***Goal:***

**Manipulation of WAV audio files:**

(1) Create a linked list of segments.

(2) Combine the segments in the linked list into a single audio recording.

***Objective:*** Developing experience with C memory allocation and linked lists.

***Download:*** Download and unpack file lab9.zip from Camino. It contains a partially completed program (main9.c), a pre-compiled library file (libwav.a) for manipulating WAV audio files, and an associated include file (wav.h).

***Assignment:*** The provided program (main9.c) requires two filenames on the command line; the first is the input file and the second is the output. The program (1) makes copies of the 1st, 2nd and last one-third of the input, (2) builds a list of the segments, (3) assembles them into a single segment, and (4) stores it to the output file. If done correctly, the output file should be an exact copy of the input file.

You are to complete the source code for the following three functions that are located within the provided main program (main9.c):

```
LIST *CreateList(AUDIO *segment1, AUDIO *segment2, AUDIO *segment3) ;
```

Creates a linked list containing three audio segments and returns a pointer to the list.

```
AUDIO  *CombineSegments(LIST *list) ;
```

Combines all the audio segments in a linked list into a single segment. Returns a pointer to a new memory representation of the combined segment.

***Compilation:*** Compile and link your program using the following command line:

**gcc –o lab9 main9.c -L. -lwav**

***Execution:*** Execute your program using the following command syntax:

**./lab9 *src-file* *dst-file***

***When Done:*** Demonstrate proper operation of your program to the teaching assistant and upload the completed source code for file main9.c to the lab drop box on Camino. Do not upload any other files.