

Student Self-Assessment for Challenge Exam for CS-111

AM I READY TO CHALLENGE CS-111

This document is intended for student self-assessment purposes only. Review it carefully to determine if you are ready for the Challenge Exam for the course indicated above. Your self-assessment is not a guarantee that you will pass the Challenge Exam. Faculty with expertise in the subject matter evaluate whether your exam provides sufficient evidence that you have demonstrated appropriate college-level mastery of the course content. Enrolling in the course may be your best option.

LEARNING OUTCOMES:

This exam will test your knowledge and skills for the following Learning Outcomes: Problem solving techniques and the basic concepts of computer programming concepts, such as data types, input/output statements, arithmetic, logical and relational operators, conditional statements, loop-control statements, functions, file input/output operations, and list/array data structures.

CHALLENGE EXAM DESCRIPTION:

You will be asked to demonstrate your knowledge and skill related to the Challenge Course through these types of questions:

- Write a computer program to solve a problem using an approved procedural or object-oriented computer programming language. For example using C/C++, Python, Java etc.

EXAMPLE EXAM ITEMS:

The text file *payroll-year-2019.txt* contains employee information, including monthly salaries for workers at the Lewiston Paper Factory for over a duration of 12 months. Examine the structure and content of the file, and implement a correctly functioning computer program to perform the following tasks:

- 1) Open the text file and read the data into a data structure in computer memory. Using the payroll information read into the computer memory, display all the employee information on the computer monitor. **(20 points)**
- 2) Implement a function to calculate the total annual salary for all female employees with at least two dependents or male employees that are 40 years or older. The results should be written into an output text file called *payroll-year-2019_reports.txt*. **(35 points)**
- 3) Implement a function to report the total number of employees in the payroll data file, and calculate maximum and average annual employee salary. Append the results to the output text file created above. **(35 points)**
- 4) Prompt the user to input or enter a query Employee ID Number and using the data structure containing the employee information, retrieve the entire record or information for the employee. **(10 points)**

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PROGRAMMING DIRECTIVES:

1. Global variables are NOT allowed in your function code implementations.
2. Submit the code for your computer program and the text file containing your results.

DETERMINATION OF CHALLENGE EXAM OUTCOME:

You will need to earn the following to be awarded credit through Challenge Exam for this course:

- 70% Correct. An Assessment Rubric is attached indicating the value of each item and the basis for determining the quality of the answer.

ITEMS YOU MAY BRING/USE DURING THE EXAM:

1. A calculator
2. An exam cheat sheet. (Maximum of two sheets of paper)

ASSESSMENT RUBRIC

CS 111

Note: A total score of at least 70 out of 100 points is required to PASS the exam.

ITEM	DESCRIPTION	POINTS
1	Reading input from keyboard and displaying data on computer monitor	10
2	Designing an appropriate basic data structure to store data read from a text file into memory	5
3	Correctly reading data from a text file into an appropriate user-created basic data structure in memory	10
4	Creating a function with appropriate input parameters, returning function result, and not using global variables	15
5	Using the appropriate conditional statements for the problem	10
6	Accurate data manipulation using appropriate arithmetic, logical and relational operators	10
7	Ability to use appropriate loop-control structures	10
8	Opening existing data files and creating new data files for output	10
9	Correct programming solution	20
All	Total Score	100