Programming

Table of Contents

1. Youtube link: freecodingclub

All the videos of the sessions will be uploaded there.

2. Type of programming languages

2.1. procedural

- c
- c++
- python

2.2. object oriented

- c++
- java
- python

2.3. scripting

- bash
- perl
- batch (windows)

2.4. functional

- F#

3. Computer only understand binary language (0 or 1)

It consists of 0 and 1

- Source Code (Human readable code)
- Machine Code (format - 0 and 1) (read by computer)

4. Compiler and Interpreter

- Compiled language - c++, c, etc.
- Intepreted languages - python, bash, batch, perl, etc.
    - Compiler and Interpreter convert the source code into machine code

4.0.1. Compiler

- It translates the whole code at once
- If there is any error, it will be caught by the compiler

4.0.2. Interpreter

- It translates the code line by line
- Errors are caught during the runtime

5. How can we start?

- Compiler + editor
- gcc for c++, c
- vscode for editing the files (editor)

6. Basic commands and codes used in todays session

```c
#include<stdio.h>
int main(){
  printf("Hello, World\n");
  return 0;
}
```

```cpp
#include<iostream>
using namespace std;
int main(){
  cout<<"Hello, World"<<endl;
  return 0;
}
```

```
#To compile c code use
gcc filename.c

#To compile c++ code use
g++ filename.c

#After compilation completed without any error type these to run your file
a           #if you are using command prompt
./a         #if you are using powershell
./a.out     #if you are using linux or macos
```

7. For android users to setup termux and compiler

- Download the termux from the link
- Install it in your device

- After install type the following command

```
pkg update        #this will update your repository (only have to do it for the first time)
#you can also use `apt update`
#if it stuck at some percentage press enter, it will resume again

#after all done type
apt install clang     #this will install c and c+ compiler
```

```
#type following to varify
gcc -v    #for c compiler
g++ -v    #for c++ compiler
```

- Now you can use any terminal based editor like nano vim to writer code
- Type `nano filename.c`
- Write your c code
- Type `ctrl + x` to exit (the shortcult will be there, look the bottom of your screen)
- It will ask you to save before exiting, press `Y` to save and press `Enter`
- Now you can compile and run you code (check basic command section for commands)

8. References

- Day1 videos link
- ASCII chart list

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