数据结构与算法专题实践

吕建华

lujianhua@seu.edu.cn

Office: 计算机楼: 230

About me

- Data Science, Data Engineering, Knowledge Discovery, Artificial Intelligence
  - Healthcare data analytics
  - Intelligent manufacturing/Industrial System Healthcare
  - …

1. What's going on
2. What're the reasons
3. What we can do

Prerequisites

- ✓ C++
  - File operations
  - Parallel programing: threads
  - Bit-wise operations (optional)
- ✓ Undergraduate data structures
  - Stacks and Queues
  - Linked lists
  - Trees
  - Graphs

What The Course Is About

- Programing practices for:
  - Space efficient applications
  - External sorting
  - Pattern Matching

How The Course is Organized

- ✓ Introduction (4 class hours: Instructor)
  - 2 for DS projects (Week 9)
  - 2 for algorithm projects (Week 13)
  - Necessary knowledges
- ✓ Project Programming (32 class hours)
- ✓ Presentation (4 class hours)
  - About one of the assigned projects (randomly selected by instructor)

Project report

The Project Report

- ✓ One report per project
- ✓ MS Word: .doc
- ✓ About the projects

Project Reports

1. **问题描述/需求分析**
   仔细分析实验要求，对实验内容进行需求分析
2. **系统结构/算法思想**
   基本思路，系统框架，描述各模块功能及其关系
3. **功能模块设计**
   模块设计思想、流程图、算法复杂度分析
4. **测试结果与分析**
   测试数据选择或生成办法，运行结果截图，性能图
5. **实验总结**
   遇到的问题，问题的解决过程，总结实验心得体会
6. **源代码**
   项目所有源程序清单，应有充分的注释

Evaluation

Representations: 30%,

Project Reports: 70%