

C Programming

Practice 4

if statement

```
if ( condition statement )  
start→ {  
        statement;  
end→ }  
if ( condition statement )  
start→ {  
        statement;  
end→ }
```

if-else if statement

```
        if ( condition statement )
start→ {
            statement;
        }
        else if ( condition statement )
        {
            statement;
        }
        else
        {
            statement;
end→ }
```

While statement structure

int i = 0; ← Counter Initialization

while(i < 10) ← Repeat conditions

{

statement

 i = i + 1; ← Counter Change: ex) ++i, i+2, --i, i--, i+2 등

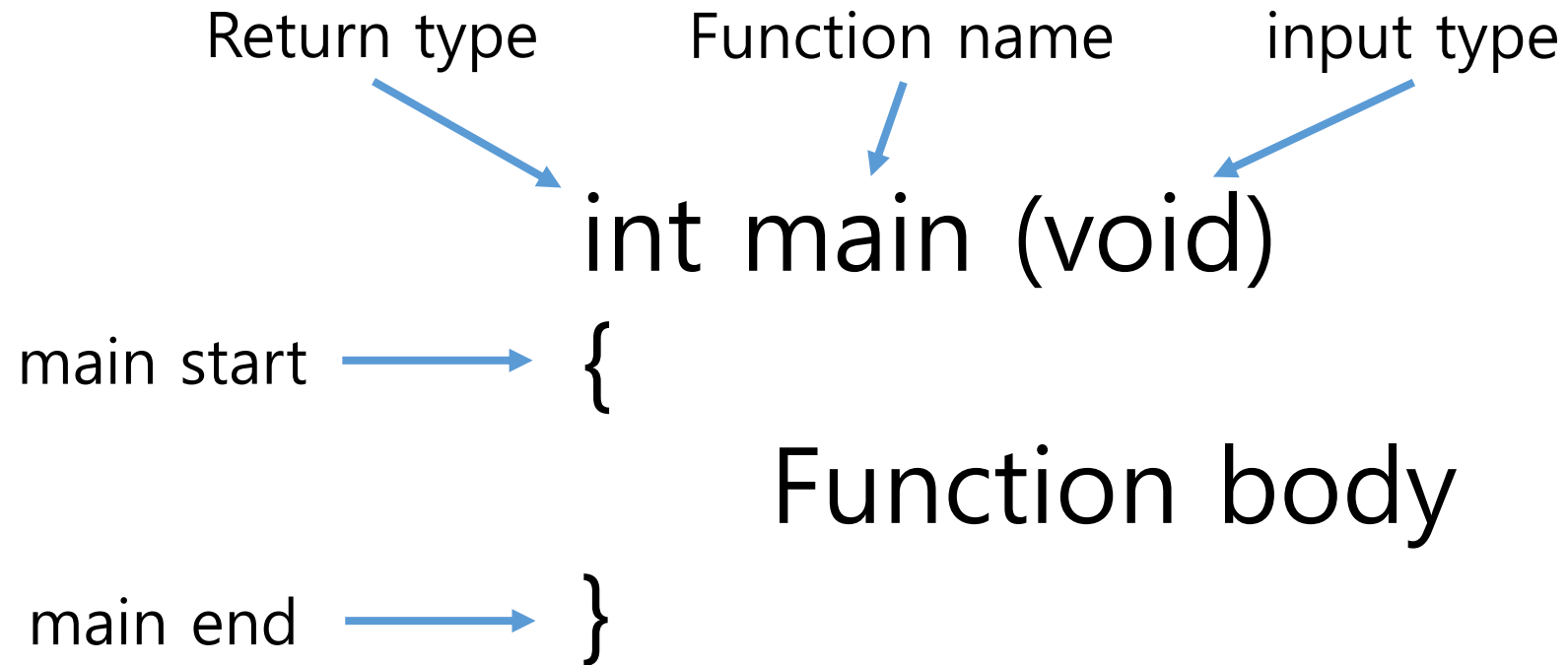
}

For statement

```
for(i=0; i<10; i++) {  
    statement  
}
```

Counter Initialization Repeat conditions Counter Change: ex) ++i, i+2, --i, i--, i+2 등

Function structure



Function structure

```
#include <stdio.h>
void prn_message(void); /* function prototype*/
int main(void)
{
    prn_message();      /* function invocation*/
    return 0;
}
/*function definition*/
void prn_message(void) /* function header*/
{                       /* function body*/
    printf("Howdy!\n");
}
```

```

/* program message.c*/
#include <stdio.h>
void prn_message(   no_of_messages); /* function prototype */
int main(void)
{
    int how_many;
    printf("How many times do you want to see your message ?");
    scanf("%d", &how_many);
    prn_message(how_many);           /* function invocation */
    return 0;
}
void prn_message(   no_of_messages) /* function header */
{
    int i;                          /* function body */
    printf("\nHere is the message : \n");
    for (i = 0; i < no_of_messages; ++i)
        printf("    Howdy!\n");
}

```


Call-by-value

```
#include<stdio.h>
```

```
void swap(int a, int b)
{
    int temp;
    temp = a;
    a = b;
    b = temp;
}
```

Result?

```
int main()
{
    int x = 5, y = 10;
    swap(x, y);
    printf("x = %d, y = %d\n", x, y);
}
```

Call-by-value

```
#include<stdio.h>
```

```
void swap(int a, int b)
{
    int temp;
    temp = a;
    a = b;
    b = temp;
}
```

Result?

x = 5, y = 10

```
int main()
{
    int x = 5, y = 10;
    swap(x, y);
    printf("x = %d, y = %d\n", x, y);
}
```

Homework 7 – Addition program

- Write a program that adds two numbers using the three functions
- Function 1 : `int main(void)`
- Function 2 : `int Input(void)`
- Function 3 : `int Add(int i, int j)`

Ex)

Input two numbers : 3 4
Results : 7

Random number - rand()

```
#include<stdio.h>
#include<stdlib.h> // use for rand() function

#define MAX 5

int main(void)
{
    int index = 0;
    printf("Output 5 random numbers\n");

    for ( index = 0 ; index < MAX ; index++ )
        printf( "%d ", rand() ); // rand() function creates the random number
    printf( "\n" );

    return 0;
}
```

```
Output 5 random numbers
41 18467 6334 26500 19169
```

Random number - srand()

```
#include<stdio.h>
#include<stdlib.h> // use for rand() function
#include<time.h> // use for time() function

#define MAX 5

int main(void)
{
    int index = 0;

    srand(time(NULL)); // use a seed value

    printf("Output the 5 random numbers\n");

    for ( index = 0 ; index < MAX ; index++ )
        printf( "%d ", rand() );    // rand() function creates the random number
    printf( "\n" );

    return 0;
}
```

Output the 5 random numbers
899 26802 14746 30261 24668

Output the 5 random numbers
958 23666 8621 4649 13722

Homework 8 – Lotto

- Write a program that outputs 6 random number in the range of 1-45
- Hint: % operator
- Allow duplicate numbers

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You can win the first prize at lotto !!

19 27 23 15 34 40

Homework 9 - Maximum number

- Write a program that outputs maximum and minimum number in 10 random numbers
- Range of the random number is 1-1000
- Use the for loop

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400 509 392 949 667 606 364 338 120 441

Maximum number is 996

Minimum number is 120

Homework form

- Homework submission e-mail:

hizorro99@naver.com

- E-mail title: day(Thursday or Friday)_name_#week
 - Ex) Friday_james_week5
 - Ex) 금요일반_장원철_5주차
- File title: student id_name_#.c
 - Ex) 2014123456_james_7.c (or .cpp)
 - Ex) 2014123456_james_8.c (or .cpp)
 - Ex) 2014123456_james_9.c (or .cpp)