

HCMC UNIVERSITY OF TECHNOLOGY

OFFICE FOR INTERNATIONAL STUDY PROGRAMS



BK - OISP

REPORT FOR TEAMWORK ACTIVITIES

Linear Algebraic Lib

June 1st, 2018

Course: Introduction to Programming

Lecturer: Dr. Võ Thị Ngọc Châu

Class: CC03

Group: Master C

Member list:

Trần Tiểu Bình	- 1752010
Trần Lam Duy	- 1752137
Nguyễn Gia Thịnh	- 1752513
Hồ Trọng Thành Vinh	-1752621

1. Team member

No.	Member	Student ID	Email
1	Trần Tiểu Bình	1752010	binh.tran.99@hcmut.edu.vn
2	Nguyễn Gia Thịnh	1752513	thinh.nguyengia@hcmut.edu.vn
3	Hồ Trọng Thành Vinh	1752621	vinh.ho_bku@hcmut.edu.vn
4	Trần Lam Duy	1752137	duy.tran.1201@hcmut.edu.vn

2. Mission

- Understand and apply flexibly Linear Algebraic
- Perform calculations and operations related to Linear Algebraic using computer.
- Build a linear algebraic library using suitable algorithms for manipulations on matrices.

3. Tasks division

Member	Missions
Trần Tiểu Bình	Create a plan, find suitable algorithms for all tasks, main coder, write report.
Nguyễn Gia Thịnh	Write IO modules, check code styles, check logic errors, debug.
Hồ Trọng Thành Vinh	Check coding styles, write Process modules.
Trần Lam Duy	Check coding styles, write report, write Library.h.

3. Detailed plan

- Divide the task and find suitable algorithms.
- Build functions for each requirement, check whether these functions work well.
- Build the library for these functions and connect them to a program.
- Check the logic errors and coding styles.
- Check again add notes and shorten the codes.

4. About program

There are User guide and information about team in the program.

User guide:

In the first screen <MATRIX>, press any key to continue.

In Main Menu

- I. Press number 1 and Enter to select function.
 1. Check symmetry
 - Check whether the matrix is symmetric or not.
 2. Find transpose matrix
 - Find the transpose of a matrix
 3. Find determinant
 - Find the determinant of a matrix
 4. Find product
 - Find the product of two matrices
 5. Check identity
 - Check whether two matrices are the same or not
 6. Check contain

- Check whether a matrix is contained in another matrix

7. Find relation factor

- Check if a matrix is created from another by adding, subtracting, multiplying or dividing by a factor.

8. Find Max of matrix

- Find the largest index in a matrix

9. Find Min of matrix

- Find the smallest index in a matrix

II. Press number 2 and Enter to read User Guide that you are reading :
Then, press any key to turn back the main menu.

III. Press number 3 and Enter to read About Program
Then, press any key to turn back the main menu.

Error code:

Errors caused by user can be detected and warned by these code

Dimension Error: 100111

Math Error: 100222

Program detailed:

There is a library where function declarations are shown. The other *.c file contain functions of three type: integer (INT), floating-point number (DOUBLE), character (CHAR). Please note that character and integer use the same functions except MatrixIO. That means the program stores the characters inputted in integers (which the ASCII decimal code of the character), processes them as integer and prints them as characters and integers.

The file Control.c is the largest one containing the process of 3 menus and connections to other functions.

In each file *.c, there are functions in 3 types of data. These functions may be identical or not, depending on the data type.

We compare two floating-point numbers by consider their difference. If this difference is less than or equal to a number called PRECISION, the two numbers above are consider as the same and vice versa. You can change the PRECISION in Equal.c file

5. Benefits and problems

Benefits

- Increasing skills for working in a team.
- Making plan effectively and flexible.
- Gaining knowledge about coding.

Problems

- Problem with variables when modularize the program.
- Require lots of time finding error and checking code.

6. Member rating

No.	Member	Student ID	Comments from other members.	Rating
1	Trần Tiểu Bình	1752010	Good leader, has a practical plan, does most of the tasks, has a good connection in group.	10/10



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2	Nguyễn Gia Thịnh	1752513	Has a good interaction in group, does well on the tasks.	10/10
3	Hồ Trọng Thành Vinh	1752621	Has a poor connection with other members, does nothing except for checking code.	6/10
4	Trần Lam Duy	1752137	Has a good connection with other member, does well on the tasks.	8/10