

The total scores for 100 students who took the EEG405 course (Classical Control Systems) have been saved in a file, scores.txt.

The file is available in the Project 2 folder. A few lines of it are displayed below.

```
Amiya,Holder,80
Killian,Taylor,67
Ralph,Carlson,55
Mollie,Haas,70
```

The entries have the format:

```
first_name,last_name,score
```

Write a program which will work on this file and create a new file, grades.txt, which will contain the grade letter and write data in this format:

```
first_name,last_name,score,grade_letter
```

The above sample becomes

```
Amiya,Holder,80,A
Killian,Taylor,67,B
Ralph,Carlson,55,C
Mollie,Haas,70,A
```

Remember to close all files when done.

Hint:

Create a function `get_grade(score)` which returns the corresponding grade letter for the score. The function returns “-” if the score is invalid.

Open two files, scores.txt in read mode and grades.txt in write mode. Python will create the grades.txt file if it does not exist.

Loop through every line in scores.txt, strip off the newline character at the end using `line.strip("\n")`, write into grades.txt, and then split into a list, as shown below:

```
arr = ln.split(",")
```

The above line tells Python to split the string `ln`, which contains comma separated values, into a list, using the “,” character. Hence, if `ln` was previously equal to “Hello,World”, `arr` becomes `["Hello","world"]`.

The last element of the array will be the grade. Pass it into `get_grade(score)`, and add the result to `grades.txt`, with a comma in front and a new line after.

When the loop is done, close all files. Closing files is good programming practice, as the computer frees RAM space by removing the file from memory when it is no longer needed. Not closing files can cause memory leaks, and in environments with very limited memory or large files, can be a serious issue!