

Programming

Difference between programming and scripting.

- Different types of programming languages
- Programming language
 - Set of instructions (code) which tells a computer what it needs to do.
 - High-level languages that need to be converted into machine level language because a computer can only understand machine level or binary (0 and 1) language.
 - We write instructions in human-readable form and then “compile” to convert it into machine level language.
 - Computer understands “compiled” code and performs the task.
 - Compiler scans the code at one time and looks for errors.
 - Once a program is compiled, the source code is not needed.

<https://www.geeksforgeeks.org/difference-between-programming-scripting-and-markup-languages/>

- **Scripting Language**

- A script to perform some certain task.
- Usually connects one language to another.
- Scripting languages need to be interpreted (scanning the code line by line), not compiled all at once.
- All scripting languages are programming languages but all programming languages are not scripting languages.
- Scripting languages are generally slower because not pre-compiled.
- Source code needed every time to run the script.

Programming Languages

C

C++

Fortran

Scripting Languages

Python

Perl

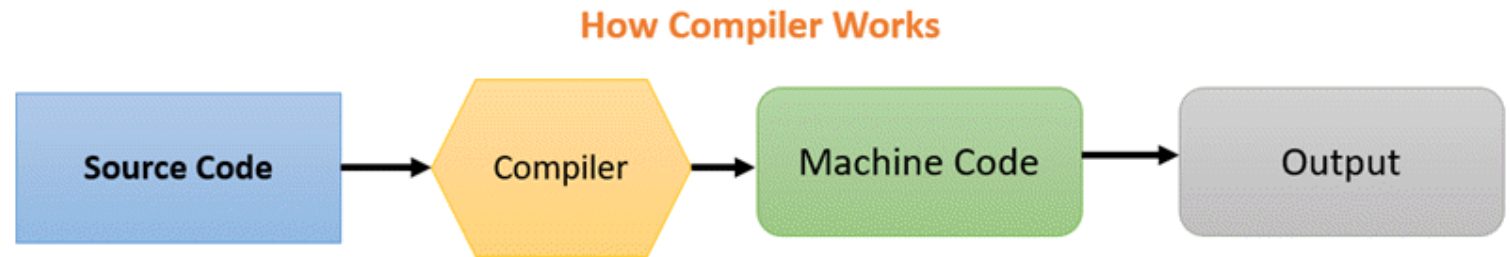
Unix shell scripts

Matlab

IDL

- Scripting languages
 - Automate certain tasks in a program
 - Extract information from a data set
 - Less code intensive as compared to traditional programming languages
- Programming languages
 - Typically run inside a parent program (script)
 - Better for large mathematical models

Hysplit



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Script: python,
bash



```
cp -rp /uufs/chpc.utah.edu/common/home/u0079358/hysplit ~unid  
/uufs/chpc.utah.edu/common/home/u0079358/hysplit/scripts  
control file
```

```
/uufs/chpc.utah.edu/common/home/mace-group6/hysplit_gdas
```

<https://www.ready.noaa.gov/archives.php>

<ftp://ftp.arl.noaa.gov/pub/archives/gdas1>

Login as anonymous. Password is email.

#=1 - days 1-7

#=2 - days 8-14

#=3 - days 15-21

#=4 - days 22-28

#=5 - days 29 - rest of the month

<https://www.ready.noaa.gov/hysplitusersguide/S262.htm>

<https://www.ready.noaa.gov/hypub/trajinfo.html>