

# Snake 貪食蛇

```
typedef struct coordinates{
    int x, y;
} Snake;
Snake snake[100], food;
```

```
struct coordinates snake[100];
```

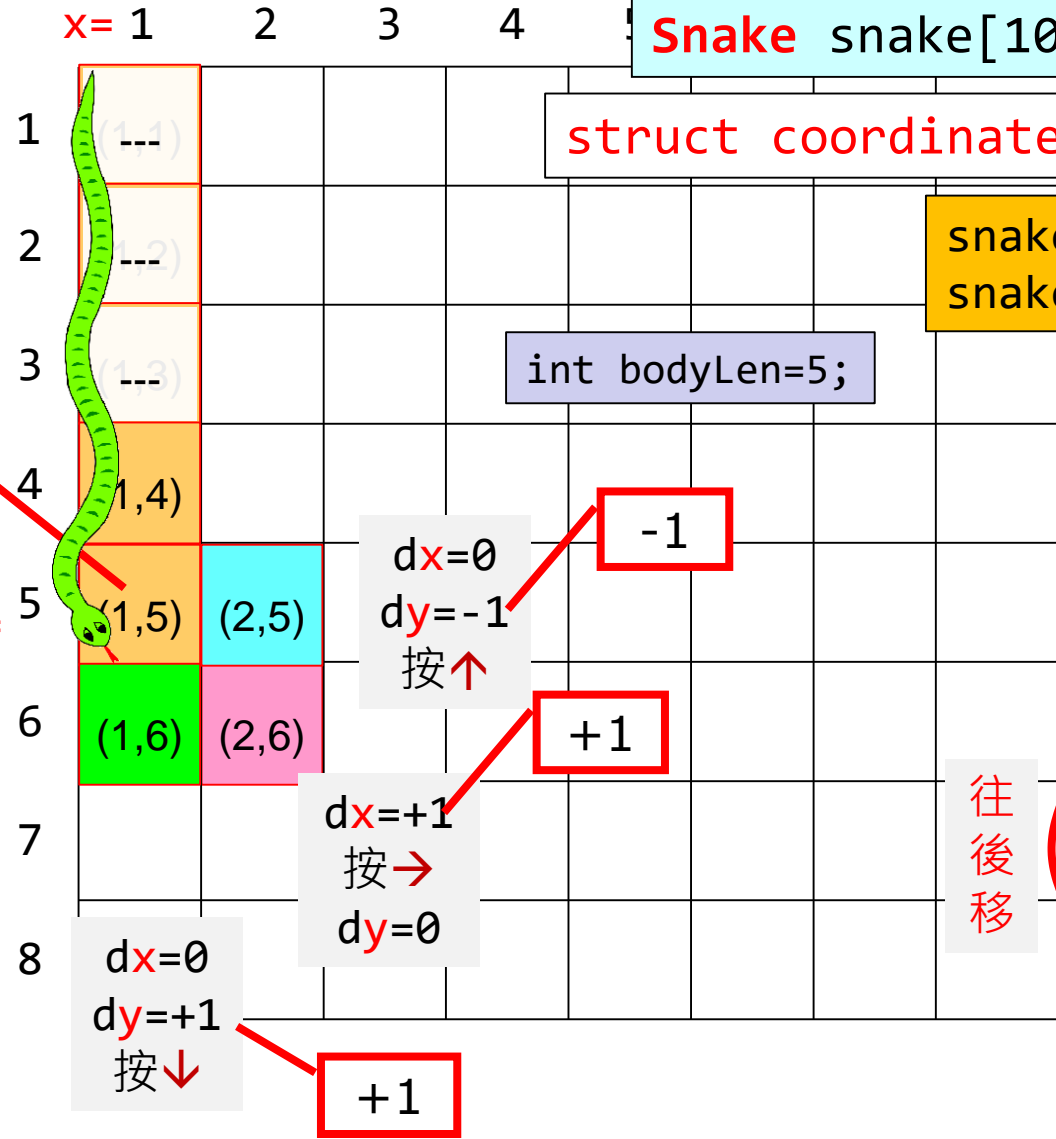
```
snake[0].x = 1;
snake[0].y = 5;
```

```
int bodyLen=5;
```

	.x	.y
snake[99]		
:		
snake[5]		
snake[4]	1	1
snake[3]	1	2
snake[2]	1	3
snake[1]	1	4
snake[0]	1	5

Snake moving

snake[0]

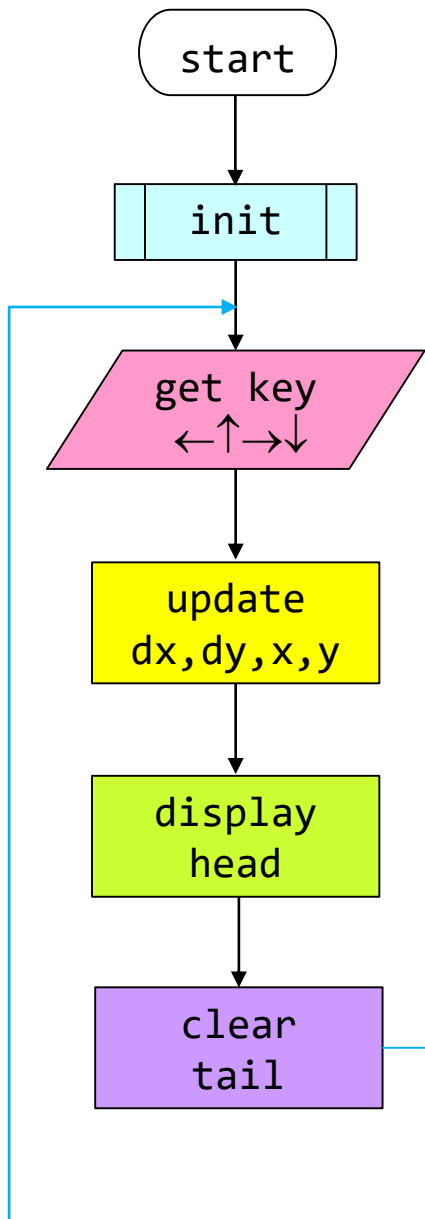


dx	dy	Dir
0	1	↓
1	0	→
0	-1	↑
-1	0	←

往後移

x y  
1

# Snake 貪食蛇



tail

head

	.x	.y
snake[99]		
:		
snake[5]		
snake[4]	1	21
snake[3]	1	32
snake[2]	1	43
snake[1]	1	54
snake[0]	1	65

x   y  
+dx   +dy

x=0, 1, 2, ...

y=	方向	dx	dy
0	↑	0	-1
1	↓	0	+1
2	←	-1	0
:	→	+1	0

```

init()
  bodyLen=5
  x=5, y=1
  dx=0, dy=1
  food.x=rand...
  food.y=rand...
  
```

# Snake 貪食蛇

```
void move(int ch){
    dx = dy = 0; // delta x, delta y
    switch(ch) {
    case 72: /* up */
        dy=-1; break;
    case 80: /* down */
        dy=+1; break;
    case 75: /* left */
        dx=-2; break;
    case 77: /* right */
        dx=+2; break;
    }
}
```

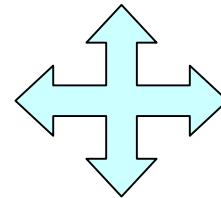
```
typedef struct coordinates{
    int x, y;
} Snake;
Snake snake[100], food;
```

dx=0  
dy=-1  
↑

y--

←  
dx=-1  
dy=0

x--



x++

→  
dx=+1  
dy=0

y++

dx=0  
dy=+1  
↓

```
void printXY(int x, int y, char s[]){
    gotoxy(____);
    printf("%____",s);
}
```

# Snake 貪食蛇

```
main(){
    init();           // x,y,dx,dy,speed
    while(1){
        printXY(____, ____, "O"); // show food ...

        if(kbhit()){ // keyboard hit
            ch = getch();
            if(ch==224) ____ getch() __; // dx=?, dy=?
        }
        x           // new head
        y

        printXY(x,y,"@"); // show new head
        printXY(snake[?].x,snake[?].y," "); // clear tail
        for(i=...) // update body
            snake[i].x = ____; snake[i].y = ____;

        snake[0].x = ____ // new head position
        snake[0].y = ____
        if(____==food.x && ____){ // take the food ...
            bodyLen ____ score ____ food ____
        }
    }
}
```