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HW5

a)

Stack	Buffer	New Dependency	Transition
[ROOT]	[I, parsed, this, sentence, correctly]		Initial Configuration
[ROOT, I]	[parsed, this, sentence, correctly]		SHIFT
[ROOT, I, parsed]	[this, sentence, correctly]		SHIFT
[ROOT, parsed]	[this, sentence, correctly]	parsed -> I	LEFT-ARC
[ROOT, parsed, this]	[sentence, correctly]		SHIFT
[ROOT, parsed, this, sentence]	[correctly]		SHIFT
[ROOT, parsed, sentence]	[correctly]	sentence -> this	LEFT-ARC
[ROOT, parsed]	[correctly]	parsed -> sentence	RIGHT-ARC
[ROOT, parsed, correctly]	[]		SHIFT
[ROOT, parsed]	[]	parsed -> correctly	RIGHT-ARC
[ROOT]	[]	ROOT -> parsed	RIGHT-ARC

b) A sentence containing n words will be parsed in 2n steps. Because an initial configuration starts as an empty stack with each word in a buffer. Then to create the dependency tree each word is shifted onto the stack once and then a right-arc or left-arc change can happen between the words as needed. Each word will be shifted to the stack and popped off the stack once so, these two steps make it so if there are n words there will 2n steps.

f)

i. For the sentence: I disembarked and was heading to a wedding fearing my death.

Error Type: Verb Phrase Attachment Error

Incorrect dependency: wedding -> fearing

Correct dependency: heading -> fearing

ii. For the sentence: It makes me want to rush out and rescue people from dilemmas of their own making.

Error type: Coordination Attachment Error

Incorrect dependency: makes -> rescue

Correct dependency: rush -> rescue

iii. For the sentence: It is on loan from a guy named Joe O'Niell in Midland, Texas.

Error type: Prepositional Phrase Attachment Error

Incorrect dependency: named -> Midland

Correct dependency: guy -> Midland

iv. For the sentence: Brian has been one of the most crucial elements to the success of Mozilla software.

Error type: Modifier Attachment Error

Incorrect dependency: elements -> most

Correct dependency: crucial -> most

The best UAS model:

Evaluating on dev set

- dev UAS: 88.84

New best dev UAS! Saving model.

Final evaluation on test set

- test UAS: 88.94