Exam 1

I. Assume you have two files, "main.c" and "support.c", write the commands to compile and link the two files together with proper flags.
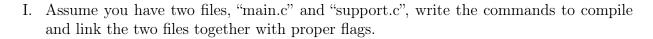
II. Answer the following questions regarding Physical Address Space and Virtual Address Space

    A. Define Physical Address Space and Virtual Address Space

    B. What are the benefits of using Virtual Address Space over Physical Address Space in a process?

III. The following question relates to the program translation process in C

    A. Put the following in order Compilation, Preprocessing, Linking, Assembly

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B. Define each step of program translation

IV. The following question relates to the memory segments in a program.

A. Draw the diagram of the memory segment in C

B. For each of the memory segments, define what is stored in them.
    i. Heap _____
    ii. Data _____
    iii. Text _____
    iv. Stack _____

V. Answer the following questions regarding structs

A. Create a struct that meets the following specifications in order.
    - Must be named store
    - Must have an id of type long
    - Must have a name of type char array of size 20
    - Must have an int for number of employees

B. What is the largest length string that can be held in name?

C. Create an instance of store with any values you like.

D. What is the size of store?

VI. Below implement the strlen function without using any functions from string.h