

```

1 // [迴文詞/Palindromes](1/2)
2 #define IN "P04IN.txt"
3 #define OUT "P04OUT.txt"
4 //*****
5 #include <iostream>
6 #include <ctime>
7 using namespace std;
8 void redir(void);
9 //*****
10 /* Work Space*/
11 char *rev = "A 3 HIL JM O 2TUVWXY51SE Z 8 "; //注意空白字元的數目
12 char *meg[] = {"not a palindrome",
13               "a regular palindrome",
14               "a mirrored string",
15               "a mirrored palindrome"};
16
17 char mirrored(char ch); //傳回字元的鏡像
18 //*****
19 int main(void)
20 {
21     redir(); //redirection
22 //*****
23 /* Work Space*/
24     char s[32]; //輸入規定至多20個字元
25     int length;
26     int p, m;
27     int i;
28
29     while(scanf("%s", s) == 1){
30         length = strlen(s);
31         p = m = 1;
32
33         for(i=0; i < (double)length/2; i++){ //注意轉型
34             if(p && s[i] != s[(length-1)-i]){ //short-circuit
35                 p = 0;
36             }
37             if(m && mirrored(s[i]) != s[(length-1)-i]){
38                 m = 0;
39             }
40         }
41
42         printf("%s -- is %s.\n\n", s, meg[m*2+p]);
43     }
44 //*****
45     freopen("CON", "r", stdin); //取消重新導向
46     freopen("CON", "w", stdout);
47
48     printf("Time used = %.2f\n", (double)clock()/CLK_TCK); //傳回程式目前為止執行的時間
49
50     system("pause");
51     return 0; //the end...
52 }
53
54 void redir(void)
55 {
56     freopen(IN, "r", stdin);
57     freopen(OUT, "w", stdout);
58 }
59 //*****
60
61
62
63

```

```
64 //[迴文詞/Palindromes](2/2)
65 /* Work Space*/
66 char mirrored(char ch) //傳回字元的鏡像
67 {
68     if(isalpha(ch)){
69         return rev[ch-'A'];
70     }else{
71         return rev[ch-'0'+25];
72     }
73 }
74
75 //Input(IN) Sample
76 /*
77 NOTAPALINDROME
78 ISAPALINILAPASI
79 2A3MEAS
80 ATOYOTA
81 */
82
83 //Output(OUT)
84 /*
85 NOTAPALINDROME -- is not a palindrome.
86
87 ISAPALINILAPASI -- is a regular palindrome.
88
89 2A3MEAS -- is a mirrored string.
90
91 ATOYOTA -- is a mirrored palindrome.
92 */
```