

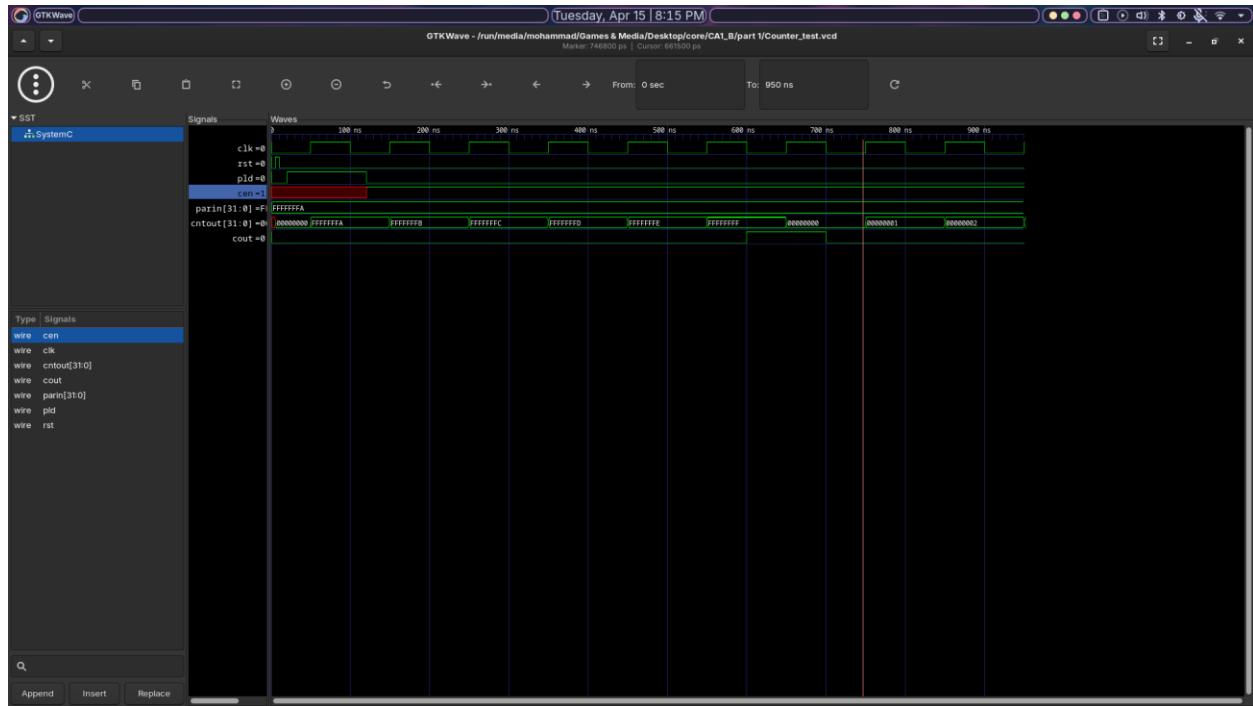
In the name of God

Core-Based Embedded System Design

Mohammad Yahyapour
CA1

Part B

Part 1



Part 2

```
!!! RF[14] = 40320          ##### PC = 84 Cycle : 1474 & Time: 7370#####
!!! RF[14] = 40320          ##### PC = 88 Cycle : 1487 & Time: 7435#####
!!! RF[14] = 10             ##### PC = 92 Cycle : 1500 & Time: 7500#####
!!! RF[14] = 10             ##### PC = 56 Cycle : 1508 & Time: 7540#####
!!! RF[14] = 10             ##### PC = 60 Cycle : 1521 & Time: 7605#####
!!! RF[14] = 362880          ##### PC = 64 Cycle : 1534 & Time: 7670#####
!!! RF[14] = 362880          ##### PC = 68 Cycle : 1575 & Time: 7875#####
!!! RF[14] = 362880          ##### PC = 72 Cycle : 1588 & Time: 7940#####
!!! RF[14] = 362880          ##### PC = 76 Cycle : 1601 & Time: 8005#####
!!! RF[14] = 362880          ##### PC = 80 Cycle : 1609 & Time: 8045#####
!!! RF[14] = 362880          ##### PC = 84 Cycle : 1622 & Time: 8110#####
!!! RF[14] = 362880          ##### PC = 88 Cycle : 1635 & Time: 8175#####
!!! RF[14] = 11             ##### PC = 92 Cycle : 1648 & Time: 8240#####
!!! RF[14] = 11             ##### PC = 96 Cycle : 1656 & Time: 8280#####
!!! RF[14] = 11             ##### PC = 100 Cycle : 1669 & Time: 8345#####
!!! RF[14] = 11             ##### PC = 104 Cycle : 1682 & Time: 8410#####
!!! RF[14] = 3628800          ##### PC = 108 Cycle : 1695 & Time: 8475#####
!!! RF[14] = 3628800          ##### PC = 112 Cycle : 1703 & Time: 8515#####
!!! RF[14] = 3628800          ##### PC = 116 Cycle : 1711 & Time: 8555#####
!!! RF[14] = 3628800          ##### PC = 120 Cycle : 1724 & Time: 8620#####
!!! RF[14] = 3628800          ##### PC = 124 Cycle : 1737 & Time: 8685#####
!!! RF[14] = 3628800
Inst Not Found 4294967295
free(): invalid pointer
Aborted (core dumped)
```

Online gcc

```

SEARCH ⌂ ⌂ ⌂ ⌂ ⌂ ⌂ ⌂ ⌂
dump.txt 2 | Memory.h 2 | dump.txt X
SimulationTime Aa ab, * Replace AB ⌂ ...
4 results in 2 files - Open in editor
C Memory.h 2 (2)
#define SimulationTime ... wait (SimulationTime - 1, ...
G Source.cpp 2 (2)
sc_start(SimulationTime,S... ...SimulationTime,SC_NS); ...

dump.txt
4047 4040 XXXXXXXX
4048 4047 XXXXXXXX
4049 4048 XXXXXXXX
4050 4049 XXXXXXXX
4051 4050 XXXXXXXX
4052 4051 XXXXXXXX
4053 4052 XXXXXXXX
4054 4053 XXXXXXXX
4055 4054 XXXXXXXX
4056 4055 XXXXXXXX
4057 4056 XXXXXXXX
4058 4057 XXXXXXXX
4059 4058 XXXXXXXX
4060 4059 XXXXXXXX
4061 4060 00001010
4062 4061 00000000
4063 4062 00000000
4064 4063 00000000
4065 4064 00000000
4066 4065 01011111
4067 4066 00110111
4068 4067 00000000
4069 4068 00000000
4070 4069 00000000
4071 4070 00000000
4072 4071 00000000
4073 4072 XXXXXXXX
4074 4073 XXXXXXXX
4075 4074 XXXXXXXX
4076 4075 XXXXXXXX
4077 4076 00001011
4078 4077 00000000
4079 4078 00000000
4080 4079 00000000

```

Calculator

Programmer

0011 0111 0101 1111 0000 0000

HEX 37 5F00
DEC 3,628,800
OCT 15 657 400
BIN 0011 0111 0101 1111 0000 0000

Bitwise Bit shift

A	<<	>>	CE	
B	()	%	÷
C	7	8	9	×
D	4	5	6	-
E	1	2	3	+
F	+/-	0	.	=

Local gcc

```
!!! RF[14] = 10      ##### PC = 820 Cycle : 4393 & Time: 21965#####
!!! RF[14] = 10      ##### PC = 824 Cycle : 4406 & Time: 22030#####
!!! RF[14] = 10      ##### PC = 828 Cycle : 4419 & Time: 22095#####
!!! RF[14] = 10      ##### PC = 832 Cycle : 4432 & Time: 22160#####
!!! RF[14] = 10      ##### PC = 836 Cycle : 4445 & Time: 22225#####
!!! RF[14] = 10      ##### PC = 840 Cycle : 4453 & Time: 22265#####
!!! RF[14] = 10      ##### PC = 844 Cycle : 4466 & Time: 22330#####
!!! RF[14] = 10      ##### PC = 848 Cycle : 4479 & Time: 22395#####
!!! RF[14] = 10      ##### PC = 852 Cycle : 4492 & Time: 22460#####
!!! RF[14] = 10      ##### PC = 856 Cycle : 4500 & Time: 22500#####
!!! RF[14] = 10      ##### PC = 860 Cycle : 4508 & Time: 22540#####
!!! RF[14] = 10      ##### PC = 864 Cycle : 4516 & Time: 22580#####
!!! RF[14] = 10      ##### PC = 868 Cycle : 4529 & Time: 22645#####
!!! RF[14] = 10      ##### PC = 872 Cycle : 4542 & Time: 22710#####
!!! RF[14] = 10      ##### PC = 876 Cycle : 4550 & Time: 22750#####
!!! RF[14] = 10      ##### PC = 476 Cycle : 4558 & Time: 22790#####
!!! RF[14] = 10      ##### PC = 476 Cycle : 4566 & Time: 22830#####
!!! RF[14] = 10      ##### PC = 476 Cycle : 4574 & Time: 22870#####
!!! RF[14] = 10      ##### PC = 476 Cycle : 4582 & Time: 22910#####
!!! RF[14] = 10      ##### PC = 476 Cycle : 4590 & Time: 22950#####
!!! RF[14] = 10      ##### PC = 476 Cycle : 4598 & Time: 22990#####
!!! RF[14] = 10      ##### PC = 476 Cycle : 4606 & Time: 23030#####
!!! RF[14] = 10      ##### PC = 476 Cycle : 4614 & Time: 23070#####
!!! RF[14] = 10      ##### PC = 476 Cycle : 4622 & Time: 23110#####
!!! RF[14] = 10      ##### PC = 476 Cycle : 4630 & Time: 23150#####
!!! RF[14] = 10      ##### PC = 476 Cycle : 4638 & Time: 23190#####
```

local gcc

online gcc execution time: 8685 ns

local gcc execution time: 22790 ns