

# Programming 3-2: 贪心

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## 1 Problem 3-2-A:Bob and DitF

### 1.1 代码样例

```
1 #include<bits/stdc++.h>
2 #define maxn 10005
3 using namespace std;
4
5 struct Interval {
6     int l, r;
7 } interval[maxn];
8
9 bool tmp(const Interval a, const Interval b) {
10     return a.r<b.r || (a.r==b.r && a.l > b.l);
11 }
12 void work() {
13     int n, e, c;
14     scanf("%d %d %d", &n, &e, &c);
15     for (int i = 0; i < n; ++i) {
16         scanf("%d %d", &interval[i].l, &interval[i].r);
17     }
18     sort(interval, interval+n, tmp);
19     int p = -1;
20     bool flag = 1;
21     for(int i = 0; i < n; ++i) {
22         while(interval[i].l<=p && interval[i].r > p && i < n) i++;
23         if(i==n) break;
24         p = interval[i].r-1;
25         e-=c;
26         if(e<0) {
27             flag = 0;
28             break;
29         }
30     }
31     if(flag) printf("Good Ending\n");
32     else printf("Bad Ending\n");
33 }
34
35 int main() {
36     int T;
37     scanf("%d",&T);
38     while(T--) work();
```

```
39  return 0;
40  }
41
42  /*****
43   Problem: 1538
44   User: 171860004
45   Language: C++
46   Result: 正确
47   Time:96 ms
48   Memory:1632 kb
49  *****/
```

Listing 1: A by 171860004

## 2 Problem 3-2-B: Bob and Study

### 2.1 代码样例

```

1  #include<bits/stdc++.h>
2  #define maxn 20005
3  using namespace std;
4  priority_queue <int> q;
5  int a[maxn], b[maxn];
6  void work() {
7      while(!q.empty()) q.pop();
8      long long h = 0;
9      int n, ans = 0;
10     bool flag = 0;
11     scanf("%d %lld", &n, &h);
12     for(int i = 0; i < n; ++i)
13         scanf("%d", &a[i]);
14     for(int i = 0; i < n; ++i)
15         scanf("%d", &b[i]);
16     for(int i = 0; i < n; ++i) {
17         h+=a[i];
18         while((!q.empty() ) && h<=0) {
19             h+=q.top();
20             q.pop();
21             ans--;
22         }
23         if(h<=0) {
24             printf("Bob will be unhappy!\n");
25             return;
26         }
27         if(h>b[i]) {
28             h-=b[i];
29             ans++;
30             q.push(b[i]);
31         } else {
32             if((!q.empty()) && q.top()>b[i]) {
33                 h+=q.top()-b[i];
34                 q.pop();
35                 q.push(b[i]);
36             }
37         }
38     }
39     printf("%d %lld\n", ans, h);
40 }
41
42 int main() {
43     int T;
44     scanf("%d",&T);
45     while(T--) work();
46     return 0;
47 }
48
49 /*****
50 Problem: 1539
51 User: 171860004
52 Language: C++

```

```
53 Result: 正确
54 Time:132 ms
55 Memory:1712 kb
56 *****/
```

Listing 2: B by 171860004

### 3 Problem 3-2-C: Bob and Chips

#### 3.1 代码样例

```
1 #include <queue>
2 #include <stdio.h>
3 using namespace std;
4 priority_queue <long long,vector<long long>,greater<long long>> q;
5 int main(){
6     int n;
7     scanf("%d",&n);
8     long long t;
9     for (int i = 0; i < n; ++i) {
10         scanf("%lld",&t);
11         q.push(t);
12     }
13     long long sum=0;
14     int i,k;
15     while (q.size()>1){
16         i=t=0;
17         if (q.size()&1) k=3; else k=2;
18         while (i<k && q.size()>0){
19             i++;
20             t+=q.top();
21             q.pop();
22         }
23         sum+=t;
24         q.push(t);
25     }
26     printf("%lld\n",sum);
27 }
28
29 /*****
30 Problem: 1540
31 User: 171870691
32 Language: C++
33 Result: 正确
34 Time:228 ms
35 Memory:2612 kb
36 *****/
```

Listing 3: C by 171870691

## 4 Problem 3-2-D: Bob and Alice

### 4.1 代码样例

```

1  #include<bits/stdc++.h>
2  using namespace std;
3  struct data
4  {
5      int x,y;
6  };
7  int n,cnt,sum;
8  data a[100010];
9  bool cmp(data a,data b)
10 {
11     return ( min(a.x,b.y)<min(a.y,b.x)||
12             (min(a.x,b.y)==min(a.y,b.x) && a.x<b.x));
13 }
14 int main()
15 {
16     int T;
17     scanf("%d",&T);
18     while(T>0)
19     {
20         scanf("%d",&n);
21         for(int i=0;i<n;i++)
22             scanf("%d%d",&a[i].x,&a[i].y);
23         sort(a,a+n,cmp);
24         cnt=0;sum=0;
25         for(int i=0;i<n;i++)
26         {
27             if(cnt!=0)
28             {
29                 if(cnt>=a[i].x)
30                 {
31                     cnt-=a[i].x;
32                     sum+=a[i].x;
33                 }
34                 else
35                 {
36                     sum+=cnt;
37                     cnt=0;
38                 }
39             }
40             cnt+=a[i].y;
41         }
42         printf("%d\n",sum);
43         T--;
44     }
45     return 0;
46 }
47 /*****
48 Problem: 1541
49 User: 171860017
50 Language: C++
51 Result: 正确
52 Time:536 ms

```

```
53 Memory:2332 kb
54 *****/
```

Listing 4: D by 171860017