1) (10 pts) DSN (Dynamic Memory Management in C)

Suppose we would like to create an array to store our Must Watch TV list. Currently our list is stored in a text file with the name of each TV show on a line by itself. The name of each show consists of only letters and underscores and doesn't exceed 127 characters. Write a function called makeTVList that reads these names from a file, allocates memory dynamically to store the names, stores them in a two-dimensional character array and returns a pointer to that array. Your function should take 2 parameters: a pointer to the file and an integer indicating the number of TV shows in the file. It should return a pointer to the array of shows. Be sure to allocate memory for the array dynamically and only allocate as much space as is needed. Namely, do not allocate 128 characters to store each show name. Instead dynamically allocate an appropriate number of characters as necessary. Use any necessary functions from string.h.

```
char ** makeTVList (FILE *ifp, int numShows) {

    char buffer[128];
    char **TVList = NULL;
    int i;

    TVList = malloc(numShows * sizeof(char *));          //2 pts

    for(i=0; i<numShows; i++) {                          //1 pt
        fscanf(ifp, "%s", buffer);                       //1 pt
        TVList[i] = malloc((strlen(buffer)+1)*(sizeof(char)));//3 pts
        strcpy(TVList[i], buffer);                       //2 pts
    }

    return TVList;                                       //1 pt
}
```