

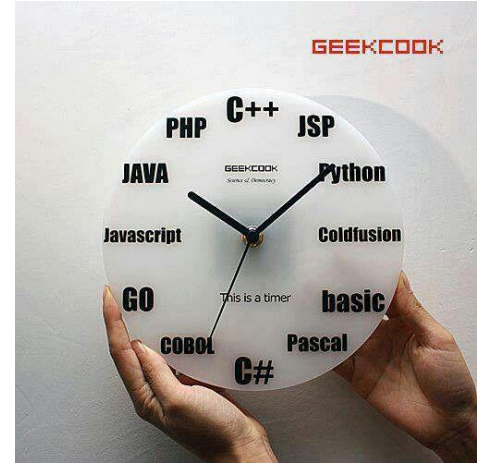
LEARN PROGRAMMING

STUDY GROUP- SESSION #4

Weekly: Wednesday 19:15 to 22:15
R307 G29

WHAT IS OUR PLAN?

1. Programming basic concepts
2. Problem solving
3. Pseudocode
4. Flowcharts
5. Algorithms
6. Syntax
7. Compiling
8. Debugging
9. Bug fixing
10. PRACTICE..PRACTICE..PRACTICE

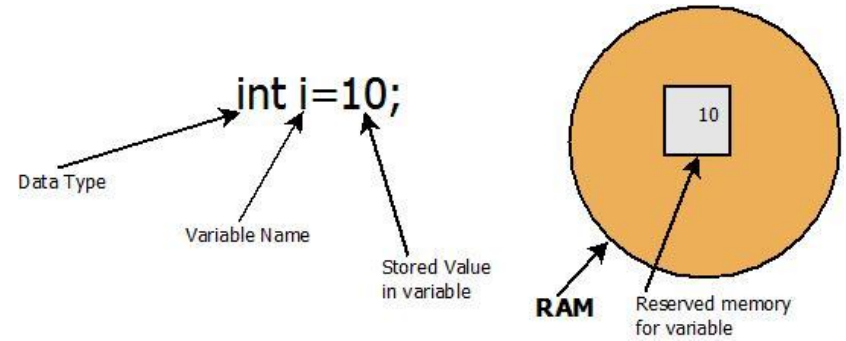


DATA TYPES

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*)



PROBLEM ?

1. Write a program that prints the numbers **from 1 to 100**. But for multiples of **three print "Fizz"** instead of the number and for the multiples of **five print "Buzz"**. For numbers which are multiples of **both three and five print "FizzBuzz"**.

SOLUTION:

```
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 }
```

Header files

Function definition
"main"

Function body starting
from { ends with }

Definition:
<return type> <function
name> ()

return value;

ONLINE TOOL:

https://www.tutorialspoint.com/compile_cpp_online.php

SOLUTION:

```
1 #include <iostream>
2 using namespace std;
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4 int main()
5 {
6     cout << "Fizz Buzz Problem\n";
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8     for(int i=1; i<=100; i++)
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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

ONLINE TOOL:

https://www.tutorialspoint.com/compile_cpp_online.php

TASK FOR TODAY ?

Example 1: Write pseudo code that reads two numbers and multiplies them together and print out their product.

Example 2: Write pseudo code that tells a user that the number they entered is not a 5 or a 6.

Example 3: Write pseudo code that performs the following: Ask a user to enter a number. If the number is between 0 and 10, write the word blue. If the number is between 10 and 20, write the word red. if the number is between 20 and 30, write the word green. If it is any other number, write that it is not a correct color option.

Example 4: Write pseudo code to print all multiples of 5 between 1 and 100 (including both 1 and 100).

Example 5: Write pseudo code that will count all the even numbers up to a user defined stopping point.

Example 6: Write pseudo code that will perform the following.

- a) Read in 5 separate numbers.
- b) Calculate the average of the five numbers.
- c) Find the smallest (minimum) and largest (maximum) of the five entered numbers.
- d) Write out the results found from steps b and c with a message describing what they are

Homework 1: Write pseudo code that reads in three numbers and writes them all in sorted order.

Homework 2: Write pseudo code that will calculate a running sum. A user will enter numbers that will be added to the sum and when a negative number is encountered, stop adding numbers and write out the final result.

TASK FOR HOME ?

1. Write a C++ program that “Prints the table of any number entered by user”?
2. “Prompt the user to input 3 integer values and print these values in forward and reversed order, as shown below”?
3. “Print following lines:
 - a. You are 5 years old and too young to play the game.
 - b. You are too young to have a beer ! (define age limit).

NEXT SESSION TOPICS?

1. Functions

- a. Pre-defined functions
- b. User-defined functions

2. Arrays

- a. One-dimensional
- b. Two-dimensional
- c. Three-dimensional

THANK YOU
LET'S GET STARTED

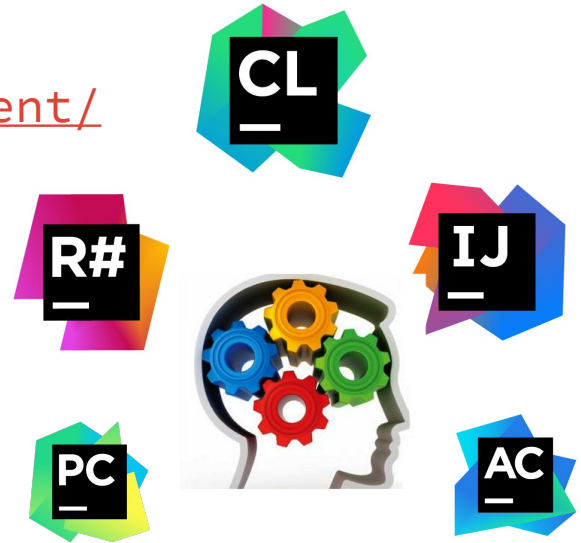


TOOL & TECH

Integrated Development Environment (IDE)

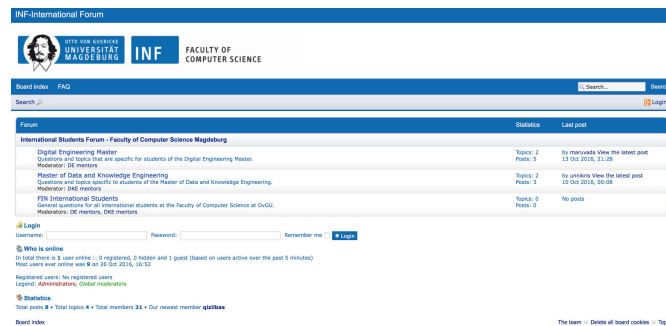
JETBRAINS: <https://www.jetbrains.com/student/>

CLION - C/C++ (Install THIS)



HOW TO REACH US?

1. FORUM for International students?
2. Link: <https://iif.cs.uni-magdeburg.de/index.php>
3. “Study group programming”
4. Login with your university ID.
5. Post your questions on FORUM.
6. Moderators will reply.



The screenshot shows the homepage of the INF-International Forum. At the top, there is a blue header with the text "INF-International Forum" and logos for Otto von Guericke University Magdeburg and the Faculty of Computer Science. Below the header, there is a navigation bar with links for "Board index", "FAQ", and a search bar. The main content area is titled "Forum" and lists several discussion topics. Each topic includes the number of topics and posts, and the name of the last poster. The topics listed are: "Digital Engineering Master" (2 topics, 9 posts), "Master of Data and Knowledge Engineering" (2 topics, 3 posts), and "FIN International Students" (0 topics, 0 posts). At the bottom, there is a "Login" section with fields for username and password, and a "Who is online" section showing the number of registered users and guests.

| Forum | Statistics | Last post |
|---|-----------------------|---|
| Digital Engineering Master Questions and topics that are specific for students of the Digital Engineering Master. Moderator: DE mentors | Topics: 2 Posts: 9 | by mercedesa View the latest post 13 Oct 2016, 01:29 |
| Master of Data and Knowledge Engineering Questions and topics specific to students of the Master of Data and Knowledge Engineering. Moderator: DMN mentors | Topics: 2 Posts: 3 | by yankin View the latest post 10 Oct 2016, 00:08 |
| FIN International Students General questions for all international students at the Faculty of Computer Science at OUG. Moderators: DE mentors, DMN mentors | Topics: 0 Posts: 0 | No posts |

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Who is online
In total there is 5 user online: 0 registered, 0 hidden and 5 guest (Based on users active over the past 5 minutes)
Most users ever online was 9 on 26 Oct 2016, 06:52

Statistics
Total posts: 8 • Total topics: 4 • Total members: 21 • Our newest member: [quibba](#)

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