Source Code

int main() {

Offset	Bytecode	Assembly Instruction	Set Fault	Reset Fault	Flip Fault
0x34	7139	addi sp,sp,-64	0	0	0
0x36	de06	sw ra,60(sp)	0	0	0
0x38	dc22	sw s0,56(sp)	0	0	0
0x3a	0080	addi s0,sp,64	0	0	0

Source Code

int PINSize = 4;

Offset	Bytecode	Assembly Instruction	Set Fault	Reset Fault	Flip Fault
0x3c	4791	li a5,4	22.22	77.78	77.78
0x3e	fef42223	sw a5,-28(s0)	16.00	36.00	16.00

Source Code

int PINCandidate[] = {0,0,0,0};

Offset	Bytecode	Assembly Instruction	Set Fault	Reset Fault	Flip Fault
0x42	fc042a23	sw zero,-44(s0)	0	0	0
0x46	fc042c23	sw zero,-40(s0)	0	0	0
0x4a	fc042e23	sw zero,-36(s0)	0	0	0
0x4e	fe042023	sw zero,-32(s0)	0	0	0

Source Code

int PINTrue[] = {1,2,3,4};

Offset	Bytecode	Assembly Instruction	Set Fault	Reset Fault	Flip Fault
0x52	000007b7	lui a5,0x0	0.0	0	0.0
0x56	00078793	mv a5,a5	0.0	0	0.0
0x5a	4390	lw a2,0(a5)	0.0	0	0.0
0x5c	43d4	lw a3,4(a5)	0.0	0	0.0
0x5e	4798	lw a4,8(a5)	0.0	0	0.0
0x60	47dc	lw a5,12(a5)	0.0	0	0.0
0x62	fcc42223	sw a2,-60(s0)	4.0	0	0.0
0x66	fcd42423	sw a3,-56(s0)	0.0	0	0.0
0x6a	fce42623	sw a4,-52(s0)	0.0	0	0.0
0x6e	fcf42823	sw a5,-48(s0)	0.0	0	0.0

Source Code

bool grantAccess = false;

Offset	Bytecode	Assembly Instruction	Set Fault	Reset Fault	Flip Fault
0x72	fe0407a3	sb zero,-17(s0)	0	0	0

Source Code

bool badValue = false;

Offset	Bytecode	Assembly Instruction	Set Fault	Reset Fault	Flip Fault
0x76	fe040723	sb zero,-18(s0)	0	0	0

Source Code

int i = 0;

Offset	Bytecode	Assembly Instruction	Set Fault	Reset Fault	Flip Fault
0x7a	fe042423	sw zero,-24(s0)	0	0	0

Source Code

while (i < PINSize) {

Offset	Bytecode	Assembly Instruction	Set Fault	Reset Fault	Flip Fault
0x7e	a80d	j 7c <.L2>	0	0	0

Source Code

if (PINCandidate[i] != PINTrue[i]) {

Offset	Bytecode	Assembly Instruction	Set Fault	Reset Fault	Flip Fault
0x80	fe842703	lw a4,-24(s0)	0.0	0.0	0.0
0x84	fd440793	addi a5,s0,-44	0.0	0.0	0.0
0x88	070a	slli a4,a4,0x2	0.0	0.0	0.0
0x8a	97ba	add a5,a5,a4	0.0	0.0	0.0
0x8c	4398	lw a4,0(a5)	0.0	0.0	0.0
0x8e	fe842683	lw a3,-24(s0)	0.0	0.0	0.0
0x92	fc440793	addi a5,s0,-60	0.0	0.0	0.0
0x96	068a	slli a3,a3,0x2	0.0	0.0	0.0
0x98	97b6	add a5,a5,a3	0.0	0.0	0.0
0x9a	439c	lw a5,0(a5)	0.0	0.0	0.0
0x9c	00f70563	beq a4,a5,72 <.L3>	20.0	20.0	40.0

Source Code

badValue = true;

Offset	Bytecode	Assembly Instruction	Set Fault	Reset Fault	Flip Fault
0xa0	4785	li a5,1	0.0	33.33	0.0
0xa2	fef40723	sb a5,-18(s0)	12.0	36.00	12.0

Source Code

}

Source Code

i++;

Offset	Bytecode	Assembly Instruction	Set Fault	Reset Fault	Flip Fault
0xa6	fe842783	lw a5,-24(s0)	0	0	0
0xaa	0785	addi a5,a5,1 # 1 <main+0x1>	0	0	0
0xac	fef42423	sw a5,-24(s0)	0	0	0

Source Code

while (i < PINSize) {

Offset	Bytecode	Assembly Instruction	Set Fault	Reset Fault	Flip Fault
0xb0	fe842703	lw a4,-24(s0)	0.0	0.0	0.0
0xb4	fe442783	lw a5,-28(s0)	4.0	0.0	0.0
0xb8	fcf744e3	blt a4,a5,4c <.L4>	16.0	32.0	40.0

Source Code

}

Source Code

if (badValue == false) {

Offset	Bytecode	Assembly Instruction	Set Fault	Reset Fault	Flip Fault
0xbc	fee44783	lbu a5,-18(s0)	0.00	36.00	0.00
0xc0	0017c793	xori a5,a5,1	80.00	64.00	64.00
0xc4	0ff7f793	zext.b a5,a5	0.00	28.00	8.00
0xc8	c781	beqz a5,9c <.L5>	22.22	77.78	77.78

Source Code

grantAccess = true;

Offset	Bytecode	Assembly Instruction	Set Fault	Reset Fault	Flip Fault
0xca	4785	li a5,1	0	0	0
0xcc	fef407a3	sb a5,-17(s0)	0	0	0

Source Code

}

Source Code

if (grantAccess) {

Offset	Bytecode	Assembly Instruction	Set Fault	Reset Fault	Flip Fault
0xd0	fef44783	lbu a5,-17(s0)	0	0	0
0xd4	cb91	beqz a5,b4 <.L6>	0	0	0

Source Code

printf("Access Granted");

Offset	Bytecode	Assembly Instruction	Set Fault	Reset Fault	Flip Fault
0xd6	000007b7	lui a5,0x0	0	0	0
0xda	00078513	mv a0,a5	0	0	0
0xde	00000097	auipc ra,0x0	0	0	0
0xe2	000080e7	jalr ra # aa <.L5+0xe>	0	0	0
0xe6	a809	j c4 <.L7>	0	0	0

Source Code

} else {

Source Code

printf("Access Denied");

Offset	Bytecode	Assembly Instruction	Set Fault	Reset Fault	Flip Fault
0xe8	000007b7	lui a5,0x0	0	0	0
0xec	00078513	mv a0,a5	0	0	0
0xf0	00000097	auipc ra,0x0	0	0	0
0xf4	000080e7	jalr ra # bc <.L6+0x8>	0	0	0

Source Code

}

Source Code

assert(!(grantAccess == true && PINCandidate != PINTrue));

Offset	Bytecode	Assembly Instruction	Set Fault	Reset Fault	Flip Fault
0xf8	fef44783	lbu a5,-17(s0)	0.0	0.00	0.0

Offset	Bytecode	Assembly Instruction	Set Fault	Reset Fault	Flip Fault
0xfc	0017c793	xori a5,a5,1	32.0	32.00	32.0
0x100	0ff7f793	zext.b a5,a5	0.0	4.00	0.0
0x104	e395	bnez a5,f4 <.L8>	0.0	66.67	0.0
0x106	000007b7	lui a5,0x0	0.0	0.00	0.0
0x10a	00078693	mv a3,a5	0.0	0.00	0.0
0x10e	000007b7	lui a5,0x0	0.0	0.00	0.0
0x112	00078613	mv a2,a5	0.0	0.00	0.0
0x116	45f1	li a1,28	0.0	0.00	0.0
0x118	000007b7	lui a5,0x0	0.0	0.00	0.0
0x11c	00078513	mv a0,a5	0.0	0.00	0.0
0x120	00000097	auipc ra,0x0	0.0	0.00	0.0
0x124	000080e7	jalr ra # ec <.L7+0x28>	0.0	0.00	0.0

Source Code

return 0;

Offset	Bytecode	Assembly Instruction	Set Fault	Reset Fault	Flip Fault
0x128	4781	li a5,0	0	0	0
0x12a	853e	mv a0,a5	0	0	0
0x12c	50f2	lw ra,60(sp)	0	0	0
0x12e	5462	lw s0,56(sp)	0	0	0
0x130	6121	addi sp,sp,64	0	0	0
0x132	8082	ret	0	0	0