Homework #5

[ECE10002] C Programming

Mission

- Solve Problem 1, 2, 3 in C language.
- Submit through Hisnet
  - Due date: PM11:00, Nov. 27th (Mon.)
  - Submit a zip file including three files: hw5_1.c, hw5_2.c, hw5_3.c
  - Use the skeleton codes for Problem 2, and 3.
- All variables, except for array variables, should be initialized properly.

  Ex) int i = 0, *p = NULL; // Okay!

  int i, *p; // Uninitialized variables can be penalized
- Every program should contain algorithm in pseudo code.
  - Use comments to describe each step of the algorithm

Problem 1

- Write a program that reads a series of integers numbers from the user, and then print them in reverse order.
  - Stop reading if the user types EOF.
  - Assume the user can input maximum 10 numbers.

➔ Use an array of size 10 to store numbers.

Ex) hw5_1.exe

Input integer numbers. (Type CTRL-Z to quit.)

10

30

40

<CTRL-Z>

Numbers in reverse order: 40 30 10

Problem 2

- Write a program that does the followings.
  - Declare a 2D array *text*, each entry corresponds to each coordinates of screen.
    - char text[ROW][COLUMN]; // ROW = 24, COLUMN = 80
  - Fill *text* with space characters.
  - Build a function to draw a cross at the center of *text*.
    - Vertical line: (40, 5) ~ (40, 20)
    - Horizontal line: (30, 10) ~ (50, 10)
  - Fill the screen with random characters. – provided.
  - Build a function that displays the contents of *text* vertically from center.

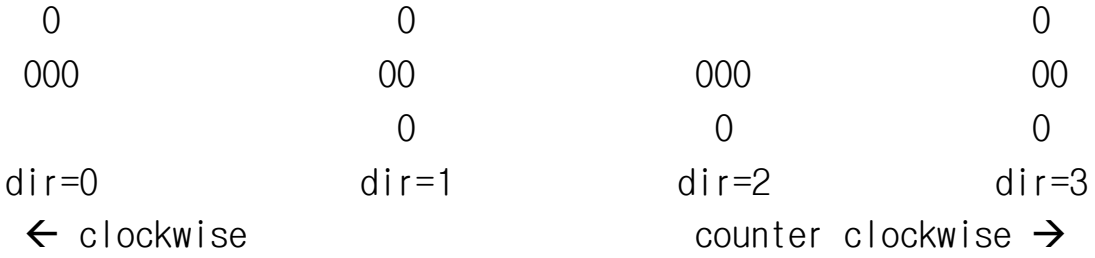
Problem 2


C:₩Documents and Settings₩김인중₩My Documents₩교육자료₩ECE102 C Pro...
계속하려면 아무 키나 누르십시오 . . .

Problem 2 – Advanced Problem

Problem 3

- Write a program that displays the following block and move or rotate according to the following keys
  - Move: i: up, j: left, k: down, l: right
  - Rotate: u: counter clockwise, o: clockwise



  - Rotating counter clockwise: dir = (dir + 1) % 4
  - Rotating clockwise: dir = (dir + 3) % 4

Console Interface Functions

- Function to clear the screen

```
void clrscr(void)              // clear the screen
{
    COORD Cur= {0, 0};
    unsigned long dwLen = 0;

    FillConsoleOutputCharacter(GetStdHandle(STD_OUTPUT_HANDLE), ' ', 80*25, Cur,
    &dwLen);
}
```

- Function to move the cursor

```
void gotoxy(int x, int y)      // move cursor to (x, y)
{
    COORD Pos = {x - 1, y - 1};

    SetConsoleCursorPosition(GetStdHandle(STD_OUTPUT_HANDLE), Pos);
}
```

Note! You should include windows.h to use these functions.