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...382/lab8 — multipass - gui.RkluOb.command
...lab8 — multipass - gui.uLuSpX.command

Register group: general
x0 0x5500806180 365080633728 x1 0x550083d940 365080860992
x2 0x0 0 x3 0x5500800518 365080610072
x4 0x5500845520 365080892704 x5 0xbfffffff 201326591
x6 0x0 0 x7 0x4554415649 297766311497
x8 0x411020 4263968 x9 0x0 0
x10 0x0 0 x11 0x1 1
x12 0x2 2 x13 0x2 2
x14 0x550083d000 365080858624 x15 0x5500846c20 365080898592
x16 0x400208 4194824 x17 0x55009ec010 365082624016
x18 0x2 2 x19 0x0 0
x20 0x0 0 x21 0x400208 4194824
x22 0x0 0 x23 0x0 0
x24 0x0 0 x25 0x0 0
x26 0x0 0 x27 0x0 0
x28 0x0 0 x29 0x0 0
x30 0x5500818c18 365080710168 sp 0x5500800500 0x5500800500
pc 0x400228 0x400228 <_start+32> cpsr 0x60000000 1610612736
fpsr 0x0 0 fpcr 0x0 0

lab8.s
B+ 6 ldr x8, =P
7 ldr x9, [x8, #0] //point x1
8 ldr x10, [x8, #8] //point x2
9
10 ldr x8, =C
11 ldr x11, [x8, #0] //point y1
12 ldr x12, [x8, #8] //point y2
13
14 ldr x8, =p3
15 ldr x13, [x8] // radius
> 16 mul x13, x13, x13 //radius squared
17
18 sub x9, x9, x10 // x1 - x2
19 mul x9, x9, x9 // point 1 squared
20
21 sub x11, x11, x12 // y1 - y2
22 mul x11, x11, x11 //point 2 squared
23

remote Thread 1.8043 In: _start L16 PC: 0x400228
=> 0x000000000040020c <_start+4>: 09 01 40 f9 ldr x9, [x8]
(gdb) x/2db $x9
0x10: Cannot access memory at address 0x10
(gdb) s
=> 0x0000000000400210 <_start+8>: 0a 05 40 f9 ldr x10, [x8, #8]
(gdb) x/2db $x9
0x0: Cannot access memory at address 0x0
(gdb) s
=> 0x0000000000400214 <_start+12>: e8 02 00 58 ldr x8, 0x400270 <Done>
+24>
(gdb) s
=> 0x0000000000400218 <_start+16>: 0b 01 40 f9 ldr x11, [x8]
(gdb) s
=> 0x000000000040021c <_start+20>: 0c 05 40 f9 ldr x12, [x8, #8]
(gdb) s
=> 0x0000000000400220 <_start+24>: c8 02 00 58 ldr x8, 0x400278 <Done+32>
(gdb) s
=> 0x0000000000400224 <_start+28>: 0d 01 40 f9 ldr x13, [x8]
(gdb) s
=> 0x0000000000400228 <_start+32>: ad 7d 0d 9b mul x13, x13, x13
(gdb)

```

First I stepped through the first part of my program to make sure that all the registered that held data had the correct data

```

...382/lab8 — multipass • multipass-gui.RkluOb.command
...lab8 — multipass • multipass-gui.uLuSpX.command
+

Register group: general
x0      0x5500806180      365080633728      x1      0x550083d940      365080860992
x2      0x0              0                  x3      0x5500800518      365080610072
x4      0x5500845520      365080892704      x5      0xbfffffff        201326591
x6      0x0              0                  x7      0x4554415649      297766311497
x8      0x411020          4263968           x9      0x0              0
x10     0x0              0                  x11     0x1              1
x12     0x2              2                  x13     0x4              4
x14     0x1              1                  x15     0x5500846c20      365080898592
x16     0x411028          4263976           x17     0x55009ec010      365082624016
x18     0x2              2                  x19     0x0              0
x20     0x0              0                  x21     0x400208          4194824
x22     0x0              0                  x23     0x0              0
x24     0x0              0                  x25     0x0              0
x26     0x0              0                  x27     0x0              0
x28     0x0              0                  x29     0x0              0
x30     0x5500818c18      365080710168      sp      0x5500800500          0x5500800500
pc      0x400254          0x400254 <YES+4>   cpsr    0x20000000          536870912
fpsr    0x0              0                  fpcr    0x0              0

lab8.s
26      cmp x13, x14
27      b.gt YES
28
29      adr x16, no
30
31      b Done
32
33  YES:
34      adr x16, yes
> 35      b Done
36
37  Done:
38      mov x0, #0
39      mov w8, #93
40      SVC #0
41
42  .data
43      P: .quad 0, 0

remote Thread 1.8043 In: YES
L35 PC: 0x400254
=> 0x000000000040022c <_start+36>: 29 01 0a cb sub x9, x9, x10
(gdb) s
=> 0x0000000000400230 <_start+40>: 29 7d 09 9b mul x9, x9, x9
(gdb) s
=> 0x0000000000400234 <_start+44>: 6b 01 0c cb sub x11, x11, x12
(gdb) s
=> 0x0000000000400238 <_start+48>: 6b 7d 0b 9b mul x11, x11, x11
(gdb) s
=> 0x000000000040023c <_start+52>: 2e 01 0b 8b add x14, x9, x11
(gdb) s
=> 0x0000000000400240 <_start+56>: bf 01 0e eb cmp x13, x14
(gdb) s
=> 0x0000000000400244 <_start+60>: 6c 00 00 54 b.gt 0x400250 <YES>
(gdb) s
YES () at lab8.s:34
=> 0x0000000000400250 <YES+0>: d0 6e 08 10 adr x16, 0x411028
(gdb) s
=> 0x0000000000400254 <YES+4>: 01 00 00 14 b 0x400258 <Done>
(gdb) x/s &yes
0x411028: "P is inside the circle."
(gdb)

```

After running through i relized that i was subtracting the wrong things thus getting a wrong answer

```

...ab8 — multipass • multipass-gui.ftNTWs.command
... — multipass • multipass-gui.fsEsPd.command

Register group: general
x0 0x5500806180 365080633728 x1 0x550083d940 365080860992
x2 0x0 0 x3 0x5500800518 365080610072
x4 0x5500845520 365080892704 x5 0xbffffff 201326591
x6 0x0 0 x7 0x4554415649 297766311497
x8 0x411020 4263968 x9 0x1 1
x10 0x4 4 x11 0x1 1
x12 0x2 2 x13 0x4 4
x14 0x5 5 x15 0x5500846c20 365080898592
x16 0x411040 4264000 x17 0x55009ec010 365082624016
x18 0x2 2 x19 0x0 0
x20 0x0 0 x21 0x400208 4194824
x22 0x0 0 x23 0x0 0
x24 0x0 0 x25 0x0 0
x26 0x0 0 x27 0x0 0
x28 0x0 0 x29 0x0 0
x30 0x5500818c18 365080710168 sp 0x5500800500 0x5500800500
pc 0x40024c 0x40024c <_start+68> cpsr 0x80000000 -2147483648
fpsr 0x0 0 fpcr 0x0 0

lab8.s
19 mul x9, x9, x9 // point 1 squared
20
21 sub x10, x10, x12 // y1 - y2
22 mul x10, x10, x10 //point 2 squared
23
24 add x14, x9, x10 // point 1 + point 2
25
26 cmp x13, x14
27 b.gt YES
28
29 adr x16, no
> 30 b Done
31
32 YES:
33 adr x16, yes
34 b Done
35
36 Done:
37 mov x0, #0

remote Thread 1.9815 In: _start L30 PC: 0x40024c
=> 0x00000000040022c <_start+36>: 29 01 0b cb sub x9, x9, x11
(gdb) s
=> 0x000000000400230 <_start+40>: 29 7d 09 9b mul x9, x9, x9
(gdb) s
=> 0x000000000400234 <_start+44>: 4a 01 0c cb sub x10, x10, x12
(gdb) s
=> 0x000000000400238 <_start+48>: 4a 7d 0a 9b mul x10, x10, x10
(gdb) s
=> 0x00000000040023c <_start+52>: 2e 01 0a 8b add x14, x9, x10
(gdb) s
=> 0x000000000400240 <_start+56>: bf 01 0e eb cmp x13, x14
(gdb) s
=> 0x000000000400244 <_start+60>: 6c 00 00 54 b.gt 0x400250 <YES>
(gdb) s
=> 0x000000000400248 <_start+64>: d0 6f 08 10 adr x16, 0x411040
(gdb) s
=> 0x00000000040024c <_start+68>: 03 00 00 14 b 0x400258 <Done>
(gdb) x/s $x16
0x411040: "P is outside the circle."
(gdb)

```

This demonstrates that i fixed the problem and when the program exicates it gives a correct answer and displays that the pionts given are outside the circle

```

...ab8 — multipass - multipass-gui.ftNTWs.command  ...— multipass - multipass-gui.guksyB.command +
Register group: general
x0      0x5500806180      365080633728      x1      0x550083d940      365080860992
x2      0x0              0                  x3      0x5500800518      365080610072
x4      0x5500845520      365080892704      x5      0xbfffffff        201326591
x6      0x0              0                  x7      0x4554415649      297766311497
x8      0x411020          4263968          x9      0x1              1
x10     0x1              1                  x11     0x1              1
x12     0x1              1                  x13     0x4              4
x14     0x2              2                  x15     0x5500846c20      365080898592
x16     0x411028          4263976          x17     0x55009ec010      365082624016
x18     0x2              2                  x19     0x0              0
x20     0x0              0                  x21     0x400208          4194824
x22     0x0              0                  x23     0x0              0
x24     0x0              0                  x25     0x0              0
x26     0x0              0                  x27     0x0              0
x28     0x0              0                  x29     0x0              0
x30     0x5500818c18      365080710168      sp      0x5500800500      0x5500800500
pc      0x400254          0x400254 <YES+4>   cpsr    0x20000000          536870912
fpsr    0x0              0                  fpcr    0x0              0

lab8.s
25
26      cmp x13, x14
27      b.gt YES
28
29      adr x16, no
30      b Done
31
32  YES:
33      adr x16, yes
> 34      b Done
35
36  Done:
37      mov x0, #0
38      mov w8, #93
39      SVC #0
40
41  .data
42      P: .quad 0, 0
43      C: .quad 1, 1

remote Thread 1.9705 In: YES L34 PC: 0x400254
(gdb) s
=> 0x0000000000400234 <start+44>: 4a 01 0c cb sub x10, x10, x12
(gdb) s
=> 0x0000000000400238 <start+48>: 4a 7d 0a 9b mul x10, x10, x10
(gdb) s
=> 0x000000000040023c <start+52>: 2e 01 0a 8b add x14, x9, x10
(gdb) s
=> 0x0000000000400240 <start+56>: bf 01 0e eb cmp x13, x14
(gdb) s
=> 0x0000000000400244 <start+60>: 6c 00 00 54 b.gt 0x400250 <YES>
(gdb) s
YES () at lab8.s:33
=> 0x0000000000400250 <YES+0>: d0 6e 08 10 adr x16, 0x411028
(gdb) s
=> 0x0000000000400254 <YES+4>: 01 00 00 14 b 0x400258 <Done>
(gdb) print $x16
$1 = 4263976
(gdb) x/s $x16
0x411028: "P is inside the circle."
(gdb)

```

I then tested it again to make sure it worked with different points and as demistrctsted here it does. These points are inside the circle