C Programming

(Arrays, Pointers, Parameter Transmission)

IT 1201

Instructions:

1) Solve each problem one by one.
2) Once you are done with a problem, call the attention of your teacher to check your output.

Save as: arrToInt.c

Create a program that would include the user-defined function, **convertArrToInt()**. This function will accept an array and its size as parameters from the calling function. It would then return the integer value of the array.

For example, if the following variables were passed to **convertArrToInt**():

1	2	5	3	1

convertArrToInt() would return the integer value (i.e. **12531).**

It is main()'s task to input values for the array to be passed to **convertArrToInt()** and display the converted integer.

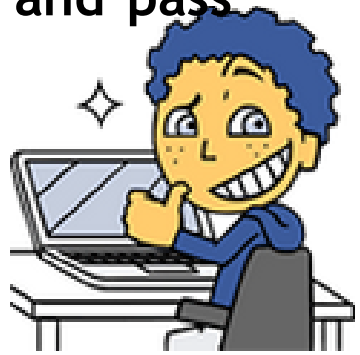
Save as: studyHabits.c

It was that time of the year where the staff from the testing and guidance center had to conduct their study habits survey for the first year students. The study habits rating is scaled from 1-10, which means, 1- POOR and 10-SUPERIOR. Once the results had been analyzed, the survey results will be forwarded to its respective teachers.

Create a program that will include the following functions:

1. displayStudyHabitsFrequencies() - accepts an array of these study habits rating. The frequency of the ratings is recorded depending on the number of times that scale appeared in the given array.
   - *NOTE: Apart from the array passed by the calling function, displayStudyHabitsFrequencies() should also use only one integer array and an index for traversing both arrays.*
2. main() - initializes the array to have the values in the sample student ratings and pass this to the displayStudyHabitsFrequencies().

It is assumed that RATING_SIZE and RESPONSE_SIZE are global variables.



Save as: studyHabits.c

RATING_SIZE 10

RESPONSE_SIZE 40

Sample Student ratings:

1, 2, 6, 4, 8, 5, 9, 7, 8, 10,

1, 6, 3, 8, 6, 10, 3, 8, 2, 7,

6, 5, 7, 6, 8, 6, 7, 5, 6, 6,

5, 6, 7, 5, 6, 4, 8, 6, 8, 10

SAMPLE OUTPUT BASED ON THE GIVEN DATA:

Rating	Frequency
1	2
2	2
3	2
4	2
5	5
6	11
7	5
8	7
9	1
10	3

Save as: reset.c

In accessing the ATM, you are only given a maximum of 3 chances to input the correct pair of account number and pin number. Once you run out of chances, the system will automatically block your account. However, you can opt to reset your pin number before you run out of chances and thus, your account can be safe from being logged off.

The main function has already been partially created. Your task is to complete the program and create the following functions:

1. **resetPIN()** – resets the pin number to the default pin which is 1234.
   - *NOTE: Use implicit return.*
2. **matchAccPIN()** – checks if you reset your pin number or not. If no, the function will check if the account number is 32767 and pin number is 4128. If yes, the function will check if the account number is 32767 and pin number is 1234. The function should return 1 if both are correct, 2 if only the account number is correct, and 3 if none of the inputs are correct.

```c
#include<stdio.h>
#include<conio.h>
/* function prototypes here */
int main(void)
{
    int chances = 3, acc, pin, catch;
    char choice = 'N';
    do{
        printf("Enter account #: "); scanf("%d", &acc);
        printf("Enter pin #: "); scanf("%d", &pin);
        if(pin > 999 && pin < 10000){  /* checks if the pin is a 4-digit number */
            catch = _____; /* func call to matchAccPin() */
            if(catch == 1){
                printf("You have successfully accessed your account!\n");
                break;
            }else if(_____){
                printf("Do you want to reset your PIN? (Y/N): ");
                fflush(stdin);
                scanf("%c", &choice);
                if(choice == 'Y'){
                    _____; /* func call to resetPIN() */
                }
            }else{
                printf("\nInvalid account number and PIN");
            }
        }else{
            printf("The inputted pin number is not a valid pin number.\n");
        }
    _____;
    }while(chances > 0 || catch!= 3);
    if(chances == 0 && choice != 'Y'){
        printf("\nYour account has been blocked!");
    }
    getch();
    return 0;
}
```

End ☺