```
1 #include <stdio.h>
2 #include <string.h>
4 void concat(char* a, char* b, char* result) {
 5 printf("a: p, b: pnresult: pn", a, b, result);
 6 int alen = strlen(a), blen = strlen(b);
    for(int i = 0; i < alen; i += 1) {
    result[i] = a[i];
9
   }
10 for(int i = 0; i < blen; i += 1) {
     result[alen + i] = b[i];
11
12 }
   result[alen + blen] = 0;
14 }
15
16 int main(int argc, char** argv) {
    printf("Argv: %p\n", argv);
17
    printf("Arg index 0: %p: %s\n", argv[0], argv[0]);
    printf("Arg index 1: %p: %s\n", argv[1], argv[1]);
    printf("Arg index 2: %p: %s\n", argv[2], argv[2]);
21
    char result[strlen(argv[1]) + strlen(argv[2]) + 1];
23
   concat(argv[1], argv[2], result);
24
25
   printf("%s\n", result);
26 }
  $ gcc args.c -o args
  $ ./args "Hello " "CSE29"
  Argv: 0x7ffcda761c38
  Arg index 0: 0x7ffcda7626e8: ./args
  Arg index 1: 0x7ffcda7626ef: Hello
  Arg index 2: 0x7ffcda7626f6: CSE29
  a: 0x7ffe600146ef, b: 0x7ffe600146f6
  result: 0x7ffe600130d0
  Hello CSE29
```

Address		Data						
0.4 00	0/8	1/9	2/A	3/B	4/C	5/D	6/E	7/F
0x00								
0x08								
0x10								
0x18								
0x20								
0x28								
0x30								
0x38								
0x40								
0x48								
0x50								
0x58								
0x60								
0x68								
0x70								
0x78								
0x80								
0x88								
0x90								
0x98								
0xA0								
0xA8								
0xB0								
0xB8								
0xC0								
0xC8								
0xD0								
0xD8								
0xE0								
0xE8								
0xF0								
0xF8								
UAFO								

Variable/Role

```
1 #include <string.h>
2 #include <stdio.h>
                                                                           Variable/Role
                                                                                             Address
                                                                                                                             Data
4 // Takes two double arrays a and b, and changes result to have the
                                                                                                            0/8 1/9 2/A 3/B 4/C 5/D 6/E 7/F
 5 // appended array of a and b stored in it
                                                                                             0x...88
                                                                                             0x...90
 7 // ASSUMES that result has enough space
 8 void append(double a[], double b[], double result[]) {
                                                                                             0x...98
10
                                                                                             0x...A0
11
                                                                                             0x...A8
12
13
                                                                                             0x...B0
14
                                                                                             0x...B8
15
16
                                                                                             0x...C0
17
18
                                                                                             0x...C8
19
                                                                                             0x...D0
20
21
                                                                                             0x...D8
22
                                                                                             0x...E0
23
^{24}
                                                                                             0x...E8
                                                                                             0x...F0
26 }
27
                                                                                             0x...F8
28 void print_list(double lst[], int howmany) {
    for(int i = 0; i < howmany; i += 1) {
                                                                                             0x...00
30
      printf("%f ", lst[i]);
                                                                                             0x...08
    }
31
32
    printf("\n");
                                                                                             0x...10
33 }
                                                                                             0x...18
34
35
                                                                                             0x...20
36 int main() {
37
     double n1[] = { 4.0, 5.0, 6.0 };
                                                                                             0x...28
     double n2[] = \{ 0.7, 0.3, 0.1, 0.8 \};
                                                                                             0x...30
    double result[7];
39
40
                                                                                             0x...38
41
    append(n1, n2, result);
                                                                                             0x...40
42
    print_list(n1, 3);
                                                                                             0x...48
    print_list(n2, 4);
                                                                                             0x...50
45 }
                                                                                             0x...58
                                                                                             0x...60
                                                                                             0x...68
                                                                                             0x...70
                                                                                             0x...78
                                                                                             0x...80
```