辅音（子音）结合时起柔化语音的作用。只有在的尾音（辅音韵尾）的位置时才有其音值，相当于汉语拼音的“ng”音。

牙（舌根）音：基本音“ㄱ”是舌头抵住软腭的形状。声音从舌根处发出，相当于汉语拼音“g”。在尾音（辅音韵尾）的位置时成为省略了除阻阶段发音，变成带挤吼音的读音。

舌（舌尖）音：基本音“ㄴ”也是舌头抵住硬腭前部的形状。声音从舌尖发出，相当于汉语拼音“n”，在尾音（辅音韵尾）位置时的读法相当于中文的“嗯”。

齿音：基本音“ㄷ”象齿形。声音从舌尖和上齿龈中间发出，相当于汉语拼音的“s”，在尾音（辅音韵尾）位置舌尖抵住上齿龈，并带挤吼音。

唇音：基本音“口”是口的双唇形状，发音时先紧闭双唇使气流从鼻孔通过，相当于汉语拼音“m”。在尾音（辅音韵尾）位置时的读法相同，相当于中文的“嘞”。

中声：元音(母音)

《训民正音》的中声字很有独创性。元音（母音）的三个基本字“·、一、丨”是天、地、人（三才）的象形字。

基本音“·”，一圆点，象征着天，读音似“阿”。

基本音“一”，一横，象征着地，读音似“吃”字去掉声母的音。

基本音“丨”，一竖，象征着站立着的人，其读音相当于汉语拼音的“i”。

第二步：被加划和变形的其他初声（辅音）

以下其它初声音是在五个初声字上加划或略微变形而得的。

喉音基本音“o”上加一横为“o”，在现代韩国””朝鲜”语中已消失。

牙（舌根）音基本音“ㄱ”下加“ㄷ”为“ㄱ”（《训民正音解例》说，“ㄱ”为变形字，无加画之义。），亦称半舌音，读音为舌尖提到上牙床发出的声音，类似于汉语拼音“r”，在尾音（辅音韵尾）位置时的读法相当于中文的“儿化”音。

舌（尖）音基本音“ㄴ”上加一横为“ㄷ”，相当于汉语拼音“d”，在尾音（辅音韵尾）位置时的读法与“入”的尾音读法相同。

齿音基本音“入”上加一横为“ㅈ”，相当于汉语拼音“z”，在尾音（辅音韵尾）位置时的读法与“入”尾音的读法相同。

唇音基本音“口”两上角处向上出头为“ㅍ”相当于汉语拼音“b”，在尾音（辅音韵尾）位置时的读法是在发韩文字母“一”的同时紧闭双唇。

辅音（子音）中的紧音（双子音）

牙（舌根）音基本音“ㄱ”的双子音为“ㄱ”，相当于拼音“g”的重读音，在尾音（辅音韵尾）位置时的读法与“ㄱ”尾音的读法相同。

“ㄷ”的双子音为“ㄸ”，相当于汉语拼音的“d”的重读音。

“ㅂ”的双子音为“ㅃ”，相当于汉语拼音的“b”的重读音。

齿音基本音“ㄴ”的双子音为“ㄸ”，相当于汉语拼音的“s”的重读音，在尾音（辅音韵尾）位置时的读法与“ㄴ”尾音的读法相同。

“ㅈ”的双子音为“ㅉ”，相当于汉语拼音的“z”的重读音。

子音中的送气音：

“ㅎ”上加一点为“ㅎ̇”，相当于汉语拼音的“h”音，在尾音（辅音韵尾）位置时的读法与“ㅎ”尾音的读法相同。

牙（舌根）音“ㄱ”中间加一横为“ㅋ”，相当于汉语拼音的“k”，在尾音（辅音韵尾）位置时的读法与“ㄱ”尾音的读法相同。

“ㄷ”上加一点为“ㅌ”，相当于汉语拼音的“t”，在后尾音（辅音韵尾）位置时的读法与“ㄷ”尾音的读法相同。

“ㅈ”上加一点为“ㅊ”，相当于汉语拼音的“c”，在尾音（辅音韵尾）位置时的读法与“ㅈ”尾音的读法相同。

唇音“ㅍ”四角横向出头为“ㅑ”，相当于汉语拼音的“p”，在尾音（辅音韵尾）位置时的读法与“ㅍ”尾音的读法相同。

第三步：中声合成字

元音（母音）：

象征人的“ㅣ”的外侧加一点为阳音“ㅏ”，相当于汉语拼音的“a”，内侧加一点为阴音“ㅓ”，相当于汉语拼音的“e”。

“ㅣ”的外侧加两点为阳音“ㅑ”，相当于中文的“呀”，内侧加两点为阴音“ㅓ”，是中文“”尤”的第一、二音“io”。

象征地的“ㅡ”的上面加一点为阳音“ㅗ”，与汉语拼音的“o”相似，下面加一点为阴音“ㅜ”，相当于汉语拼音的“u”。

“一”的上面加两点为阳音“ㅑ”，与中文的“吆”相似，下面加两点为阴音“ㅓ”，相当于英文字母“U”的读音。

二合元音（母音）：

母音的右侧再加一竖：

阳音：“ㅏ”+“ㅣ”=“ㅑ”，读音相当于国际音标的“æ”音。

“ㅓ”+“ㅣ”=“ㅕ”，读音相当于国际音标的“jæ”音。

阴音：“ㅓ”+“ㅣ”=“ㅗ”，读音相当于国际音标的“ɛ”音。

“ㅕ”+“ㅣ”=“ㅛ”，读音相当于国际音标的“jɛ”音。

阳音：“ㅑ”+“ㅣ”=“ㅓ”，读音相当于国际音标的“œ”音。

阴音：“ㅗ”+“ㅣ”=“ㅜ”，读音相当于汉语拼音的“ü”音。

母音的右侧加“ㅏ”或“ㅓ”：

阳音：“ㅑ”+“ㅏ”=“ㅑ”，读音相当于中文的“哇”音。

阴音：“ㅗ”+“ㅓ”=“ㅗ”，读音相当于中文的“窝”音。

三合元音（母音）：

元音（母音）与二合元音结合：

阳音：“ㅑ”+“ㅑ”=“ㅑ”读音似中文的“约”。

阴音：“ㅗ”+“ㅗ”=“ㅗ”读音似中文的“悦”。

第四步：复合尾音（辅音韵尾）

韩文尾音（辅音韵尾）部分的复辅音（子音）字：

“ㄷ”的读法与“ㄷ”尾音的读法相同。

“ㄴ”，“ㄴ”的读法相当于中文的“嗯”音。

“ㄹ”，“ㄹ”，“ㄹ”，“ㄹ”，“ㄹ”，“ㄹ”，“ㄹ”的读法似中文的“儿化”音，但随在其后的词句的不同其读法也不同。

“ㄷ”的读法与“ㄷ”尾音的读法相同。

第五步：总复习

首先讲解一下辅音（子音）中喉音“ㅇ”的作用：

1. 它作为辅音（子音）单独与元音（母音）相拼时没有其音值，只有在尾音位置时才有其音值，发音相当于汉语拼音的“ng”。

2. 它起柔化语音的作用，也就是说与另一个辅音（子音）结合所发出的音均变为翘舌音。

“ㅇ” + “ㅇ” = “ㅇㅇ” 读法相当于汉语拼音“r”的读音。

“ㄴ” + “ㅇ” = “ㅇㄴ” 读法相当于汉语拼音“sh”的读音。

“ㄷ” + “ㅇ” = “ㅇㄷ” 读法相当于汉语拼音“zh”的读音。

“ㄸ” + “ㅇ” = “ㅇㄸ” 读法相当于汉语拼音“ch”的读音。

“ㅍ” + “ㅇ” = “ㅇㅍ” 读法相当于汉语拼音“f”的读音。

再补充一个辅音（子音）：

“ㅇ” + “ㅇ” = “ㅇㅇ” 读法相当于汉语拼音“l”的读音。

值得强调的是韩文字母中的辅音（子音）“ㅇ”的读音与汉语拼音“r”读法相同，“ㅇㅇ”的读音与汉语拼音“l”的读法相同，而“ㅇ”的读法取“ㅇㅇ”和“ㅇㅇ”的中间音。

最后把我所讲解的韩文字母整理一下：

按发音顺序排列：

辅音（子音）：

	基本音	紧音	爆破音	翘舌音
喉音	ㅇ、		ㅇ	
牙（舌根）音	ㄱ、ㄲ	ㄱ、(ㄲ)	ㅋ	(ㅇ)
舌（舌尖）音	ㄴ、ㄷ	ㄴ	ㄷ	
齿音	ㄸ、ㅌ	ㄸ、ㅌ	ㅌ	(ㅇ)、(ㅇ)、(ㅇ)
唇音	ㅍ、ㅂ	ㅍ	ㅍ	(ㅇ)

以阴阳的顺序排列：

元音（母音）：

	基本音	基本音+ㅣ	基本音+ㅏ	基本音+ㅑ	基本音+ㅓ	基本音+ㅕ
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为： $\frac{\quad}{\text{“ ㄴ ”}} = \text{“ 안 ”}$, $\frac{\quad}{\text{“ 〇 ”}} = \text{“ 녕 ”}$,

“ ㅎ ” + “ ㅏ ” = “ 하 ” , “ ㅓ ” + “ ㅕ ” = “ 세 ” , “ 〇 ” + “ ㅛ ” = “ 요 ” 。

Easy to learn the key positions.

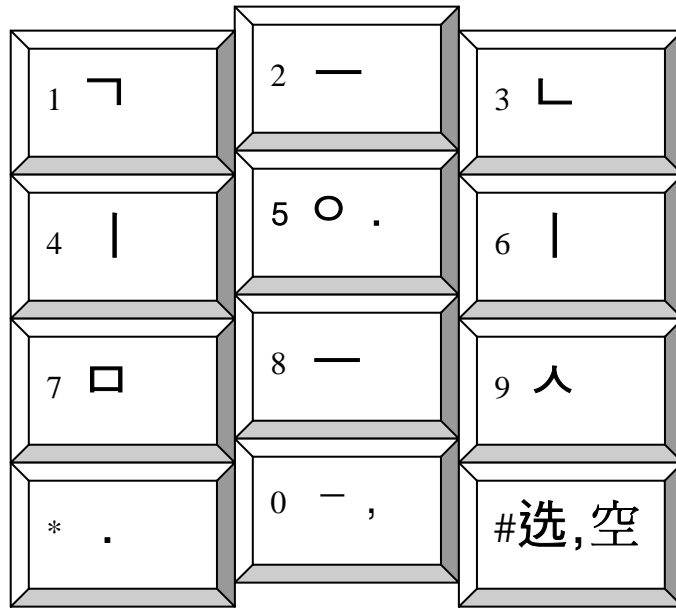
In 1996, I contracted with Professor Jin Sue Ji (金淑子) of Yanbian University, Jilin, China to test on the time consumed to memorize my keyboard arrays and input speed of Hanguk with my keyboard. She has tested initially with four female graduates of medical school. And later, with ten other educational level of attainment, she hired these people for research. Amazing results were acquired. It took only 27 minutes average to memorize Ahnmatae keyboard.

It is easy to memorize the key positions as it is arranged logically.

The home row and the upper rows from the home row is divided into two parts. On the left is the consonants, called *Chosung* (初声), and on the right side is vowels, called *Jungsung* (中声). Bottom rows are nothing but the tone marks (声标符号), Vowels which comes after vowels, called *Jongsung* (终声) and the second vowels (复元音).

Further research

Dandong Ahnmatae Computer Development Co. is in the process of developing Ahnmatae Ortho-Phonetic input system with 12key cellular phone keyboard, which is expected to market in 2008. This system is much faster than T-9 technology. Most of the cellular phones in China use this input system and phone manufacturers had to pay over US \$ 400,000,000 to the US patent holder in 2005.



With 12 key keyboards which I displayed above, you can send Hanzi message much faster than T-9 technology, just like AnYin 3.0 Chinese Input system is much faster than Pinyin system.

English input system development will be much easier than developing Chinese input system

Following is one example how an English word, Fullerton, can be typed on the Ahnmatae keyboard, simultaneously.

FUL + LER + TON

☞ ㄣ ㄨ ㄨ ㄨ + ㄨ ㄨ ㄨ + ㄣ ㄨ ㄨ

This word, Fullerton, is broken into the syllables and directly put it on the Ahnmatae Ortho-Phonetic keyboard, shown on following pictures.



Instead of 9 strokes on English keyboard, it takes only 3 strokes on the phonetic keyboard.

Conclusion

As we have briefly observed how the Jeung Eum was applied to Hanzi, one of the most difficult writing systems in the world, we can apply it to other languages in the world within next few years..

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