# Programming Assignment Lecture I
## Introduction

Xie

xiemhemail@gmail.com

Sep ??, 2017

# Basic Info

- ► Course Content
    - ► PA1-PA??
- ► Time
    - ► ???
- ► Assessment methods
    - ► Submit project and report.
    - ► Before **stage's deadline**.
- ► Instruction
    - ► https://nju-ics.gitbooks.io/ics2017-programming-assignment/

    - ► Please check the "news" module of website at least once each day.

# Teacher and T.A.s

emmmmm

# Programming Assignment Lecture I

# Why we need learn ICS? – yzh

# Motivation

## Question

```
int main()
{
    printf("Hello World");
    return 0;
}
```

What the computer are doing when you execute the program above ?

## Tip

This may appear in exams.

# System Stack

| Application |
| --- |
| Algorithm |
| Programming Language |
| Operating System/Virtual Machines |
| Instruction Set Architecture |
| Micro-architecture |
| Register-Transfer Level |
| Gates |
| Circuits |
| Devices |
| Physics |

# What you'll get after finishing PA

You'll
- **Get Systems thinking**
- Understand how program run on a computer
- Enhance **coding** ability
- Prepare for later courses (OS,Compiling)

Way Complete a tiny but entire computer system and run program on it.

PA NEMU( i.e. NJU Emulator)

# Resources

Plantform and tools  IA-32 + GNU/Linux + gcc + C

Guidebook  https://nju-ics.gitbooks.io/ics2017-programming-assignment/

Skeleton  https://github.com/NJU-ProjectN/ics-pa

### Tip

You can download the PDF or epub version of guide in github.

# Programming Assignment Lecture I

1 From Computer System, to ICS, to PA

2 How we emulate a computer? $\longrightarrow$ The story of computer.

3 Help you do it! $\longrightarrow$ Brand new PA

# DLC

- ▶ Most of you have completed the Digital Logic Circuit Course.(Taught by 张泽生吴海军)
    - ▶ summator
    - ▶ register
    - ▶ multiplexer
    - ▶ *etc.*
- ▶ Logic Gate $\longrightarrow$ digital logic device $\longrightarrow$ Computer

# Programming Assignment Lecture I

1. From Computer System, to ICS, to PA

2. How we emulate a computer? $\longrightarrow$ The story of computer.

3. Help you do it! $\longrightarrow$ Brand new PA

# The End