**Assignment 3 (due date: 11/4/2021)**

In this assignment you will ask to do coding in C using function, iteration, and arrays (compile and run).

Please submit your assignment into Canvas. Please submit the codes as .c files or copy them all into a single word (.doc or .docx) file but make sure that they are ready to be compiled. It is strongly recommended to write these codes in terms of functions! Please DO NOT submit pdf.

1: ***(Game of Craps)*** Write a program that runs 1000 games of craps (without human intervention) and answers each of the following questions:

a) How many games are won on the first roll, second roll, …, twentieth roll and after the twentieth roll?

b) How many games are lost on the first roll, second roll, …, twentieth roll and after the twentieth roll?

c) What are the chances of winning at craps? [*Note:* You should discover that craps is one of the fairest casino games. What do you suppose this means?]

d) What’s the average length of a game of craps?

e) Do the chances of winning improve with the length of the game?

2: ***(Total Sales)*** Use a two-dimensional array to solve the following problem. A company has four salespeople (1 to 4) who sell five different products (1 to 5). Once a day, each salesperson passes in a slip for each different type of product sold. Each slip contains:

a) The salesperson number

b) The product number

c) The total dollar value of that product sold that day

Thus, each salesperson passes in between 0 and 5 sales slips per day. Assume that the information from all of the slips for last month is available. Write a program that will read all this information for last month’s sales and summarize the total sales by salesperson by product. All totals should be stored in the two-dimensional array sales. After processing all the information for last month, print the results in tabular format with each column representing a particular salesperson and each row representing a particular product. Cross total each row to get the total sales of each product for last month; cross total each column to get the total sales by salesperson for last month. Your tabular printout should include these cross totals to the right of the totaled rows and to the bottom of the totaled columns.