

Assignment 09

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Task 09: Recursive Function Analysis

Table 1: Recursive Function Call Trace

Call	Depth	n	Expression	Return Value	Function Results	
c1	0	8	$8 \times \text{calculate}(6)$	1536		
c2	1	6	$6 \times \text{calculate}(4)$	192	calculate(8)	1536
c3	2	4	$4 \times \text{calculate}(2)$	32	calculate(5)	37
c4	3	2	$2 \times \text{calculate}(0)$	8		
c5	4	0	base case: return 4	4		

Task 10: String Processing Function

Table 2: Function Execution Trace

Call	Depth	s	n	Output	Next/Return	Program Output	
f1	0	""	1	10	fun("1",0)	Line 1	10
f2	1	"1"	0	1003	fun("10",3)	Line 2	1003
f3	2	"10"	3	1032	fun("103",2)	Line 3	1032
f4	3	"103"	2	103223	fun("1032",5)	Line 4	103223
f5	4	"1032"	5	—	"510325"	Line 5	510325