Function & Pointer

What is Function ?

A function is a block of code which only runs when it is called.

You can pass data, known as parameters, into a function.

Functions are used to perform certain actions, and they are important for reusing code: Define the code once, and use it many times.

Return + Parameter

```c
#include <stdio.h>


// return_type name(parameter)
// {
//      code
//      return what?
// }

int sum (int x, int y) {
    int sum = x+y;
    return sum;
}

int main() {

    printf("%d", sum(10, 5));
    return 0;
}
```

```c
#include <stdio.h>


    //  return_type name(parameter)
    // {
    //     code
    //     return what?
    // }

    int sum(int x, int y);

    int main() {

        printf("%d", sum(10, 5));
        return 0;
    }
    int sum (int x, int y) {
         int sum = x+y;
         return sum;
    }
```

Return + No Parameter

```c
#include <stdio.h>
int sum() {
    int a, b;
    scanf("%d %d", &a, &b);
    int sum = a + b;
    return sum;
}
int main() {

    printf("%d\n", sum());

    return 0;
}
```

No Return + Parameter

```c
#include <stdio.h>

void sum(int a, int b) {
    int sum = a+b;
    printf("%d ",sum);

}
int main() {

    sum(1,2);
    return 0;
}
```

No Return + No Parameter

```c
#include <stdio.h>

void sum() {
    int a, b;
    scanf("%d %d", &a, &b);
    int sum = a + b;
    printf("sum: %d\n", sum);
}
int main() {

    sum();
    return 0;
}
```

Useful Built-in Functions

ciel(), floor(), round(), sqrt(), powc()---- For using these function we need math.h header file

ceil():

```c
#include <stdio.h>
#include<math.h>
int main() {

    double x;
    scanf("%lf", &x);
```

```c
    int ans = ceil(x);
    printf("%d", ans);

    return 0;
}
```

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floor() :

```c
#include <stdio.h>
#include<math.h>
int main() {

    double x;
    scanf("%lf", &x);

    int ans = floor(x);
    printf("%d", ans);

    return 0;
}
```

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round() :

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```c
#include <stdio.h>
#include<math.h>
int main() {

    double x;
    scanf("%lf", &x);

    int ans = round(x);
    printf("%d", ans);

    return 0;
}
```

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Sqrt() :

```c
#include <stdio.h>
#include<math.h>
int main() {

    // double x;
    // scanf("%lf", &x);

    // int ans = round(x);
    // printf("%d", ans);

    int x;
    scanf("%d", &x);
    int ans = sqrt(x);
    printf("%d", ans);

    return 0;
}
```

```
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```

pow() :

```c
#include <stdio.h>
#include<math.h>
int main() {

    // double x;
    // scanf("%lf", &x);

    // int ans = round(x);
    // printf("%d", ans);

    // int x;
    // scanf("%d", &x);
    // int ans = sqrt(x);
    // printf("%d", ans);

    int a, b;
    scanf("%d %d", &a, &b);
    int ans = pow(a, b);
    printf("%d", ans);

    return 0;
}
```

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```

abs() :

```c
#include <stdio.h>
#include<math.h>
int main() {

    // double x;
    // scanf("%lf", &x);

    // int ans = round(x);
    // printf("%d", ans);

    // int x;
    // scanf("%d", &x);
    // int ans = sqrt(x);
    // printf("%d", ans);

    // int a, b;
    // scanf("%d %d", &a, &b);
    // int ans = pow(a, b);
    // printf("%d", ans);
```

```c
    int a;
    scanf("%d", &a);
    int ans = abs(a);
    printf("%d", ans);

    return 0;
}
```

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