

```
// 「Cで学ぶデータ構造とアルゴリズム」(西原清一)オーム社, 2008
// 図7・6(p.153)+図7・5(p.152) ヒープ整列法とふるい操作
```

```
#include<stdio.h>
```

```
#define      N      7
```

```
int a[N+1] = {00, 22, 88, 44, 55, 99, 44, 33};
```

```
void sift(int r, int s)
```

```
{  int i, j, w;
    i = r; j = 2*r; w = a[r];
    while (j <= s) {
        if (j < s && a[j] < a[j+1]) j++;
        if (w >= a[j]) break;
        a[i] = a[j]; i = j; j = 2*i;
    }
    a[i] = w;
}
```

```
void heapsort()
```

```
{  int r, m, w;
    r = N/2;
    while (r > 0) sift(r--, N);
    m = N;
    while (m > 1) {w = a[1]; a[1] = a[m]; a[m] = w; sift(1, --m);}
}
```

```
main()
```

```
{  int i;
    heapsort();
    for (i=1; i<N+1; i++) printf("a[%d]=%d  ", i, a[i]);
    printf("¥n¥n");
}
```