Ch5: Loop

305171 Computer Programming
Jiraporn Pooksook
Naresuan University

How to make repeated instructions

```c
#include <stdio.h>

int main()
{
    printf("Hello World\n");
    printf("Hello World\n");
    printf("Hello World\n");
    printf("Hello World\n");
    return 0;
}
```

For loop

While loop

Do...while loop

```c
#include <stdio.h>

int main()
{
    int i=1;
    do{
    printf("Hello World\n");
    i++;
    }while(i<=4);
    return 0;
}
```

initial count

Repeated instructions

Increment / decrement the counting number

Condition to end loop

For / While vs. Do..while

For loop & While loop

- Check if the condition is true then do instructions inside { }

Do...while loop

- Do instructions inside {} then check if the condition is true, then go to the next round.

Practice: Loop

```c
int main()
{
    int i=5;
    while(i>0){
        printf("%d ",i);
        i--;
    }
    return 0;
}
```

```c
int main()
{
    int i=5;
    do{
        printf("%d ",i);
        i--;
    }while(i>0);
    return 0;
}
```

```c
int main()
{
    for(int i=5;i>0;i--){
        printf("%d ",i);
    }
    return 0;
}
```

Nested Loop

```c
#include <stdio.h>

int main()
{
    int i=1;
    while(i<=4){
        printf("%d: ",i);
        for(int j=1;j<=i;j++)
        {
        printf("*");
        }
    printf("\n");
    i++;
    }
    return 0;
}
```

i	j
1	1
2	1
	2
3	1
	2
	3
4	1
	2
	3
	4