C Programming Language

(3rd class)

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Today …

- Control
  - Operators
  - Condition
  - Loop
  - Function

Relational operator

```
#include <stdio.h>
void main (void)
{
    int val;
    val = 1 > 0;
    printf("res : %d\n", val);
    val = 1 == 0;
    printf("res : %d\n", val);
    val = 1 < 0;
    printf("res : %d\n", val);
    val  = 1 != 0;
    printf("res : %d\n", val);
}
```

Unary operator

```
#include <stdio.h>
void main (void)
{
    int val =5
    ++val;
    printf("res : %d\n", val);
    val++;
    printf("res : %d\n", val);
    --val;
    printf("res : %d\n", val);
    val--;
    printf("res : %d\n", val);
}
```

```
#include <stdio.h>
void main (void)
{
    int val =5
    printf("res : %d\n", ++val);
    printf("res : %d\n", val++);
    printf("res : %d\n", --val);
    printf("res : %d\n", val--);
}
```

Condition

- if statement

```
#include <stdio.h>
int main (void)
{
    int age;
    printf (“Please input your age:  ”);
    scanf (“%d”, &age);
    if (age > 19)
    {
        printf(“You may not be a high school student\n”);
    }
    return 0;
}
```

Condition

- if – else statement

```
#include <stdio.h>
int main (void)
{
    int age;
    printf (“Please input your age:  ”);
    scanf (“%d”, &age);
    if (age > 19)
    {
        printf(“You are over the age of 19 \n”);        // (A)
    }
    else
    {
        printf(“You are under the age of 20 \n”);       // (B)
     }
    return 0;
}
```

Condition

- if – else if – else statement

```
#include <stdio.h>
int main (void)
{
    int age;
    printf (“Please input your age:  ”);
    scanf (“%d”, &age);
    if (age > 19) {
        printf(“You are over the age of 19 \n”);      // (A)
    } else if (age == 19)  {
        printf(“You are 19 years old\n”);             // (B)
    } else {
        printf(“ You are under the age of 19 \n”);   // (C)
    }
    return 0;
}
```

if example

```
#include <stdio.h>
int main (void)
{
    int num, remainder;
    printf (“Please input an integer:  ”);
    scanf (“%d”, &num);
    remainder = num % 2;
    if (remainder == 0) {
        printf(“Your input number is even \n”);
    } else {
        printf(“ You just input an odd number \n”);
    }
    return 0;
}
```

Condition

- switch case statement

```
#include <stdio.h>
int main (void)
{
    int choice;
    printf (“Please input your choice:  ”);
    scanf (“%d”, &choice);
    switch (choice) {
        case 1:
            printf(“your selected menu no. 1\n”);  break;
        case 2:
            printf(“your selected menu no. 2\n”);  break;
        default:
            printf(“you entered wrong number\n”);
     }
     return 0;
}
```

Loop

- for statement

```
#include <stdio.h>
int main (void)
{
    int val[10];
    int idx ;
    for ( idx = 0; idx < 10; ++idx)
    {
        printf (“the current value is %d\n”, idx);
        val[idx] = idx;
    }
    return 0;
}
```

Loop

- do while statement

```
#include <stdio.h>
int main (void)
{
    int val[10];
    int idx;
    idx = 0;
    do
    {
        printf("the current value is %d\n", idx);
        val[idx] = idx;
        ++idx;
    } while (idx < 10);
    return 0;
}
```

Loop

- **while statement**

```
#include <stdio.h>
int main (void)
{
    int val[10];
    int idx;
    idx = 0;
    while (idx < 10)
    {
        printf("the current value is %d\n", idx);
        val[idx] = idx;
        ++idx;
    }
    return 0;
}
```

Loop

- **break**

```
#include <stdio.h>
int main (void)
{
    int val[10];
    int idx = 0;
    while (idx < 10)
    {
        if (idx == 3) {
            break;
        }
        printf("the current value is %d\n", idx);
        val[idx] = idx;
        ++idx;
    }
    return 0;
}
```

Loop

- continue

```
#include <stdio.h>
int main (void)
{
    int val[10];
    int idx = 0;
    while (idx < 10)
    {
        if (idx == 3) {
            continue;
        }
        printf("the current value is %d\n", idx);
        val[idx] = idx;
        ++idx;
    }
    return 0;
}
```

Function

```
#include <stdio.h>
void myfunc (int a, int b, int c)
{
   printf (“%d%d%d”, a, b, c);
}

void main()
{
    int i=1, j=2, k=3;
    myfunc(i, j, k);
    printf (“%d%d%d”, i, j, k);
}
```

What we have covered today

- Operator (relational, unary)
- Controls in C

Q and A