

This document describe about 'Hanja Hangul Converter 0.0.3'.

1. License

All files in Hanja Hangul Converter are available under [GNU General Public License](#).

Hanja Hangul Convert Project Homepage : <http://kldp.net/projects/hanja/>

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2. Describe Files

1. hanja.py : Simple Hanja Hangul Converter, coded by python.
2. README.odt and README.pdf : This document what you read now.
3. dic0.txt : List to convert CJK Compatibility Forms to Han unification. This list do same thing with Unicode normalization algorithm.
4. dic1.txt : Hanja character list, which didn't use *duuembeobchik*(두음법칙). In Korean Language in South Korea, when read sino-korean there are rule apply to first sound to make easy to pronounce. This rule is don't use in North Korea. You can download original [hanja-hangul.ods](#) file. (Han unification)
5. dic2.txt : Represent Phonetic Data in Unihan. (Han unification)
6. dic3.txt : Represent Phonetic Data in Unihan. (CJK Compatibility Forms)
7. dic4.txt : List of Sino-korean. List list extracted from [libhangul-0.0.4](#) and converted to use Unicode normalization algorithm. (Han unification)
8. dic5.txt : Exception list for covert hanja to hangul. Read 3.3 for detail. (Han unification)
9. dic6.txt : (experiment) Database to convert hangul to hanja.

3. How to use this database

3.1 You need to know first

These days there are two way to use hanja by Unicode. The first way is to use both Han unification and CJK Compatibility Forms. This way used most time in Korean daily life. MS Word and Hangul word process support this way. In this case, The CJK Compatibility Forms are used for indicate pronunciation of hanja. Most hanja character in Korean has just one pronunciation, but some character are not (most times because of *duuembeobchik* 두음법칙). So hanja character which has plural pronunciation are mapped plural code in CJK Compatibility Forms. So it makes easy to convert to hangul.

But Unicode doesn't recommends to map a character plural codes, and there are tool which names 'Unicode normalization algorithm' to make all each character map one code. So they doesn't use CJK Compatibility Forms. Some web site such as Wikipedia support this way.

Therefore someone convert hanja data in Wikipedia to hangul by MS Word, it didn't converted

correctly. To convert those hanja data correctly, it needs Sino-korean dictionary, the file 'dic4.txt' will work for this.

In North Korean there are no *duuembeobchik* not likes in South Korean. So you only need 'dic1.txt' which didn't use the rule.

3.2 Convert hanja text which use both Han unification and CJK Compatibility Forms.

To convert hanja which use both Han unification and CJK Compatibility Forms like **MS Word** and Hangul word process do. It's simple. Just convert to use these database. Those contain UniHan Phonetic Data.

1. dic2.txt
2. dic3.txt

3.3 Convert hanja text which use only Han unification

To convert hanja text which only use Han unification (Hanja which converted by Unicode normalization algorithm like **in Wikipedia**), Because of some hanja character pronounced different way by words, so it needs Sino-korean dictionary 'dic4.txt'. And the problem is left characters which can't convert to use 'dic4.txt', those character doesn't have phonetic information in character, the recommended way is to convert to the sound which most use. So the recommended way is to convert those property.

1. dic4.txt
2. dic5.txt
3. dic1.txt

When someone demands convert to this way, there are no confidence that, the all texts written by Han unification, So I recommend that convert hanja first to use 'dic0.txt' ; it makes all hanja to Han unification, then convert to hangul.

'dic5.txt' makes result naturally, because of 'dic1.txt' doesn't contain *duuembeobchik* or other phonetic reason. 'dic5.txt' contains surname of Koreans and character which always use *duuembeobchik*.

3.4 Convert hanja text to hangul (without *duuembeobchik*)

1. Convert hanja to Han unification, to use 'dic0.txt'
2. And Convert to hangul, to use 'dic1.txt'

4. hanja.py

'hanja.py' is python script to convert hanja to hangul.

4.1 Executive

To run 'hanja.py' do this in Linux terminal;

- \$ chmod a+x hanja.py // Give permission to hanja.py file.
- \$./hanja.py // And run it.

Or, You can run it by python interpreter;

- \$ python hanja.py

4.2 Convert in Input Mode

To convert hanja to hangul in Input Mode, is very simple.

\$./hanja.py # **First, Run python script.**

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Commands: exit(종료), mode(방식), reverse(역변환), list(목록)

Type hanja to convert and press enter

Choose mode to convert Hanja to Hangul

1. Han unification and CJK Compatibility Forms (MS Word)
2. Han unification only (Wikipedia, default)
3. Without duuembeobchik (North Korean)
4. Apply Unicode normalization algorithm
5. (experiment) Compatible convert with both way (1, 2)
6. (experiment) Convert Hangul to Hanja

擇> 3 # **Choose mode what you want. I choose 'With out duuembeobchik (North Korean)' in here.**

Load dic1.txt file, 27496 of indexes

Total 27496 of indexes

入1> 韓國의 歷史 # **Just input hanja, what you convert, and press enter**

出1> 한국의 력사 # **So computer convert the hanja to hangul directly. The result is right the pronounce of 歷史 is 력사 in North Korean.**

入2> mode # **If you want change converting mode, Type 'mode' or '방식' and press enter**

Choose mode to convert Hanja to Hangul

1. Han unification and CJK Compatibility Forms (MS Word)
2. Han unification only (Wikipedia, default)
3. Without duuembeobchik (North Korean)
4. Apply Unicode normalization algorithm
5. (experiment) Compatible convert with both way (1, 2)

6. (experiment) Convert Hangul to Hanja

擇> 2 # I choose '2. Han unification only (Wikipedia, default)', You can choose '2' by Just Enter without type '2'. If you are type nothing when choose mode, it selected '2' default.

Load dic4.txt file, 32237 of indexes

Load dic5.txt file, 10 of indexes

Load dic1.txt file, 27496 of indexes

Total 59743 of indexes

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Commands: exit(종료), mode(방식), reverse(역변환), list(목록)

Type hanja to convert and press enter

入3> 韓國의 歷史 # And I typed same hanja again.

出3> 한국의 역사 # The result is not same with before, because the pronounce of '歷史' in not same between South Korea and North Korea, it's '력사' in North Korean, and '역사' in South Korean. Therefore the result '한국의 역사' is right, because I choose mode 2.

入4> reverse # The command 'reverse' or '역변환' make database reverse. It's experiment function for test database. So do not use this function to convert Hangul to Hanja.

Convert Hangul to Hanja (Reverse)

入5> 한국의 역사

出5> 韓國 力士

入6> list # If you typed 'list' or '목록', you can see all lists in database, what using now.
(...)

入7> exit # To exit programmer, just type 'exit' or '종료'.

4.3 Convert in Terminal

You can also convert text file, in type command in terminal.

1. \$./hanja.py [File name to convert or String] # It will convert file or string by default mode, and print result on screen.
2. \$./hanja.py [File name to convert or String] [Mode] # It will convert file or string by select mode, and print result on screen.
3. \$./hanja.py [File name to convert or String] [Mode] [File name to save result] # It will convert file or string by select mode, and save the result to file.