expressway

人员

刘祺、夏志赫、武敬哲、秦显森、牟茗、高健桓、李青默、辛帅辰、齐振玮、方俊喆、郑泽楷、程梓豪、赵熙羽、郭骐嘉、牛同泽、徐浩然、董浩桢、王嘉会 到课，夏硕承、谢亚锴 线上

作业检查

上周作业链接: https://www.luogu.com.cn/contest/220053

2024-1215周日10:30

报名　编辑比赛　　　　　　　　　　　　　　　　　题目数 **5**　报名人数 **21**

比赛说明　题目列表　**排行榜**

名次	参赛者	总分	A	B	C	D	E
#1	赵熙羽	500 (7.15d)	100 (52.03min)	100 (1.11h)	100 (1.41h)	100 (1.96h)	100 (6.93d)
#2	方俊喆	400 (7.41h)	100 (1.56h)	100 (2.16h)	100 (2.02h)	100 (1.67h)	
#3	刘祺	400 (1.21d)	100 (1.13h)	100 (9.14h)	100 (9.29h)	100 (9.54h)	
#4	牟茗	400 (6.67d)	100 (55.88min)	100 (2.01h)	100 (1.92h)	100 (6.46d)	
#5	谢亚锴	400 (16.23d)	100 (56.87min)	100 (5.37d)	100 (5.38d)	100 (5.44d)	
#6	程梓豪	380 (4.75h)	80 (1.19h)	100 (30.00min)	100 (1.43h)	100 (1.63h)	
#7	秦显森	320 (6.18h)	100 (49.83min)	20 (1.51h)	100 (1.84h)	100 (2.00h)	
#8	辛帅辰	310 (24.86d)	100 (6.50d)	100 (6.50d)	100 (6.50d)	10 (6.50d)	
#9	郑泽楷	300 (4.34h)	100 (53.73min)	100 (1.58h)	100 (1.87h)		
#10	高健桓	300 (4.59h)	100 (59.48min)	100 (1.71h)	100 (1.90h)		
#11	李青默	300 (4.60h)	100 (1.23h)	100 (1.55h)	100 (1.82h)		
#12	夏硕承	300 (4.64h)	100 (1.03h)	100 (1.69h)	100 (1.92h)		
#13	郭骐嘉	300 (1.61d)	100 (57.03min)	100 (1.72h)	100 (1.50d)		
#14	徐浩然	300 (21.02d)	100 (7.02d)	100 (7.02d)	100 (6.99d)		
#15	牛同泽	240 (4.84h)	40 (1.25h)	100 (1.67h)	100 (1.92h)		
#16	武敬哲	210 (6.11d)	10 (48.72min)		100 (1.50h)	100 (6.01d)	
#17	夏志赫	200 (6.39d)	100 (2.36h)	100 (6.29d)			

您正在共享屏幕　结束共享

作业

https://www.luogu.com.cn/contest/221300

课堂表现

今天的 U514680 expressway 和 P1114 "非常男女"计划 2 道题目都比较重要, 同学们课下要再好好研究一下这 2 道题目。

课堂内容

P6625 [省选联考 2020 B 卷] 卡牌游戏

```cpp
#include <bits/stdc++.h>

using namespace std;

typedef long long LL;
const int maxn = 1e5 + 5;
int w[maxn];
LL p[maxn];

int main()
{
  int n; cin >> n;
  for (int i = 1; i <= n; ++i) {
    cin >> w[i];
    p[i] = p[i-1] + w[i];
  }

  LL res = 0;
  for (int i = 2; i <= n; ++i) res += max(0LL, p[i]);
  cout << res << endl;
  return 0;
}
```

U514680 expressway

```
从 i 号点 -> j 号点

int l = min(i, j), r = max(i, j);

l -> r: l, l+1, ..., r-1

l ~ r-1: 全部 +1  ->  p[l]++, p[r]--;

所有道路处理完了，做一遍前缀和

p[1], p[2], ..., p[n-1]

第 i (1~n-1) 条道路的花费: p[i]*a[i]
                         c[i] + p[i]*b[i]
```

```cpp
#include <bits/stdc++.h>

using namespace std;

typedef long long LL;
const int maxn = 1e5 + 5;
LL a[maxn], b[maxn], c[maxn];
LL p[maxn], d[maxn];

int main()
{
    int n, m; cin >> n >> m;
    for (int i = 1; i <= m; ++i) cin >> d[i];
    for (int i = 1; i <= n-1; ++i) cin >> a[i] >> b[i] >> c[i];

    for (int i = 2; i <= m; i++) {
        // d[i-1] -> d[i]
        int l = min(d[i-1], d[i]), r = max(d[i-1], d[i]);
        p[l]++, p[r]--;
    }
    for (int i = 1; i <= n-1; ++i) p[i] = p[i-1] + p[i];

    LL res = 0;
    for (int i = 1; i <= n-1; ++i) {
        res += min(a[i]*p[i], c[i]+b[i]*p[i]);
    }
    cout << res << endl;
    return 0;
}
```
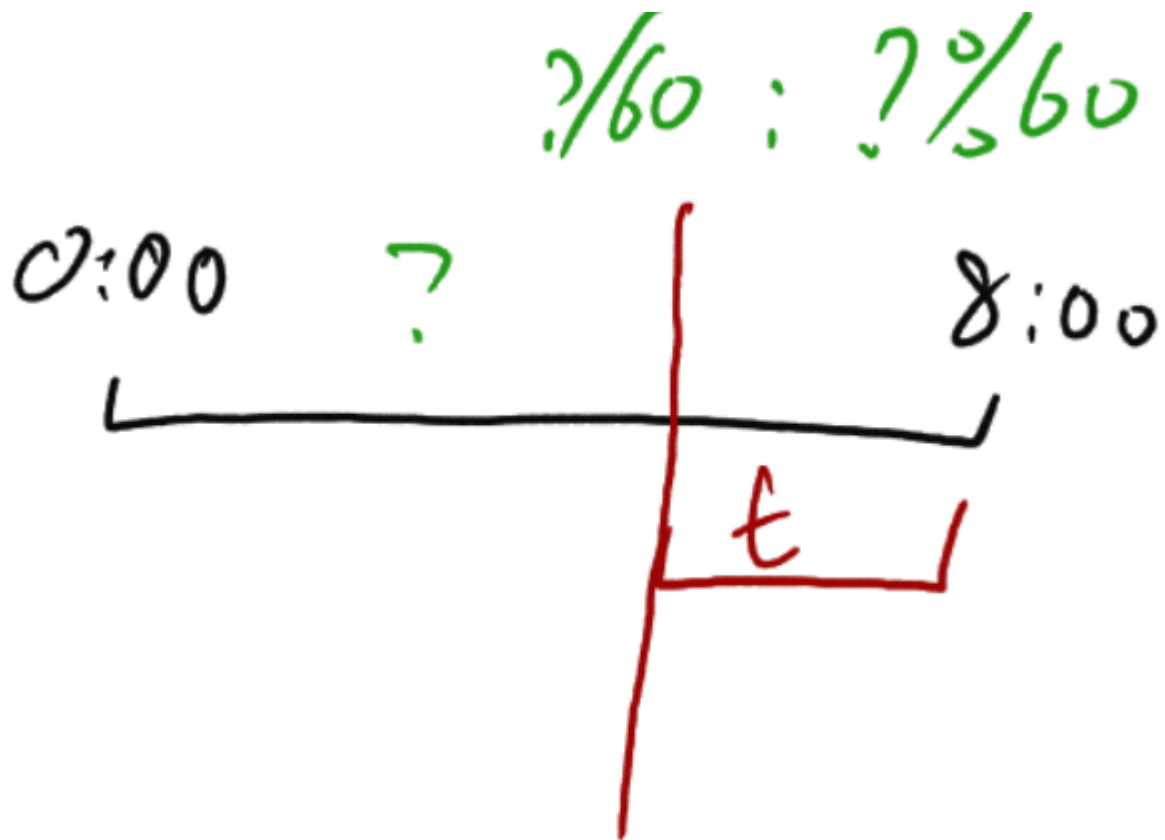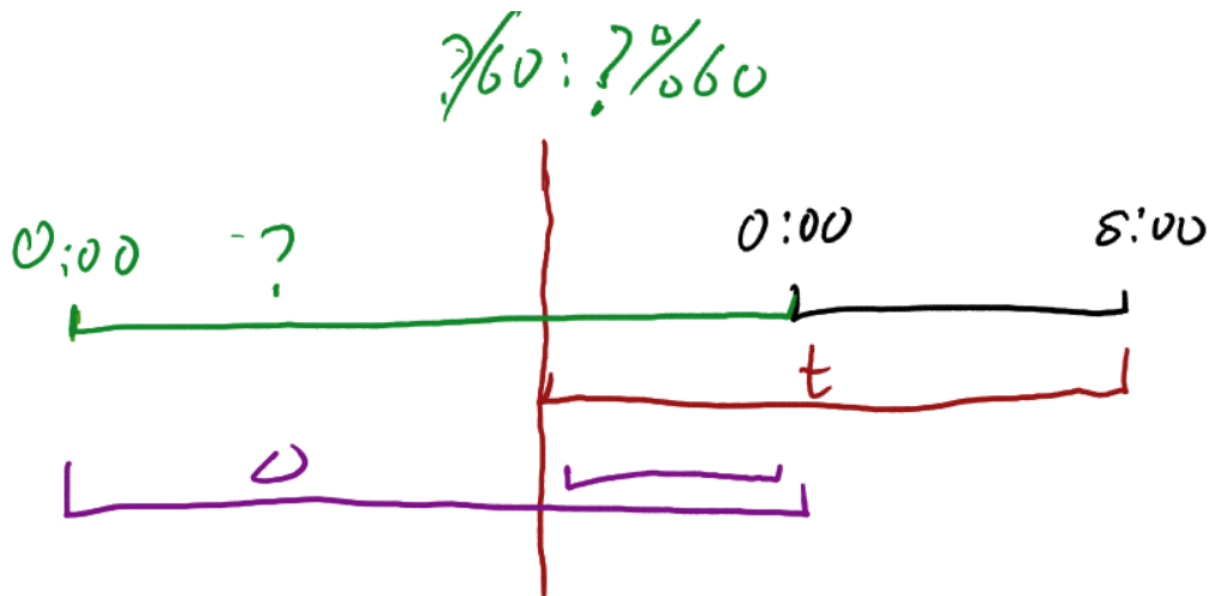
P5707 【深基2.例12】上学迟到

1. 情况一: t <= 480

2. 情况二: t > 480

P1114 "非常男女"计划

前缀和 + map桶维护

```cpp
#include <bits/stdc++.h>

using namespace std;

const int maxn = 1e5 + 5;
```

```cpp
int w[maxn], p[maxn];

int main()
{
  int n; cin >> n;
  for (int i = 1; i <= n; ++i) {
    cin >> w[i];
    if (!w[i]) w[i] = -1;
    p[i] = p[i-1] + w[i];
  }

  map<int, int> mp; mp[0] = 0;
  int res = 0;
  for (int i = 1; i <= n; ++i) {
    int t = p[i];
    if (mp.count(t)) res = max(res, i - mp[t]);
    else mp[t] = i;
  }

  cout << res << endl;
  return 0;
}
```