

H2 Take-home ExerciseH2.1 Finite state transducers for morphological analysis

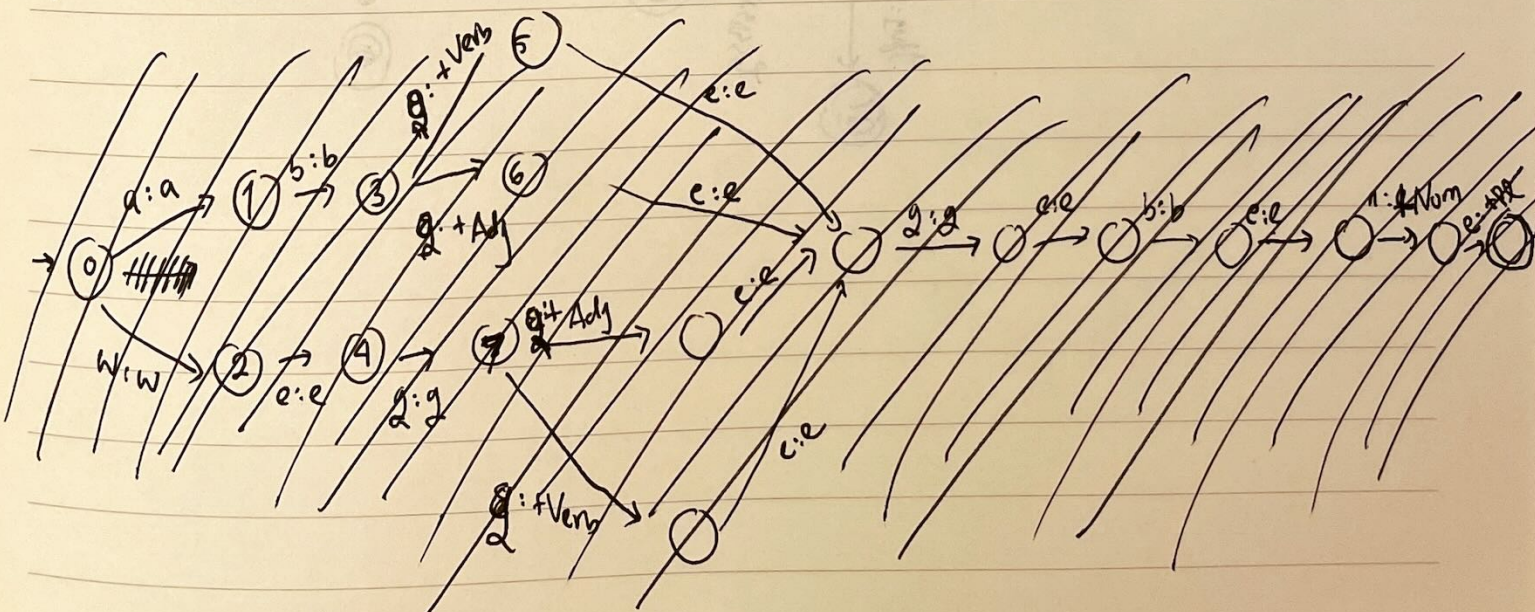
① Construct an FST from:

surface formlexical analysis

abgab	abgeben + Verb + Pers1sg + Impf ✓
abgeben	abgeben + Verb + Inf ✓
abgegeben	abgeben + Verb + Part 2 ✓
abgegebenel	abgegeben + Adj + Nom + Pl ✓
weggab	weggeben + Verb + Pers1sg + Impf ✓
weggeben	weggeben + Verb + Inf ✓
weggebenen	weggeben + Verb + Part 2 ✓
weggegebenel	weggebenen + Adj + Nom + Pl ✓

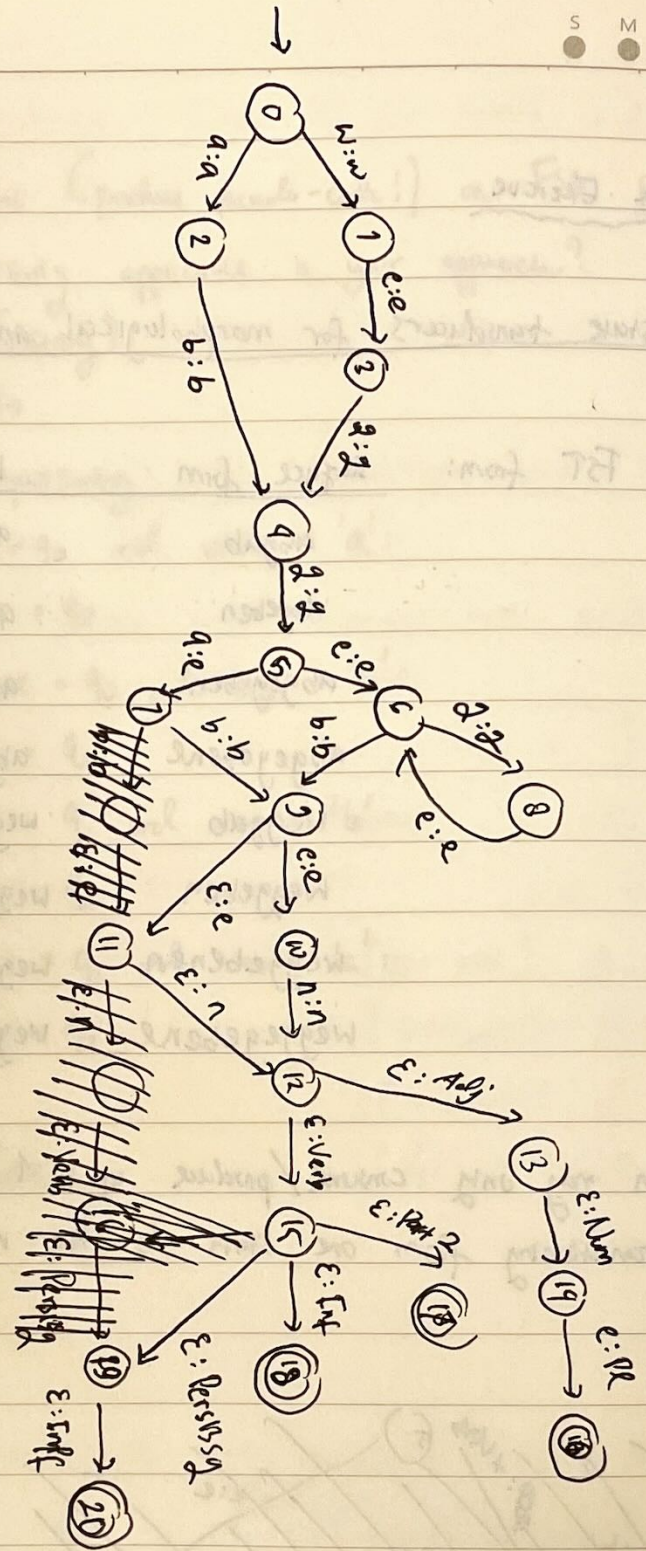
Note: Automaton may only consume/produce up to 1 symbol from input/output tapes when transitioning from one state to the next.

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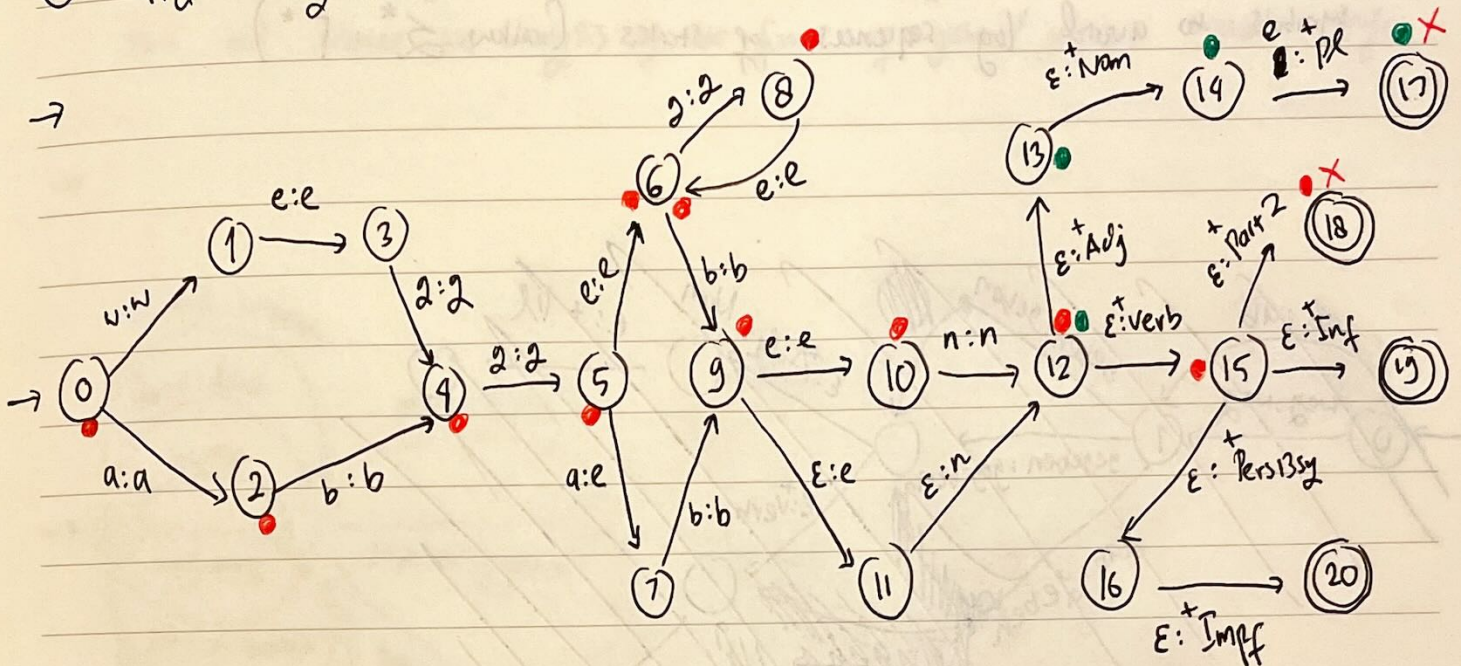
S M T W T F S



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(2) Apply matching algorithm to "abgegebenen" and note all intermediate steps.

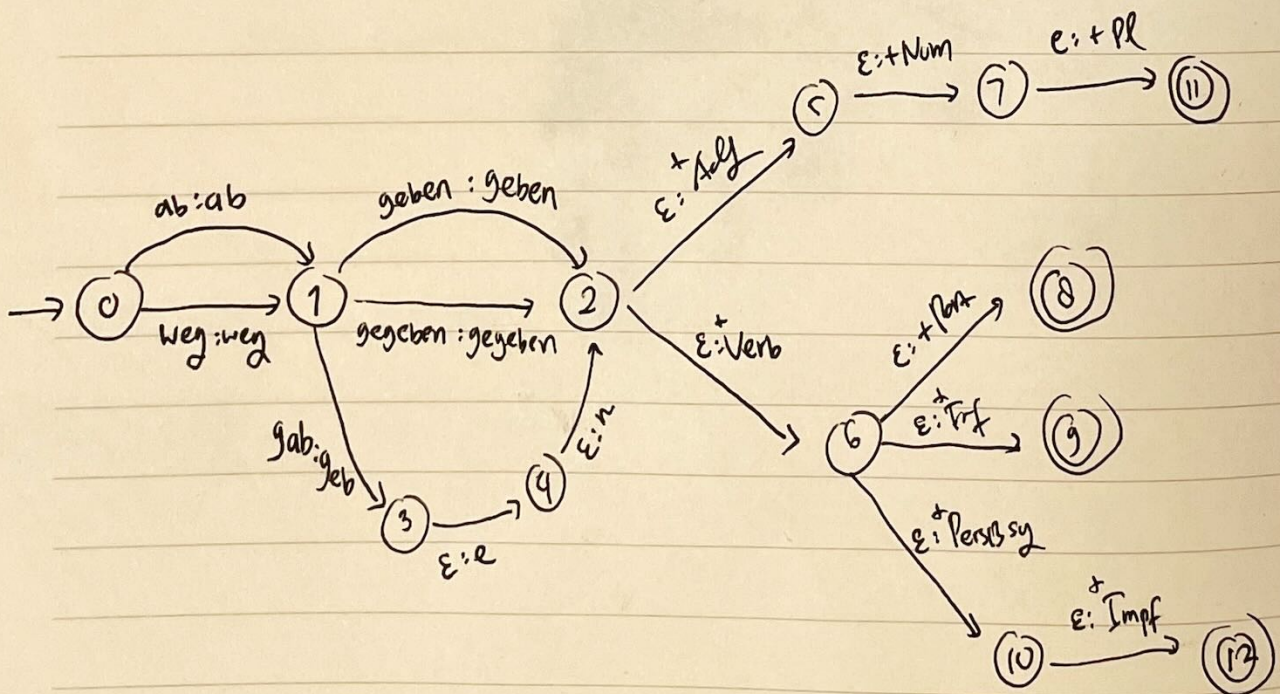
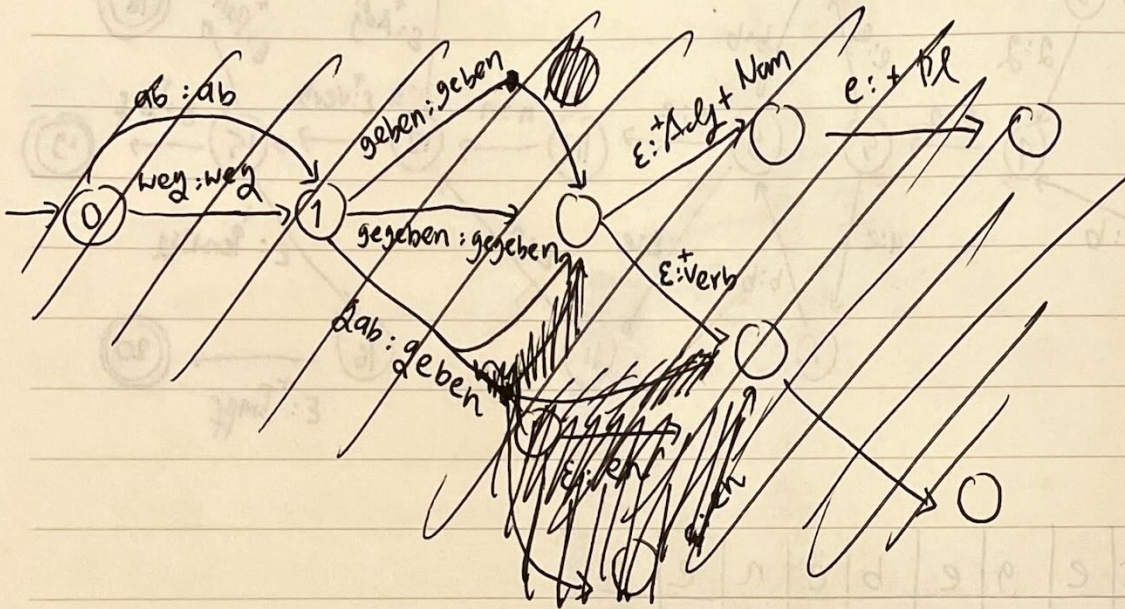


In	a	b	g	e	g	e	b	e	n	e	n	
out1	a	b	g	e	g	e	b	e	n	Verb	Part2	x
out2	a	b	g	e	g	e	b	e	n	Adj	Nom	E x

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- (3) Consolidate automaton by allowing edge inscriptions that combine multiple symbols to avoid long sequences of states. (allow $\Sigma^* : \Gamma^*$)



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(4) Add additional prefixes to automaton: durch-, ab-, bekannt-, zurück- and zu- and enable the analysis of the forms of geben/gegeben without prefix

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