計算機韌體實驗（P16）
反片語/Ananagrams

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解題要訣

- 將每個單字「標準化」
  - 將全部字母轉換為小寫字母後再進行排序
- 使用map進行統計

標準化

- 將全部字母轉換為小寫字母後再進行排序

```
72 //把每個單字標準化(轉換為小寫字母再按進行排序)
73 string normalize(string &s)
74 {
75     string ans = s; //'=' is overloaded
76     int i;
77
78     for(i=0; i<ans.length(); i++){
79         ans[i] = tolower(ans[i]);
80     }
81
82     sort(ans.begin(), ans.end());Member Function
83     return ans;
84 }
85
```

映射: map (1/2)

- map<$type_1$, $type_2$>就是從鍵(*key*)到值(*value*)的映射
  - Overload operator []
  - map is define in <map>

```
25      map<string, int> cnt;
```

映射: map (2/2)

```
28      while(cin >> s){
29          if(s[0] == '#'){
30              break;
31          }
32          words.push_back(s);
33          n = normalize(s); //'=' is overloaded
34
35          if(!cnt.count(n)){ Member Function
36              cnt[n] = 0;
37          }
38          cnt[n]++;
39      }
```

統計每個標準化單字出現的次數

輸出 Ananagrams

```
24      vector<string> words, ans;
```

```
41      for(i=0; i<words.size(); i++){
42          if(cnt[normalize(words[i])] == 1){
43              ans.push_back(words[i]);
44          }
45      }
46      sort(ans.begin(), ans.end());
47
48      for(i=0; i<ans.size(); i++){
49          cout << ans[i] << endl;
50      }
```

Member Functions

- char *string::begin(void);
  - Return a pointer to the first character
- char *string::end(void);
  - Return a pointer to the *past-the-end* character
- size_type map::count($type_1$ &*key*);
  - Return the number (0 or 1) of the matches for *key*