	Andrew Plum Prof. Beeston Assignment #2 15 395
	11/4/2023 1) DFS: DFS: Source Removal: 1) D 2) A
FOY MANSK	(Letterpush, pop)  E3,1 Fs,2  4) C
600 1 (10 16 60 1 (10 16	B <sub>2,4</sub> G <sub>4,3</sub> 5) G A <sub>1,6</sub> C <sub>6,5</sub> D <sub>7,7</sub> G) E 7) F
	Order: ABEGFCD Control of Lange the digraph has a cycle b) can't topologically sort because the digraph has a cycle
1 Mack march	2) n=1: n=7:
O Table	n=3: n=4: n=5:
Louitnes 2	FIRE ALLE A SELECTION OF THE PARTY OF THE PA
Tral words	3) Start: empty tree Next:
Annua de la companya	Next: 456  Next: 456  Next: 356
4	Next: 356
	Next:
4)8	ack Side

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1	4)	Unordered	Array	Ordered	Array	Binary See	arch Tree	Balanced S	earth Tree	Hash	ing				
	Lank	Average-Lase	Worst-Case	Average-Lase	Worst-Lase	Average-laxe	Worst-lase	Average-lase	Worst-Case	Average Case	Worst-La				
	Search	Q(n)		Olloan)	Ollowal	(Xloan)	(n)	0(10g n)	U(log n)	00	U				
	Insert	0(1)	0(1)	O(n)	0(n)	0/100 0/	O(n)	U(log n)	Vilogni	UI	0111				
	Delete	O(n)	0(n)	0(n)	O(n)	Ologn)	O(n) 1	U(log n)	U(lign)	0(1)	O(n)				
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	5) a)	5) a) Big Theta Complexity													
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		- sele	ition "	port. 9	(n-)			*	T.F.		20				
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		The a	verage	time	ot 16	recent	lize m	panin	a thai	t the					
	b) Insertion Sort: The average time of insertion sort is proportional to the square of the input size meaning that the														
	to the square increases quadratically as the														
	officient with large inpos														
	which sort is proportional														
>															
4	The and Those Westing will account														
-	isout 1:206 belowse the run time grows again														
+	1	with the	e inpu	t size	instead	of qu	iadrati	cally.							
	/	1 1 - 4	/ .CL		AND DESCRIPTION OF THE PARTY OF						,				
	The average run time of selection sort is proportional to the square of the input size meaning that the run														
	+	ime inc	reases	quadr	ratically	y as the	ne inpi	ut si	ze	increa	1505				
	m	he squ ime inc reaning nd gen	genera	lly sele	ection	sort i	5 05 5	low	as ir	Bertion	n sort				
	a	nd gen	enally	Slower	than than	1 quiel	5004	- W							
		7			A CA						No.				

A SAMMORITA H. Z.

6)

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Assignment #2 Andrew Plum Prof. Beeston Cont. (5 395 6) a) Input text: "aaaaaaaaaaaa" Pattern: "aaaab" 6) i) Input text: "alnaldodk Imalnalno" ii) Boyer - Moore Algorithm Shifts: Pattern: "alnalno" alinalido dik ilmalinalino alinalino alinalino alinalino alinalino alinalino Horspool's Algorithm Shifts:

all na I dodk I ma I na II no
all na I no alnalno The shifts between the algorithms are different because the Boyer-Moore algorithm uses the good suffix rule and the bad character rule whereas Horspool's algorithm only uses the bad character rule.