

Computer Architecture, Spring 2021

Homework 1

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1 Recursive Function

Registers Memory Cache

Mnemonic	Number	Value
zero	x0	0x00000000
ra	x1	0x00000000
sp	x2	0xbffffff0
gp	x3	0x10000000
tp	x4	0x00000000
t0	x5	0x000010c8
t1	x6	0x00000002

Console

This is HW1-1: $T(n) = 8T(n/2) + 4n$, $T(1) = 7$
Enter a number: 10
The result is: 4296

2 Encryption

Registers Memory Cache ST

Address	+3	+2	+1	+0
0x0001020c	'\0'	'\0'	'\0'	'\0'
0x0001020d	'\0'	'\0'	'\0'	'e'
0x0001020e	'g'	'i'	'h'	'y'
0x0001020f	'r'	'o'	'\0'	'l'
0x00010210	'\0'	'\0'	'\0'	'\0'
0x00010211	'\0'	'\0'	'\0'	'\0'
0x00010212	'\0'	'\0'	'\0'	'\0'

Console

This is HW1-2:
Plaintext: i love ca
Ciphertext: l0oryh1ge