

# **A PLATFORM INDEPENDENT GUI FOR THE PEANUT SOFTWARE SIMULATOR**

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# PeANUt

- PeANUt was created by the department of Computer Science for teaching purposes
- PeANUt is a 16 bit simple software microprocessor
- Why choose a software simulator instead of hardware?

# PeANUt

PeANUt : The Visible Machine v2.01

assemble join **MMI-IMG** load IMG quit

Registers

AC: 0000000000000000  
SP: 0000000000010001  
XR: 0000000000000000  
CI: 0000000000000000  
PSW: 0010000000000010

Code View

```
0 - [ 0 ] -  
1 - [ 0 ] -  
2 load #10  
3 store 0  
4 load #1
```

Console

execute inc PC  
eval op fetch

PC: a0002  
CCs: EN GT EQ OV  
MAR: 0000000000010000  
MDR: 1101010000000001

Delay: 3

I/O Window

Load Save Clear

Memory

Traps BreakPoints Setup Help

Trace : PC 2

0	- [ 0 ] -
1	- [ 0 ] -
2	load #10
3	store 0
4	load #1
5	store 1
6	load 0
7	cmp #0
8	beq 16
9	load 1
10	mul #2
11	store 1
12	load 0
13	sub #1
14	store 0
15	jmp 6
16	trap #1
17	- [ 0 ] -
18	- [ 0 ] -
19	- [ 0 ] -
20	- [ 0 ] -
21	- [ 0 ] -
22	- [ 0 ] -
23	- [ 0 ] -
24	- [ 0 ] -
25	- [ 0 ] -
26	- [ 0 ] -
27	- [ 0 ] -
28	- [ 0 ] -

Trace : SP 17

11	10241
12	9216
13	4097
14	10240
15	40966
16	54273
17	0
18	0
19	0
20	0
21	0
22	0
23	0
24	0
25	0

Trace : Write 0

0	0
1	0
2	1034
3	10240
4	1025
5	10241
6	9216
7	7168
8	42000
9	9217
10	6146
11	10241

while-example.img Idle

# PeANUt Program Example

○			; int main() {
○	n: block 1		; int n;
○	pn: block 1		; int pn;
○	start:		;
○	load #10		; n = 10;
○	store n		;
○	load #1		; pn = 1;
○	store pn		;
○	while1: load n		; while (n != 0) {
○	cmp #0		;
○	beq endwh1		;
○	load pn		; pn = pn * 2;
○	mul #2		;
○	store pn		;
○	load n		; n = n - 1;
○	sub #1		;
○	store n		;
○	jmp while1		; }
○	endwh1: trap #1		; return 0;
○	end start		; }

# Old PeANUt Design



# Key Issues

- ◎ Platform Compatibility
- ◎ Maintainability of the software
- ◎ Uses Tcl/Tk scripting language

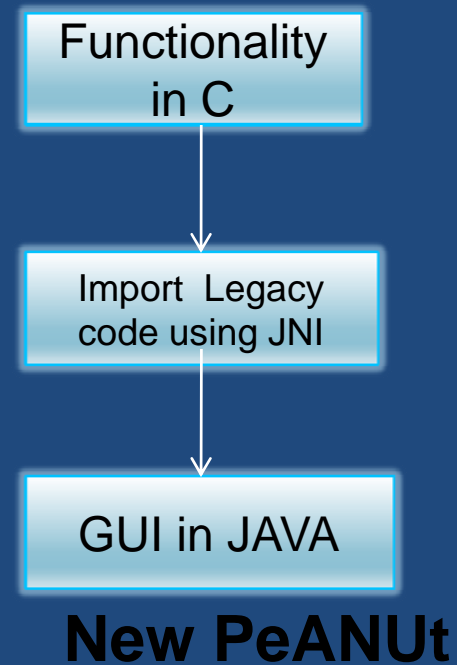
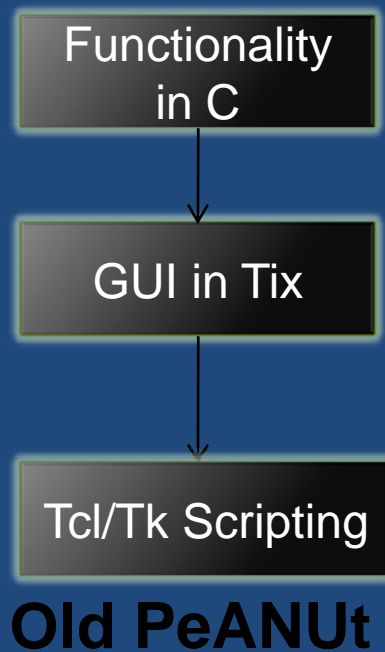
# Approach

- ◎ JAVA or Python or Jython??  
Why choose JAVA?

Answer= Java Native Interface(JNI)

- ◎ To make the software more maintainable  
Software Design Methodologies will be used

# Old PeANUt vs New PeANUt



# Testing

- Manual Testing
  - Advantages and Disadvantages
- Automated Testing
- Why use Automated Testing?
- Testing tools like Abbot, Marathon

**THANK YOU**