

CH03 複習

CH03 Review

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變數

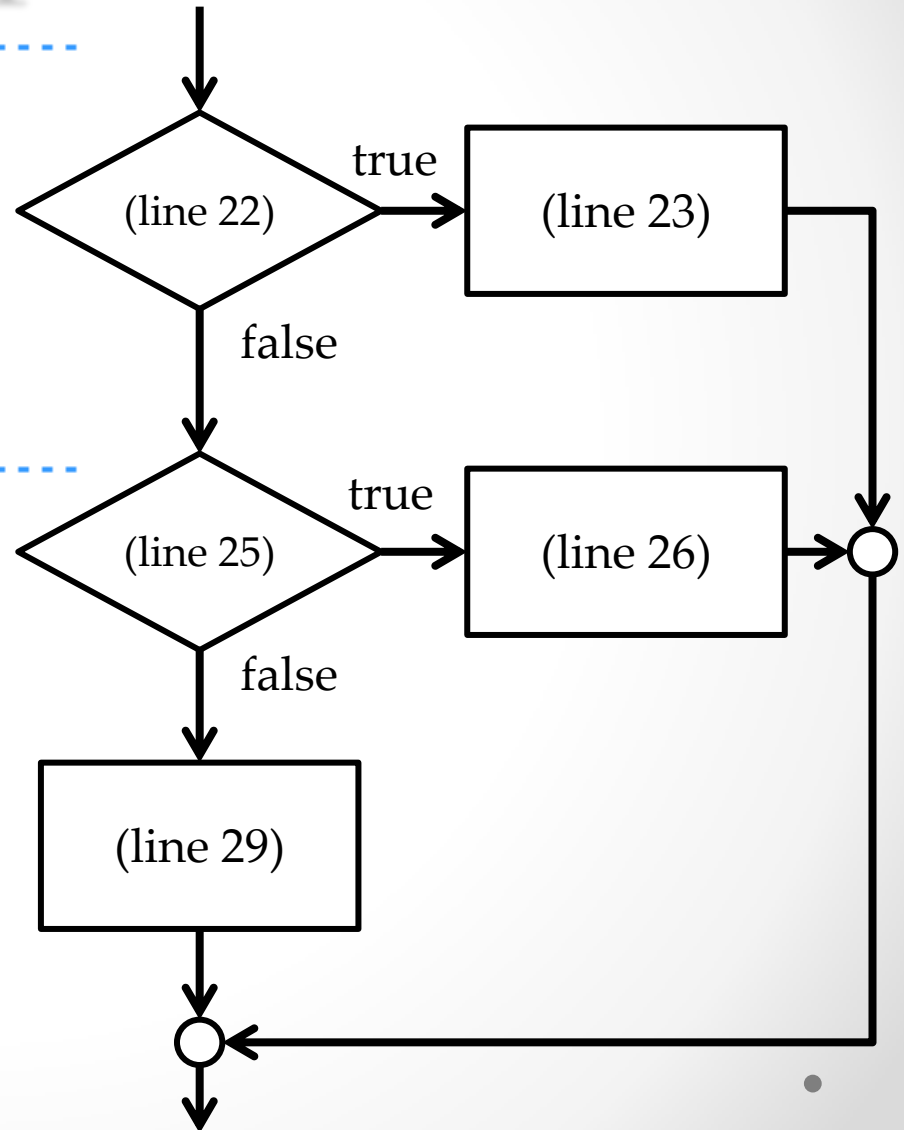
```
2 //-----  
3 int number;  
4 char c;  
5 double money;  
6 float posX;  
7 //-----
```

printf 、 scanf

```
7 //-----  
8 printf("%d\n", number);  
9 printf("%c\n", c);  
10 printf("%lf\n", money);  
11 printf("%f\n", posX);  
12  
13 printf("%d %f\n", number, posX);  
14 //-----  
15 scanf("%d", &number);  
16 scanf("%c", &c);  
17 scanf("%lf", &money);  
18 scanf("%f", &posX);  
19  
20 scanf("%d %f", &number, &posX);  
21 //-----
```

if

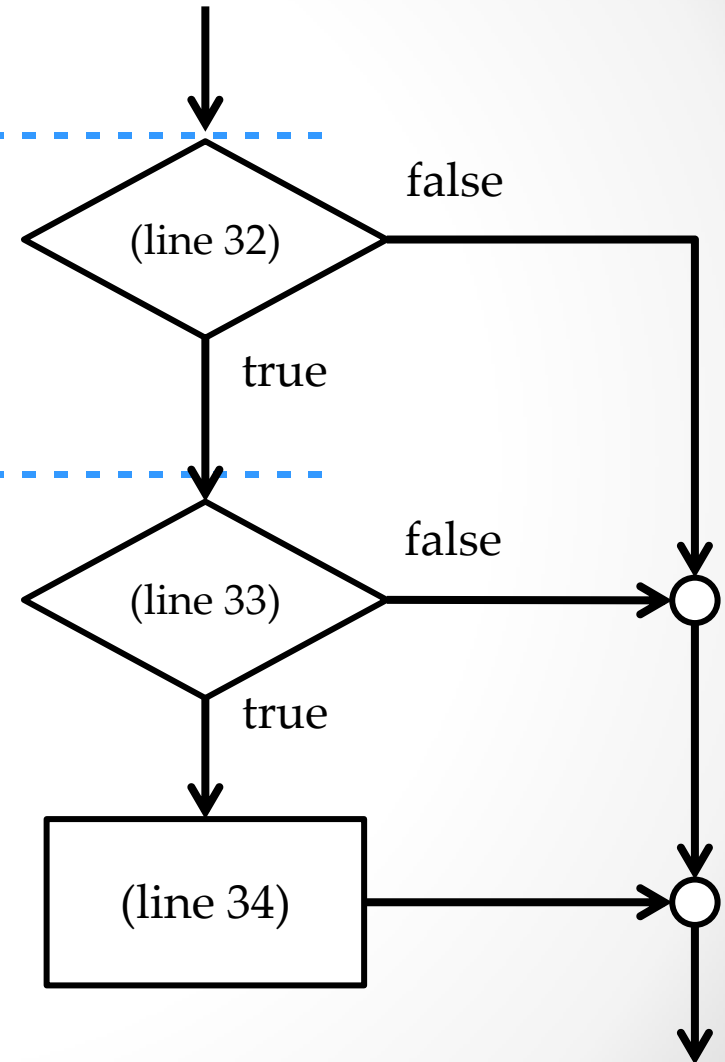
```
21 //-----  
22 if (0 <= number && number <= 20) {  
23     //do something.....  
24 }  
25 else if (c == 'y' || c == 'Y') {  
26     //do something.....  
27 }  
28 else {  
29     //do something.....  
30 }  
31 //-----
```



流程圖是幫助學習的，不要太拘束

if

```
31 //-----  
32 if (0 <= number) {  
33     if (number <= 20) {  
34         .....  
35         //do something.....  
36     }  
37 }  
38 //-----
```



&& || 哪個先

37

// - - - - -

38

// Q: $A \parallel B$ && $C = ?$

39

// (a). $(A \parallel B)$ && C

40

// (b). $A \parallel (B \text{ \&\& } C)$

41

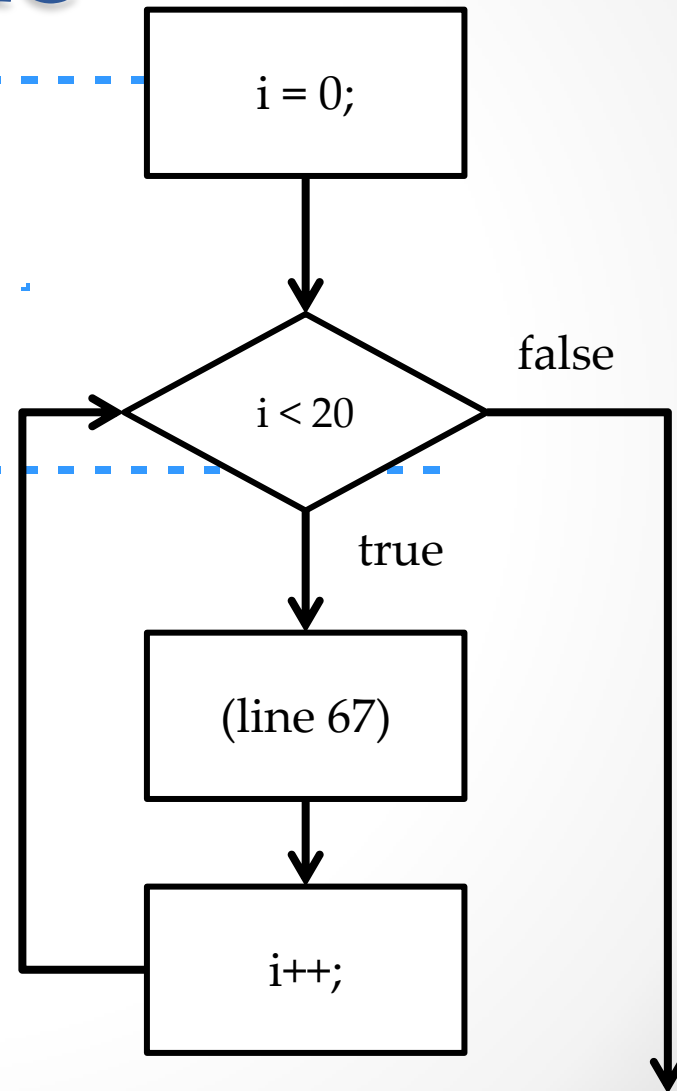
// - - - - -

switch

```
41 //-----  
42 char c;  
43 switch (c) {  
44     case 'A':  
45         //do something.....  
46         break;  
47     case 'B':  
48         //do something.....  
49         break;  
50     default:  
51         //do something.....  
52         break;  
53 }  
54 //-----
```

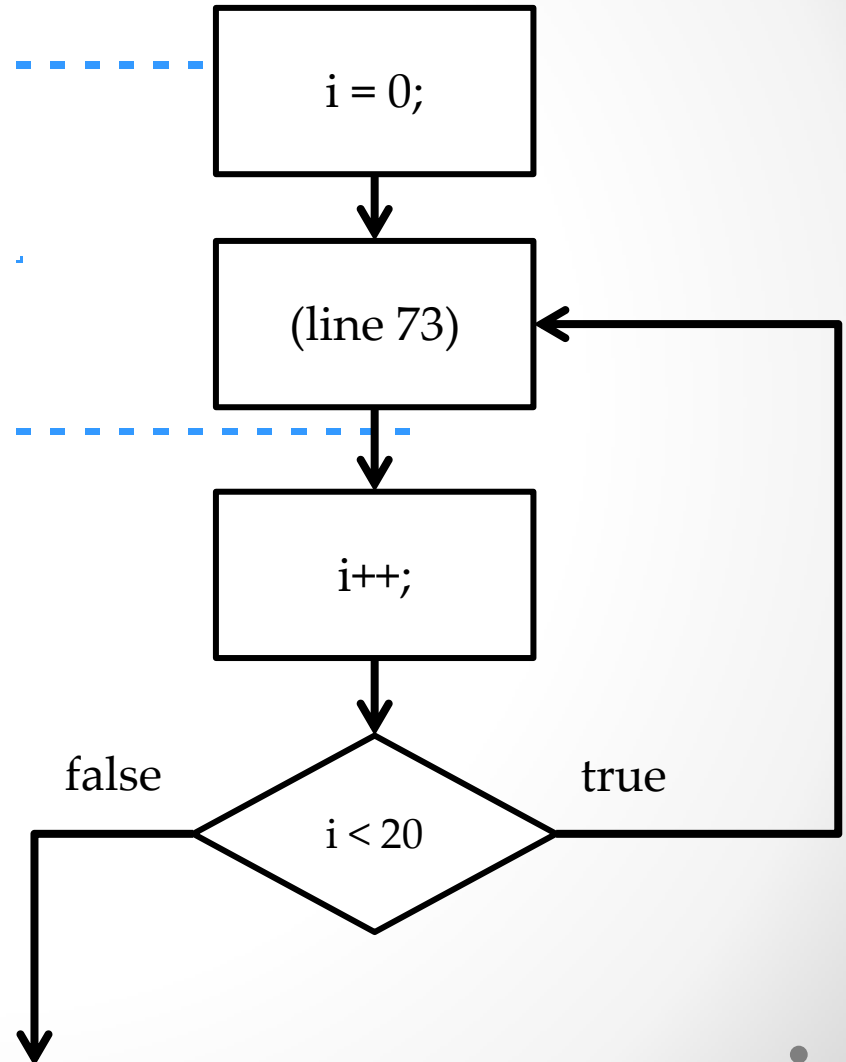
while

```
64 //-----  
65 int i = 0;  
66 while (i < 20) {  
67     //do something.....  
68     i++;  
69 }  
70 //-----
```



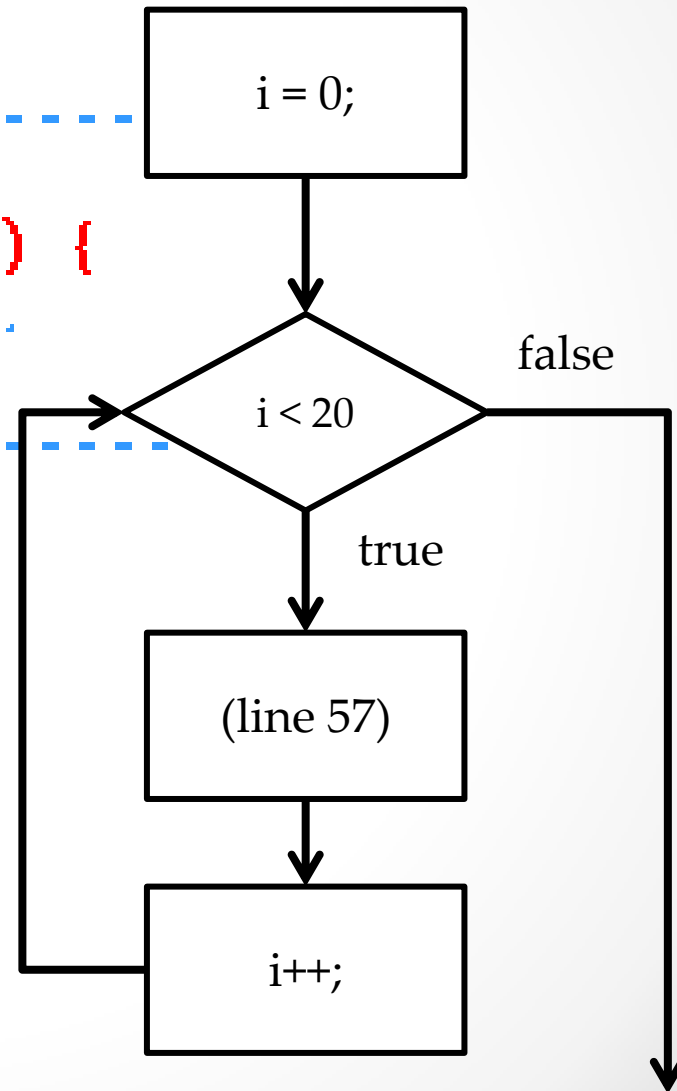
do...while

```
70 //-----  
71 int i = 0;  
72 do {  
73     //do something.....  
74     i += 1;  
75 } while (i < 20);  
76 //-----
```



for

```
54 //-----  
55 int i;  
56 ☐ for (i = 0; i < 20; i++) {  
57     //do something.....  
58 }  
59 //-----
```



巢狀迴圈

```
76 //-----  
77 int i, j;  
78 ㊦ for (i = 0; i < 10; i++) {  
79 ㊦     for (j = 0; j < 10; j++) {  
80         //do something.....  
81     }  
82 }  
83 //-----
```

這會印出？

```
59 //-----  
60 char c;  
61 ㊦ for (c = 'A'; c <= 'Z'; c++) {  
62     printf("%c\n", c);  
63 }  
64 //-----
```

回去試試，並思考

複習

提示：

請輸入棋盤大小： 5

```
**_**_*  
 *_**_  
**_**_*  
 *_**_  
**_**_*
```

	0	1	2	3	4
0	*	.	*	.	*
1	.	*	.	*	.
2	*	.	*	.	*
3	.	*	.	*	.
4	*	.	*	.	*

複習

求最大公因數(Greatest Common Divisor, GCD)

```
12 14
2
```

$$(12, 14) = 2$$

$$(14, 12) = 2$$

$$(2, 5) = 1$$

$$(25, 625) = 25$$

$$(13, 7) = 1$$

提示：輾轉相除法

6	12	14	1
	12	12	
	0	2	

進階挑戰題

下列程式碼會輸出甚麼？

(雖然執行一遍就知道答案，請當作訓練)

```
1  #include <stdio.h>
2
3  int main() {
4      int i, j;
5      for (i = 0; i < 10; i++) {
6          for (j = 0; j <= i; j++) {
7              if (i == 0 || i == 10 - 1 || j == 0 || j == i) {
8                  printf("#");
9              }
10             else {
11                 printf(" ");
12             }
13         }
14         printf("\n");
15     }
16     return 0;
17 }
18
```