

1B 程式語言第一次上機模擬考

1. 輸入兩個整數，請列出加、減、乘、除、%(取餘數)的運算。

螢幕輸出：

```
Enter two integers: 25 10
```

```
25 + 10 = 35
```

```
25 - 10 = 15
```

```
25 * 10 = 250
```

```
25 / 10 = 2
```

```
25 % 10 = 5
```

2. 請寫一個迴圈，輸入兩個高度 h1, h2，要能列出由 h1 ~ h2 的 BMI 標準體重範圍，數字要切齊。

螢幕輸出：

```
Enter height (-1 to exit): 170 175
```

```
170 cm: 53.5 ~ 69.4 (kg)
```

```
171 cm: 54.1 ~ 70.2 (kg)
```

```
172 cm: 54.7 ~ 71.0 (kg)
```

```
173 cm: 55.4 ~ 71.8 (kg)
```

```
174 cm: 56.0 ~ 72.7 (kg)
```

```
175 cm: 56.7 ~ 73.5 (kg)
```

```
Enter height (-1 to exit): -1 -1
```

```
Bye! Coding by your_ID
```

3. 輸入高度，畫出 2 個直角三角形如下：

螢幕輸出：

```
Enter height (-1 to exit): 5
```

```
  *  *
 **  **
***  ***
****  ****
*****  *****
```

```
Enter height (-1 to exit): -1
```

```
Bye! coding by yourID
```

4. 寫 2 個 function, `encode(n)` 能夠將一個四位數的整數 `n` 編碼, `decode(n)` 能夠將之解碼。編碼規則如下: 千位數加 5 取餘數後和十位數對調, 百位數和個位數對調。

螢幕輸出

```
Enter N (-1 to exit): 1234
```

```
encode(1234) = 3462 // by calling encode(n)
```

```
decode(3462) = 1234 // by calling decode(n)
```

```
Enter N (-1 to exit): 8391
```

```
encode(8391) = 9133
```

```
decode(9133) = 8391
```

```
Enter N (-1 to exit): -1
```

```
Bye! coding by yourID
```

5. 寫一個選單, 共有 5 個選項如下, 前 3 個選項分別對應到前 3 題, 第 4, 5 個選項對應到第 4 題。

- (1) Arithmetic Computation
- (2) List BMI ranges
- (3) Draw Four Vertical Triangles
- (4) `encode(n)`
- (5) `decode(n)`
- (6) Exit