1 Which one has more? (30 points)

Write a C function (not a main program)
`int whichOne(char C, char *s1, char *s2)`
that does all the following

i. Confirms that C is a digit. If C is not a digit, `whichOne` prints an error message on *stderr* and executes $exit(-1)$, which terminates the run. Note that it is not required that $s1$ and $s2$ contain only digits.

ii. If C is a digit that occurs more often in string $s1$ than it does in string $s2$, *whichOne* prints (on *stdout*) "string one is the one" and returns the number of occurrences of C in $s1$.

iii. If C is a digit that occurs more often in string $s2$ than it does in string $s1$, *whichOne* prints "string two is the one" and returns the number of occurrences of C in $s2$.

iv. If C is a digit that occurs equally often in string $s2$ and in string $s1$, *whichOne* prints "neither string is the one" and returns 0.

2 Symmetric Difference (40 points)

Write a C program (a function called main). It's header line is
`int main (int argc, char *argv[])`
This program does the following

i. Two arguments:
When it is run it first checks that $argc == 3$ and terminates with an error message if this is not true.

ii. First except the second:
It prints all the characters in the first argument argv[1] that are not in the second argument argv[2].

iii. Second except the first:
On the next output line it prints all the characters in the second argument that are not in the first argument.

iv. Don't worry about spaces:
You may assume neither argument contains a space

v. A sample run:
./a.out computer Systems
copur
Syss

vi. Another sample run:
./a.out aaabbbccc abcdd

dd

3 Multiway Copy (30 Points)

Write a C function (not a main program)

```
char *mcopy(char *s, int n)
```

mcopy receives two arguments a string s and a count n. It computes and returns a new string that is the concatenation of n copies of s.

For example if "$s = 123def$" $mcopy(s, 3)$ returns "$123def123def123def$".