



CMIS 102: Introduction to Programming

Assignment 5: Final Project

Summary:

This assignment is the final project and is valued at 50 points and is 25% of your course grade.

The final project is your last chance to demonstrate that you have acquired understanding of algorithm design and the computer programming process. There is only one part and it will require you to utilize the material already covered in the course plus the newer material. You have a choice on how to design and implement your program. You can either continue writing it as a procedural program as we have in the past or you can try designing and implementing it as an Event Driven program using an HTML form Graphical User Interface (GUI).

You are required to create at least two functions and one array in your program. Grading will be 80% objective (results, explanations, conclusions) and 20% subjective (neatness, clarity, conciseness, extra work). An assignment that minimally meets all specifications correctly and without errors will receive a grade of 80%. If any portion of a project is plagiarized, the entire project will receive a score of zero.

Design Document Requirement:

A **Design Document** is required as in previous assignments and will be 50% of the grade. The design document needs to include the following explicitly labeled items:

1. Program specifications
2. Algorithm design showing mathematical equations in computer algebra format.
3. Flowchart for main program or functions.
4. Design for text used in input and output displays.
5. Known test data for which you know the results for all possible conditional paths.

Due date for the design document is the last week of class in class write a Program Design Document to include which you will upload as an attachment to LEO within a Word document:

1. Written specifications in your own words
2. Algorithm design with flowchart describing program sequential processing.
3. Known test data which will test each branch of selection structures.

Program Implementation needs to be demonstrated for each part by creating a JavaScript program. You will need to provide a link to your working program by submitting through the LEO assignments folder. Do NOT upload html or image files to LEO just provide the link.

Problem Description

This final program may utilize the casino scenario described below. If you would rather create your own program for another worthy application of equal or greater difficulty please clear it with me before the Week 7 class.

The Tinian Casino has made several modifications to earlier version program requirements. A gold colored chip will now be used at the casino and represent \$500. So chip colors are



- Black = \$5
- Blue = \$20
- Red = \$50
- Green = \$100
- Gold = \$500

The USA Internal Revenue Service has modified the tax code such that US Residents will now have tax withheld from all winnings at a rate determined by the residency of the gambler. This will require customers to retain receipts when they buy chips. The customer will need to submit all receipts when they cash out at a cashier. The winnings are calculated by subtracting the receipt total from the chip value total.

The customer will be asked for their residency by showing either a passport or drivers license. If the customer is a USA, Guam, or CNMI resident they will need to provide their social security number. If the customer has lost they are simply paid cash for all chips. If the customer has won, the following information needs to be requested and calculations made to determine withholding tax based on the latest IRS regulations:

1. U.S. & Guam Residents will have 20% withholding tax on winning.
2. CNMI Residents will have 10% withholding tax on winnings.
3. All foreign residents will have no withholding tax on winnings.

The cash out is determined by subtracting the tax from the total chip value.

The program must display a set of formatted results to include all entered data to include receipts total, chip quantity by color, chip total value, winnings, tax withheld, and amount cashed out. The final results will be printed as a well formatted customer receipt.

Program Implementation Submission:

Create a JavaScript program using the file `CasinoTax_Initials.html` that will utilize either procedural program constructs or an event driven program using an HTML form for the Graphical User Interface (GUI). Make sure the final file is well documented to include comments with your name.

Due date for the implementation phase is Friday the last week class at 10pm. I need to turn in your grades Saturday so no extensions will be granted. I will give you partial credit if the program does not work so please turn in something.

Please also write a narrative before the last class describing your experience with this project and identifying any issues.