ASU Math Lab

2017/2018 Project

Overview

Implement mathematical library software. Similar to Matlab, Octave and similar tools.

Specifications

- Using C/C++
- Development under linux
- Production to linux server (Centos 6.7)
- Any C/C++ IDE works under linux.
- g++ compiler, makefile is required.
- Source Control, Issue Tracking, Documents at Bitbucket

Phases

1. Core operations (2 Weeks)
2. Performance and design tuning (2 Weeks)
3. Basic system operations (4 Weeks)
4. Advanced system operations (4 Weeks after exams)

Phase 1: Core Operations

- Implement C++ class for matrix
- Support dynamic creation and destruction of matrices of any size
- Support addition, subtraction, multiplication, transpose and division
- Support sub matrix extraction using range or excluding range
- Process input user commands and show results directly
- Process input file, show each step result then exit

Phase 1: Process

- Study requirements (from Matlab docs)
- Implement the code
- Apply system test
- Upload code to production server
- Cross group testing
- Acceptance test and results

Phase 1: Core Operations

> A = [1.4 2.2 3.2; 4.4 5.4 6.4; 3.3 4.2 2.2];

> B = [1.5 4.1 5.4; 3.1 4.2 1.2; 3.2 4.3 2.2];

> C = A + B

> D = A - B

> E = A * B

> F = A / B

> G = A’