

# In Class Assignment

4/2

Implement a program that dynamically allocates memory for a string based on user input, reverses the string, and then frees the allocated memory.

Requirements:

1. Prompt the user to enter a string. You do not know the size of the string ahead of time - it could be any length.
2. Dynamically allocate memory for the string based on the user's input. Start with a small capacity, and double the capacity each time it is filled.
3. Implement a function to reverse the string. This function should also use dynamic memory allocation.
4. Print out the original string and the reversed string.
5. Free the memory allocated for both the original string and the reversed string when you're done with them.
6. You should not use any global variables.
7. You should not use any libraries other than `stdio.h` and `stdlib.h`.

An example is shown below:

```
Enter a string: Hello world this is an example string!  
Reversed string: !gnirts elpmaxe na si siht dlrow olleH
```

Please use the skeleton code provided in Discord.

Please submit the `.c` file along with a makefile to the Unix server under a folder named "ClassAssignment4-2"