

Final Report: Chinese Parser
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Parser:

Like English, Chinese is also an SVO language. We modified some codes to implement tenses, classifier, and serial verb construction.

Some changes are indicated below.

$S \rightarrow NP VP_{[Main]}$
 $VP_{[Main, Past]} \rightarrow VP \text{ Particle}_{[了]}$
 $VP_{[Main, Future]} \rightarrow \text{Particle}_{[将要]} VP$
 $VP_{[Main, Present]} \rightarrow VP$
 $Det \rightarrow \text{Number Classifier}$
 $VP \rightarrow VP VP$

All the VPs (without values) above have a default value. The VP will only get its tense until a particle attaches to it. So the upper VP will have a tense. The $VP_{[present]}$ is generated when the nothing attaches to the lower VP. The main VP that goes to S necessarily has a tense value of past, future, or present.

Lexicon:

Pronouns (Different cases share the same forms of nouns in Chinese. So no need to make different forms of the following pronouns):

我('I'), 你('you'), 他('he'), 她('she')

Nouns:

桌子('desk'), 椅子('chair'), 伞('umbrella'), 书('book')

Numbers + Demonstrative Pronoun:

一('one'), 两('two'), 三('three')

这('this'), 那('that')

Particles:

了: past tense marker

将要: future tense marker (similar to English 'will')

Verbs:

有('to have', transitive)

看('to look at'; 'read', transitive)

出海('to go to sea', intransitive)

捕鱼('to catch fish', intransitive)

Test Case (all the following test sentences in Chinese are grammatical)

intransitive:

我 将要 出海 (“I will go to sea”)

我 捕鱼 了 (“I went fishing”)

transitive & classifier

我 有 一 把 伞 (“I have an umbrella”)

我 将要 看 一 本 书 (“I will read a book”)

transitive & no classifier

我 有 伞 (“I have an umbrella”, used when refers to general umbrella,
eg. A: “It’s raining.” B: “Don’t worry. I have an umbrella.”)

serial verbal construction

我 将要 出海 捕鱼 (“I will go to sea and go fishing”)

我 出海 捕鱼 了 (“I went to sea and went fishing”)