| TAC | symbols | MOD | comments | observation |
|---|---|---|---|---|
| 0: &() t0 <- a | $t0 <ptr(4) to <array 10 of <int>>> | a[0] := 1 | # pointer to array | |
| 1: mul t1 <- 0, 4 | $t1 <int> | | # 0 * 4 | |
| 2: &() t2 <- a | $t2 <ptr(4) to <array 10 of <int>>> | | # pointer to array | # $t2 is same as $t0 |
| 3: param 0 <- t2 | | | # parameter: pointer to array | |
| 4: call t3 <- DOFS | $t3 <int> | | # offset to the beginning of the data of array a | |
| 5: add t4 <- t1, t3 | $t4 <int> | | # (0 * 4) + offset | |
| 6: add t5 <- t0, t4 | $t5 <int> | | # array address + ((0 * 4) + offset) | |
| 7: assign @a <- 1 | @a <array 10 of <int>> | | # a[0] = 1 | |
| 8: assign i <- 1 | @i <int> | i := 1 | # i = 1 | |
| | | | | |
| 9: 3_while_cond: | | | | |
| 10: if i < 10 goto 4_while_body | | while (i < 10) do | # if (i < 10) continue | |
| 11: goto 2 | | | # else break | |
| 12: 4_while_body: | | | | |
| 13: sub t6 <- 10, i | $t6 <int> | a[i] := 10-i; | # 10 – i | |
| 14: &() t7 <- a | $t7 <ptr(4) to <array 10 of <int>>> | | # pointer to array | |
| 15: mul t8 <- i, 4 | $t8 <int> | | # i * 4 | |
| 16: &() t9 <- a | $t9 <ptr(4) to <array 10 of <int>>> | | # pointer to array | # $t9 is same as $t7 |
| 17: param 0 <- t9 | | | # parameter: pointer to array | |
| 18: call t10 <- DOFS | $t10 <int> | | # offset to the beginning of the data of array a | |
| 19: add t11 <- t8, t10 | $t11 <int> | | # (i * 4) + offset | |
| 20: add t12 <- t7, t11 | $t12 <int> | | # array address + ((i * 4) + offset) | |
| 21: assign @a <- t6 | @a <array 10 of <int>> | | # a[i] = (10 – i) | |
| 22: add t13 <- i, 1 | $t13 <int> | i := i+1 | # increment i | |
| 23: assign i <- t13 | @i <int> | | | |
| 24: goto 3_while_cond | | | # continue | |
| 25: 2: | | end; | | |
| | | | | |
| 26: assign i <- 0 | | i := 0; | # reset i | |
| | | | | |
| 27: 10_while_cond: | | | | |
| 28: if i < 10 goto 11_while_body | | while (i < 10) do | # if (i < 10) continue | |
| 29: goto 9 | | | # else break | |
| 30: 11_while_body: | | | | |
| 31: &() t14 <- a | $t14 <ptr(4) to <array 10 of <int>>> | WriteInt(a[i]); | # pointer to array | |
| 32: mul t15 <- i, 4 | $t15 <int> | | # i * 4 | |
| 33: &() t16 <- a | $t16 <ptr(4) to <array 10 of <int>>> | | # pointer to array | # $t16 is same as $t14 |
| 34: param 0 <- t16 | | | # parameter: pointer to array | |
| 35: call t17 <- DOFS | $t17 <int> | | # offset to the beginning of the data of array a | |
| 36: add t18 <- t15, t17 | $t18 <int> | | # (i * 4) + offset | |
| 37: add t19 <- t14, t18 | $t19 <int> | | # array address + ((i * 4) + offset) | |
| 38: param 0 <- @a | | | # parameter: a[i] | # dereference |
| 39: call WriteInt | | | # call WriteInt | |
| 40: add t20 <- i, 1 | $t20 <int> | i := i+1 | # increment i | |
| 41: assign i <- t20 | @i <int> | | | |
| 42: goto 10_while_cond | | | # continue | |
| 43: 9: | | end; | | |