

# 1<sup>st</sup> NASA LRC Fortran Tutorial

## Introduction and Setup

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## Who we are?

- Carlos Cruz (Computational Scientist)
- Jules Kouatchou (Computational Scientist)
- Bruce Van Aartsen (Senior Software Engineer)

We are members of the Advanced Software Technology Group (ASTG) Code 606, NASA GSFC.



# Agenda

## Day 1

- Introduction to Fortran
- Variables and data types
- Conditionals and loops
- Array concepts
- Subroutines and functions
- Modules and interfaces
- File IO

## Day 2

- Derived types and pointers
- Introduction to OOP
- IO Enhancements
- Inheritance
- Polymorphism
- Miscellaneous items
- Interoperability with C

Introduction to Fortran 90-95

Introduction to Fortran 2003



# Get Lecture Materials from Github

Open a terminal (Linux/Mac) or command prompt (Windows) and use Git:  
`git clone https://github.com/cacruz/LRC_Fall18_Fortran.git`

If Git is not available or Git is not working then, in your browser open [https://github.com/cacruz/LRC\\_Fall18\\_Fortran.git](https://github.com/cacruz/LRC_Fall18_Fortran.git), and download the zip file.

The screenshot shows the GitHub repository page for 'cacruz / LRC\_Fall18\_Fortran'. The repository has 57 commits, 1 branch, 0 releases, and 3 contributors. The file list includes 'cacruz Update README.md', 'Day\_1', 'Day\_2', 'shared', 'src', 'tex', 'README.md', and 'README.md'. A modal window is open showing 'Clone with HTTPS' and 'Download ZIP' options. An arrow points to the 'Download ZIP' button with the text 'Get a zip file'.



# Log in to Amazon EC2

Open a terminal (Linux/Mac) or command prompt (Windows) and go into the LRC\_Fall18\_Fortran directory/amazon (what you just downloaded):

```
cd LRC_Fall18_Fortran/amazon  
ssh -i "<file>.pem" <student>@<url>
```

substitute <student> for your assigned userid

Then, in your Amazon account:

```
git clone https://github.com/cacruz/LRC_Fall18_Fortran_src.git  
cd LRC_Fall18_Fortran_src/src  
ls  
01_Introduction  
02_Data_types  
03_Control_constructs  
04_Array_concepts  
etc...
```

