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ASM Lab 5/6

PART 1::

The screenshot displays the ASMLAB6_P1 - VisUAL emulator interface. The window title is "ASMLAB6_P1 - VisUAL". The menu bar includes "File" and "Help". The toolbar contains buttons for "O...", "Setti...", "T...", "Emulation ... 6 0", "Exe...", "R...", "Step Backw...", and "Step Forw...".

The main area is split into two panes. The left pane shows assembly code with line numbers 1 through 8. The code is as follows:

```
1  MOV    r0, #0
2  MOV    r1, #10
3
4  again  ADD    r0, r0, r1
5        SUBS   r1, r1, #1
6        BNE    again
7  END
8
```

The right pane displays the state of the registers and other components. The registers are listed in a table:

Register	Value	Display R9
R0	55	...
R1	0x0	...
R2	0x0	...
R3	0x0	...
R4	0x0	...
R5	0x0	...
R6	0x0	...
R7	0x0	...
R8	0x0	...
R9	0x0	...
R...	0x0	...
R...	0x0	...
R...	0x0	...
R...	0xFF000000	...
LR	0x0	...
PC	0x1C	...

At the bottom of the interface, there is a status bar showing "Clock Cycles" and "Current Instruction: 0 Total: 50". Below this, the "CSPR Status Bits (NZCV)" are displayed as a sequence of four bits: 0, 1, 1, 0.

PART 2::

ASMLAB6_P2 - VisUAL

File Help

... O... ... Setti... T... Emulation ... 0 Exe... R... Step Backw... Step Forw...

Reset to continue editing code

```
1 MOV r0, #3 ;r0 is current number
2 MOV r1, #0 ;r1 is count of number of
3
4 again ADD r1, r1, #1 ;increment number of
5 ANDS r7, r0, #1 ;test whether r0 is o
6 BEQ even
7 ADD r0, r0, LSL #1 ;if odd, set r0
8 ADD r0, r0, #1
9 B again ;and repeat (guaranteed r0
10 even MOV r0, r0, ASR #1 ;if even, set r0 = r0
11 SUBS r7, r0, #1 ;and repeat if r0 !=
12 BNE again
13 halt END ;stop computation
14
```

R0	1	...	...	...
R1	7	...	...	...
R2	0x0	...	...	...
R3	0x0	...	...	...
R4	0x0	...	...	...
R5	0x0	...	...	...
R6	0x0	...	...	...
R7	0	...	...	...
R8	0x0	...	...	...
R9	0x0	...	...	...
R...	0x0	...	...	...
R...	0x0	...	...	...
R...	0x0	...	...	...
R...	0xFF000000	...	...	...
LR	0x0	...	...	...
PC	0x34	...	...	...

Clock Cycles Current Instruction: 0 Total: 66

CSPR Status Bits (NZCV) 0 1 1 0