Lesson 2
Loop

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Factorial 階乗

In mathematic, use symbol “ ! ”.

e.g. 5! = 1x2x3x4x5 = 120

e.g. 6! = 1x2x3x4x5x6 = 720

While Loop

```
int i = 1, answer = 1;
while(i <= 5){
    answer *= i;       //answer = answer * i;
    i++;               //i = i + 1;
}
//answer = 120
```

While Loop

```
int i = 10;
do{
    i--; //i = i – 1
}while(i >= 0);       //remember the semicolon(分號)
//i = -1
```

For Loop

Advantage: can set start value.

```
int i, times = 0;
for(i = 3; i < 10; i += 2){    //use semicolon!!!
    times++;
}
//i = 11, times = 4
```

Exercise 1

Enter two numbers.

Use while loop & for loop to calculate factorial.

=====Display=====

a = 5

5! = 120

b = 6

6! = 720

Tips

Use Tab key to indent(縮排) your code.

Prime Number 質數

The smallest prime is 2.

if - else if - else

```
bool flag = true;
int i;
for(i=0; i<10; i++){
    if(i%5 == 0){
        break;
        flag = false;
    }
}
//i = 5, flag = true
```

break

Jump out loop immediately.

Exercise 2

Enter a start and an end value.

Find all the primes between these two value.

<Tips>

Use 2 for loops, also with if statement.