

# Lab09 – Files and Strings

Enrique Saracho Felix

100406980

CPSC 1150

23/07/2023

## Program StudentScores

**File name:** StudentScores.java

**Purpose:** Keeps track of student records by giving the user three options, to create a new file, search in the active file, and add more records.

**Packages:** javax.swing.JOptionPane  
java.io.File  
java.io.FileWriter  
java.io.PrintWriter  
java.util.Scanner

**Input:** An integer number between 1 and 4 to pick the main options.  
A string containing a new file name if option 1 is selected.  
A string containing a key to look for in the file if option 2 is picked.  
Two strings, one for the student's name, and another for the score, if option for option 3.

**Output:** The output consists of many messages answering the options picked by the user. And files created or modified in the same directory as the program.

## Pseudocode:

Algorithm *StudentScores*

START

set **activeFile** to global File object of name "default\_scores.txt"

(main)

```
set option as integer
do {
    read option
    if option is 1
        call createFile()
    if option is 2
        call searchInFile()
    if option is 3
        call addRecord()
    if option is 4
        print "Exiting program"
    else
        print "Invalid input"
} while option is not 4
```

**(createFile)**

```
set flag as false
do {
    read newName
    activeFile = new File object of name newName
    if activeFile exists
        print "File already exists"
    else {
        if ( create new file activeFile ) returns true {
            print "File created successfully"
            flag = true
        } else {
            print "Failed to create file"
        }
    }
} while flag is false
```

**(searchInFile)**

```
set and read key as string
if the program is not able to read activeFile
    print "Permission to read from file denied"

set result and student as empty strings
while there is text in activeFile {
    set token as the next piece of text
    if isName(token) returns true
        student += token + " "
    if isScore(token) returns true {
        student += token
        if hasKey(student, key) returns true
            result += student + new line
        student = ""
    }
}
print result
```

**(isName, parameter: token(string))**

```
for each character in token {
    if (character is between 'A' and 'Z') or (character is between 'a' and 'z')
        return true
}
return false
```

**(isScore, parameter: token(string))**

```
if token[0] is a digit
    return true
else
```

return false

(**hasKey**, parameters: **student**(string), **key**(string))

set **studentLower** = **student**(uppercase)

set **keyLower** = **key**(uppercase)

if **studentLower** contains **keyLower**

return true

else

return false

(**addRecord**)

set **name** and **score** as strings

read **name**


read **score**

print **name** + " " + **score** in **activeFile**

END *StudentScores*

**Test run(s):**


Input

 Enter 1 to create a new course source file.  
Enter 2 to search into an existing course source file.  
Enter 3 to add more records to an existing course scores file.  
Enter 4 to quit the program.

1

OK Cancel


Input

 Enter new file name:

new\_file.txt


OK Cancel

Message


 File created successfully.

OK


Input

 Enter 1 to create a new course source file.  
Enter 2 to search into an existing course source file.  
Enter 3 to add more records to an existing course scores file.  
Enter 4 to quit the program.


Message

 **Search results:**  
Daisy Jessica 67  
GLYNN CARYS 34  
HANNAH STACEY PUTHOTA 89  
J FREDYN VIBHAV 79  
Kyra Jain 68.45  
Lynton Diaz 96.67  
Manya M Aaglecha 69  
Prithvi RAYSHOD 86  
REIYAA 82  
MOHAMED RAYSHOD 73  
Sanaya Shaw 96  
SHAUN TONY NORBERT FERNANDO 79  
Kyra Jain 73  
Y Darshan Narayanan 77  
YASHITA RAM AILDASANI 81.5  
R SANDILYAN 59


Input


 **Search:**

Input


 Enter 1 to create a new course source file.  
Enter 2 to search into an existing course source file.  
Enter 3 to add more records to an existing course scores file.  
Enter 4 to quit the program.

Input


 Enter student name:

 Enter student name:

Input

 Enter 1 to create a new course source file.  
Enter 2 to search into an existing course source file.  
Enter 3 to add more records to an existing course scores file.  
Enter 4 to quit the program.

Message

 Exiting program