

1. Intro. Data for DANCE: The problem of Langford pairs. Namely, place $\{1, 1, 2, 2, \dots, n, n\}$ in a row so that exactly k slots appears between the two k s.

The command line should contain n .

I save a factor of two by putting n in the left half (or, if n straddles the center, by putting $n - 1$ in the left half).

```
#include <stdio.h>
#include <stdlib.h>
int n;
main(int argc, char *argv[])
{
    register int i, j, k, nn;
    if (argc ≠ 2 ∨ sscanf(argv[1], "%d", &n) ≠ 1) {
        fprintf(stderr, "Usage: □s□n\n", argv[0]);
        exit(-1);
    }
    nn = n + n;
    ⟨Print the header line 2⟩;
    for (i = 1; i ≤ n; i++)
        for (j = 1; ; j++) {
            k = i + j + 1;
            if (k > nn) break;
            if (i ≡ n - ((n & 1) ≡ 0) ∧ j > n/2) break;
            printf("d%d□s%d□s%d\n", i, j, k);
        }
}
```

2. ⟨Print the header line 2⟩ ≡

```
for (j = 1; j ≤ n; j++) printf("d%d□", j);
for (j = 1; j ≤ nn; j++) printf("s%d□", j);
printf("\n");
```

This code is used in section 1.

3. Index.*argc*: 1.*argv*: 1.*exit*: 1.*fprintf*: 1.*i*: 1.*j*: 1.*k*: 1.*main*: 1.*n*: 1.*nn*: 1, 2.*printf*: 1, 2.*sscanf*: 1.*stderr*: 1.

⟨Print the header line 2⟩ Used in section 1.

LANGFORD

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