

**Texas Tech University**  
**Department of Computer Science**

**Course Name:** Programming Principles  
**Instructor:** Dr. Juan Carlos Rojas

**Number:** CS-1412

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## Final Project

### Project Description

This project is individual.

Develop a C program that solves a problem of your choice. Any program is fine, as long as it meets the following requirements:

- 1) It should make use of:
  - a. A hierarchy of functions
  - b. Custom data types (enums, structs, unions)
  - c. Dynamic data structures (malloc-based)
  - d. Files (text or binary)
- 2) The complexity is at least (could be more):
  - a. About 15 functions
  - b. About 1,000 lines of code
- 3) It needs to be approved by your instructor

### First Proposal

You should submit a project proposal to Blackboard that should include:

1. Conceptual description of the project you are proposing
  - a. What it does
  - b. How it interacts with the user
  - c. Any data files that you will need
2. Mock-ups of how you want the program to work
  - a. Drawings
  - b. Written text that simulates what your program would possibly look like

### Progress Report

You should submit a progress report to Blackboard that should include:

1. Refined description of the project
2. Refined mock-ups
3. Structure chart
  - a. Proposed hierarchy of functions that will implement your program

## Final Deliverables

You are expected to submit the following on Blackboard:

1. The source code and data files necessary to run your project, along with a readme.txt file that explains how to run it. It should be submitted as a single .zip file.
2. A report document (Word or PDF) that includes:
  - a. Objectives
  - b. Inputs and outputs to the system
  - c. A structure chart of all your functions
  - d. Detailed description of all functions
    - i. Description
    - ii. Parameters
    - iii. Return value
  - e. Test plan
  - f. Test results
  - g. Observations:
    - i. What worked well?
    - ii. What didn't work, or was particularly hard?
    - iii. What could be done to improve it in the future?
3. A brief PowerPoint presentation of about 10 slides that describes:
  - a. Overview of your project
  - b. Inputs & outputs
  - c. Brief description of functions
  - d. Test results

## Live Demonstration

You will be expected to present to your classmates, and possibly some guests, the following:

1. Your PowerPoint presentation (10 minutes maximum)
2. Demonstration of your project executing (5 minutes maximum)

## Evaluation

The following is the evaluation criteria for your project:

Category	Criterion	Weight
Code	Has the right complexity	5
	Uses a function hierarchy correctly	10
	Uses custom types correctly	5
	Uses dynamic data structures correctly	5

	Uses files correctly	5
	Executes correctly	10
	Has good variable and function names	10
	Is well commented	10
	The instructions (readme.txt) were clear	5
Report	Is complete	10
	Is clear	5
Presentation	Is complete	5
	Is clear	5
Live demonstration	Is presented clearly	5
	Worked correctly	5