

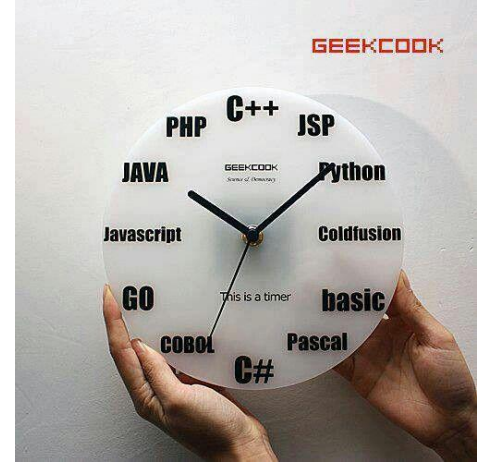
# LEARN PROGRAMMING

STUDY GROUP- SESSION #8

**Weekly: Wednesday 19:15 to 22:15**  
**E037 G29**

# REMEMBER?

1. Problem solving
2. C++ basic syntax
3. Datatypes
4. Loops (For, while)
5. Functions
  - a. Declaration
  - b. Definition
  - c. Calling
6. Arrays (1D,2D,3D)
7. Tasks

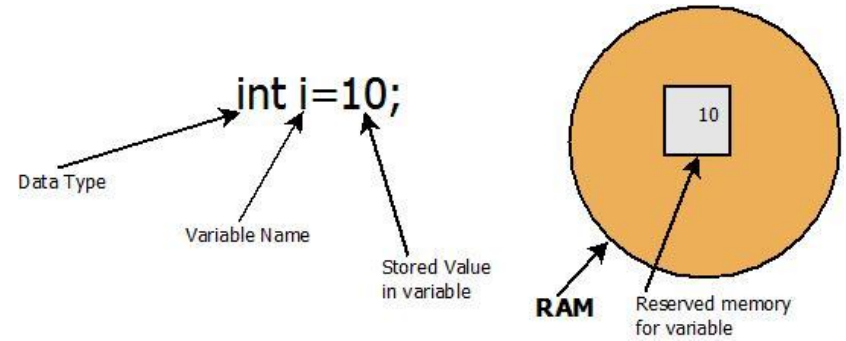


# DATA TYPES

Data types tell the processor what to **expect** as **value** and how much **memory** space should be reserved.

e.g A variable 'X' is declared as *int*, this simply tells the computer that reserve a space for 'X' variable so that it can simply hold the value say '30'.

1. Integer (int)
2. Character (char/string)
3. Floating (float/double)



# FOR LOOP

```
1 #include <iostream>
2 using namespace std;
3
4 int main()
5 {
6     cout << "Fizz Buzz Problem\n";
7
8     for(int i=1; i<=100; i++)
9     {
10         if (i % 3 == 0 && i % 5 == 0)
11         {
12             cout << i << " FizzBuzz\n";
13         }
14         else
15         {
16             if (i % 3 == 0)
17             {
18                 cout << i << " Fizz\n";
19             }
20             if (i % 5 == 0)
21             {
22                 cout << i << " Buzz\n";
23             }
24         }
25     }
26
27     return 0;
28 }
```

To output on screen

For loop condition

For loop body

Body starting from {  
ends with }

If condition

# FUNCTIONS

## User-defined Function

- Sum of two numbers
- Add function

```
#include <iostream>
using namespace std;

// Function prototype (declaration)
int add(int, int);
```

1.Declaration

```
int main()
{
    int num1, num2, sum;
    cout<<"Enters two numbers to add: ";
    cin >> num1 >> num2;

    // Function call
    sum = add(num1, num2);
    cout << "Sum = " << sum;
    return 0;
}
```

3.Calling

```
// Function definition
int add(int a, int b)
{
    int add;
    add = a + b;

    // Return statement
    return add;
}
```

3.Definition

# ARRAYS

## PRINTING ARRAY EXAMPLE:

\*Passing array as an argument in function

Output:

5,10,15

2,4,6,8,10

```
1 // arrays as parameters
2 #include <iostream>
3 using namespace std;
4
5 void printarray (int arg[], int length) {
6     for (int n=0; n<length; ++n)
7         cout << arg[n] << ' ';
8     cout << '\n';
9 }
10
11 int main ()
12 {
13     int firstarray[] = {5, 10, 15};
14     int secondarray[] = {2, 4, 6, 8, 10};
15     printarray (firstarray,3);
16     printarray (secondarray,5);
17 }
```

## TASK FOR TODAY?

**WRITE a C++ program:**

1. Tic Tac Toe game
  - a. Use functions
  - b. Nested loops
  - c. Arrays

