Files to submit: combs.s

Time it took Matthew to complete: 1.5 hours (Start early. This is a time consuming problem.)

- All programs must compile without warnings when using the -Wall and -Werror options
- Submit only the files requested
  - Do **NOT** submit folders or compressed files such as .zip, .rar, .tar, .targz, etc
- If submitting in a _____ _____ be please make sure to mark your partner.
  - Only one of _____ _____
- Your program mu_____ _____ exactly to receive credit.
  - Make sure th_____ _____ tput match mine exactly.
  - Easiest way t_____ _____ nd paste them
- All input will be _____ _____ herwise
- Print all real num_____ _____ places unless otherwise stated
- The examples provided in the prompts do not represent all possible input you can receive.
- All inputs in the examples in the prompt are underlined
  - You don't have to make anything underlined it is just there to help you differentiate between what you are supposed to print and what is being given to your program
- If you have questions please post them on Piazza

Write a program called **combs.s** that generates all the possible combinations of a set of items of a given size.

1. Your program should be callable from C and have the following signature
   1. `int** get_combs(int* items, int k, int len)`
2. This function should generate all possible combinations of items taken k at a time and return a 2-D array where each row contains one combination
   1. The combinations should be added to the 2-D array in their natural order
   2. This 2-D array should be dynamically allocated
   3. As a hint you may want to develop a helper function that actually computes the combinations
3. You have been given a main.c that will get the inputs and call your function
   1. Your function will be called from this file
   2. You will also be given useful functions in main.c that you can call from your program
4. You have also been given a makefile that should compile your program. Your program **MUST** be able to be compiled by this makefile.
   1. For those of you running 64 bit versions of Linux you may need to install the 32 bit binaries.
   2. The command to install on Ubuntu is: `apt-get -y install gcc-multilib`

4. Examples

1.
```
How many items do you have: 5
Enter your items: 1 2 3 4 5
Enter k: 3
1 2 3
1 2 4
1 2 5
1 3 4
1 3 5
1 4 5
2 3 4
2 3 5
2 4 5
3 4 5
```

2.
```
How many items do you have: 5
Enter your items: 1 2 3 4 5
Enter k: 4
1 2 3 4
1 2 3 5
1 2 4 5
1 3 4 5
2 3 4 5
```