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                    CS107e Lab 3 Part 1 stack diagram
                    State when at winky.c, line 4


           Address        Contents
          [0x7ffffffc]    00 00 80 1c    saved pc      _cstart frame
          [0x7ffffff8]    00 00 80 0c    saved lr
          [0x7ffffff4]    08 00 00 00    saved ip
          [0x7ffffff0]    00 00 00 00    saved fp
          [0x7ffffec]     00 00 80 c4    saved pc      main frame
          [0x7ffffe8]     00 00 80 40    saved lr
          [0x7ffffe4]     07 ff ff f0    saved ip
          [0x7ffffe0]     07 ff ff fc    saved fp
          [0x7ffffdc]     00 00 00 00
          [0x7ffffd8]     00 00 61 00
          [0x7ffffd4]     00 00 80 94    saved pc      winky frame
          [0x7ffffd0]     00 00 80 d0    saved lr
          [0x7ffffcc]     07 ff ff d8    saved ip
          [0x7ffffc8]     07 ff ff ec    saved fp
          [0x7ffffc4]     00 00 00 00
          [0x7ffffc0]     00 00 80 e0
 fp =>    [0x7ffffbc]     00 00 80 78    saved pc      binky frame
          [0x7ffffb8]     00 00 80 a8    saved lr
          [0x7ffffb4]     07 ff ff c0    saved ip
 sp =>    [0x7ffffb0]     07 ff ff d4    saved fp
                          //////////
          [  0x80d8]      e1 2f ff 1e    <main+32>     bx      lr
          [  0x80d4]      e8 9d 68 00    <main+28>     ldm     sp, {fp, sp, lr}
          [  0x80d0]      e2 4b d0 0c    <main+24>     sub     sp, fp, #12
          [  0x80cc]      eb ff ff ed    <main+20>     bl      0x8088 <winky>
          [  0x80c8]      e2 4b 00 14    <main+16>     sub     r0, fp, #20
          [  0x80c4]      e2 4d d0 08    <main+12>     sub     sp, sp, #8
          [  0x80c0]      e2 4c b0 04    <main+8>      sub     fp, ip, #4
          [  0x80bc]      e9 2d d8 00    <main+4>      push    {fp, ip, lr, pc}
          [  0x80b8]      e1 a0 c0 0d    <main+0>      mov     ip, sp
          [  0x80b4]      e1 2f ff 1e    <winky+44>    bx      lr
          [  0x80b0]      e8 9d 68 18    <winky+40>    ldm     sp, {r3, r4, fp, sp, lr}
          [  0x80ac]      e2 4b d0 14    <winky+36>    sub     sp, fp, #20
          [  0x80a8]      e0 84 00 00    <winky+32>    add     r0, r4, r0
          [  0x80a4]      eb ff ff f0    <winky+28>    bl      0x806c <binky>
          [  0x80a0]      e3 a0 00 09    <winky+24>    mov     r0, #9
          [  0x809c]      e5 c0 30 01    <winky+20>    strb    r3, [r0, #1]
          [  0x8098]      e3 a0 30 61    <winky+16>    mov     r3, #97
          [  0x8094]      e1 a0 40 00    <winky+12>    mov     r4, r0
          [  0x8090]      e2 4c b0 04    <winky+8>     sub     fp, ip, #4
          [  0x808c]      e9 2d d8 18    <winky+4>     push    {r3, r4, fp, ip, lr, pc}
          [  0x8088]      e1 a0 c0 0d    <winky+0>     mov     ip, sp
          [  0x8084]      e1 2f ff 1e    <binky+24>    bx      lr
          [  0x8080]      e8 9d 68 00    <binky+20>    ldm     sp, {fp, sp, lr}
          [  0x807c]      e2 4b d0 0c    <binky+16>    sub     sp, fp, #12
 pc =>    [  0x8078]      e2 80 00 02    <binky+12>    add     r0, r0, #2
          [  0x8074]      e2 4c b0 04    <binky+8>     sub     fp, ip, #4
          [  0x8070]      e9 2d d8 00    <binky+4>     push    {fp, ip, lr, pc}
          [  0x806c]      e1 a0 c0 0d    <binky+0>     mov     ip, sp
          [  0x8068]      20 20 00 00    <_cstart+88>  .word   0x20200000
          [  0x8064]      00 00 80 e0    <_cstart+84>  .word   0x80e0
          [  0x8060]      00 00 80 dc    <_cstart+80>  .word   0x80dc
          [  0x805c]      e1 2f ff 1e    <_cstart+76>  bx      lr
          [  0x8058]      e8 9d 68 00    <_cstart+72>  ldm     sp, {fp, sp, lr}
          [  0x8054]      e2 4b d0 0c    <_cstart+68>  sub     sp, fp, #12
          [  0x8050]      e5 83 20 20    <_cstart+64>  str     r2, [r3, #32]
          [  0x804c]      e3 a0 29 02    <_cstart+60>  mov     r2, #32768
          [  0x8048]      e5 83 20 10    <_cstart+56>  str     r2, [r3, #16]
          [  0x8044]      e3 a0 26 02    <_cstart+52>  mov     r2, #2097152
          [  0x8040]      e5 9f 30 20    <_cstart+48>  ldr     r3, [pc, #32]
          [  0x803c]      eb 00 00 1d    <_cstart+44>  bl      0x80b8 <main>
          [  0x8038]      3a ff ff fb    <_cstart+40>  bcc     0x802c <_cstart+28>
          [  0x8034]      e1 53 00 02    <_cstart+36>  cmp     r3, r2
          [  0x8030]      e2 83 30 04    <_cstart+32>  add     r3, r3, #4
          [  0x802c]      e5 83 10 00    <_cstart+28>  str     r1, [r3]
          [  0x8028]      ea 00 00 01    <_cstart+24>  b       0x8034 <_cstart+36>
          [  0x8024]      e3 a0 10 00    <_cstart+20>  mov     r1, #0
          [  0x8020]      e5 9f 20 3c    <_cstart+16>  ldr     r2, [pc, #60]
          [  0x801c]      e5 9f 30 3c    <_cstart+12>  ldr     r3, [pc, #60]
          [  0x8018]      e2 4c b0 04    <_cstart+8>   sub     fp, ip, #4
          [  0x8014]      e9 2d d8 00    <_cstart+4>   push    {fp, ip, lr, pc}
          [  0x8010]      e1 a0 c0 0d    <_cstart+0>   mov     ip, sp
          [  0x800c]      ea ff ff fe    <hang+0>      b       0x800c <hang>
          [  0x8008]      eb 00 00 00    <_start+8>    bl      0x8010 <_cstart>
          [  0x8004]      e3 a0 b0 00    <_start+4>    mov     fp, #0
          [  0x8000]      e3 a0 d3 02    <_start+0>    mov     sp, #134217728
          [  0x8018]      e2 4c b0 04    <_cstart+8>   sub     fp, ip, #4
          [  0x8014]      e9 2d d8 00    <_cstart+4>   push    {fp, ip, lr, pc}
          [  0x8010]      e1 a0 c0 0d    <_cstart+0>   mov     ip, sp
          [  0x800c]      ea ff ff fe    <hang+0>      b       0x800c <hang>
          [  0x8008]      eb 00 00 00    <_start+8>    bl      0x8010 <_cstart>
          [  0x8004]      e3 a0 b0 00    <_start+4>    mov     fp, #0
          [  0x8000]      e3 a0 d3 02    <_start+0>    mov     sp, #134217728
          [  0x8004]      e3 a0 b0 00    <_start+4>    mov     fp, #0
          [  0x8000]      e3 a0 d3 02    <_start+0>    mov     sp, #134217728
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