ELP780

Software Lab

Aghil Sabu

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A report presented for the assignment on
Assignment 8 - Python and Github

Electrical Engineering
IIT Delhi
India
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Contents

1 Problem Satement 1

1.1 Problem Statement

You have a file with the contents of players' names and their scores. Create a programme using Lex(flex) to calculate total runs scored by the players. Also calculate their averages. Sample File Format is as below
Input Format:

$$./ps1 < input_file >$$

Output Format:

$$< player_name >< Total_run >< average >$$

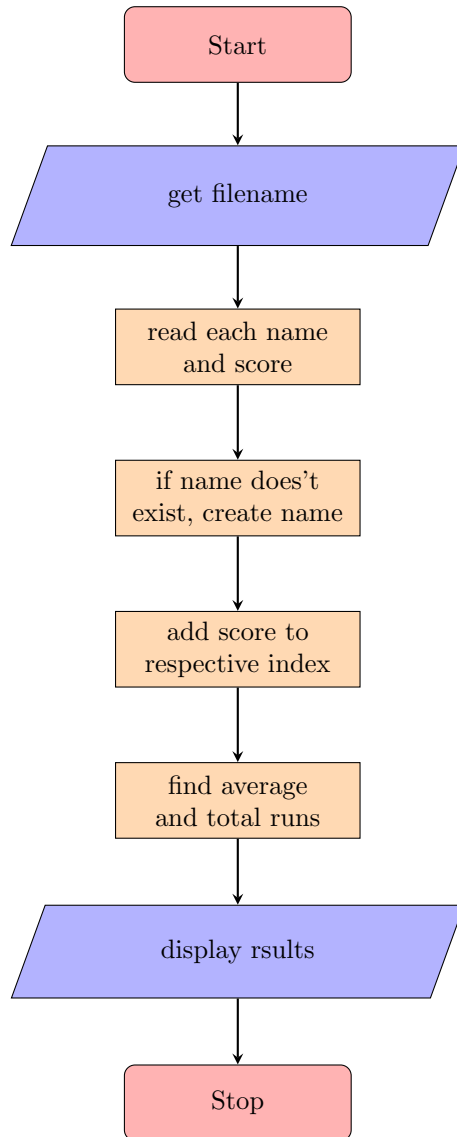## 1.2 PS1 algorithm

- Read filename from user

- read words and numbers separately

- for each ney name if name does't already exist, add name

- add score for respective name

- calculate sum and average

- display rsults in the required format

1.3   PS1 Flow Chart

```
          ┌─────────────┐
          │    Start    │
          └─────────────┘
                 │
                 ▼
        ╱─────────────────╲
       ╱   get filename    ╲
      ╱─────────────────────╲
                 │
                 ▼
          ┌─────────────┐
          │ read each name │
          │   and score   │
          └─────────────┘
                 │
                 ▼
          ┌─────────────┐
          │ if name does't │
          │ exist, create name │
          └─────────────┘
                 │
                 ▼
          ┌─────────────┐
          │ add score to │
          │ respective index │
          └─────────────┘
                 │
                 ▼
          ┌─────────────┐
          │ find average │
          │ and total runs │
          └─────────────┘
                 │
                 ▼
        ╱─────────────────╲
       ╱  display rsults   ╲
      ╱─────────────────────╲
                 │
                 ▼
          ┌─────────────┐
          │    Stop     │
          └─────────────┘
```

1.4   PS1 Solution-Code

1.5 PS1 Output Screenshots

```
$ make ps1
lex ps1.l
gcc -o ps1.out lex.yy.c
./ps1.out ps1.txt
Rohit 101 50.500000
Virat 200 100.000000
Yuvi 52 52.000000
```
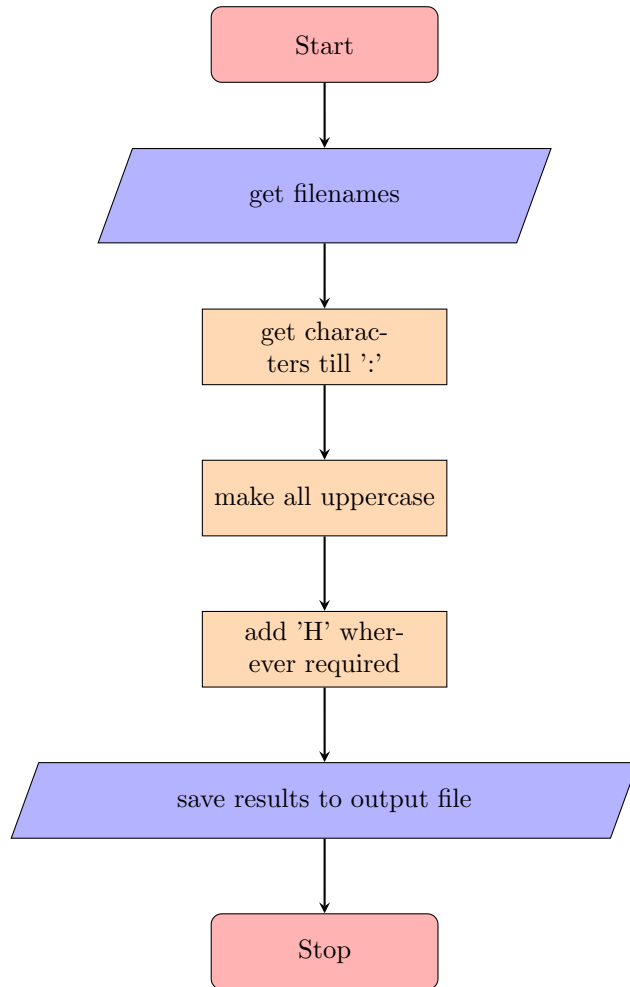
2   Problem Satement 2

A 8085 assembler is designed in a way that it takes input assembly source code instructions in all capital letters and numbers in hexadecimal format suffixed by H. You have to create preprocessor for assembler that will translate any 8085 assembly code into full capital letters and all numerals into hexadecimal format suffixed by H. Use lex(flex) and Yacc(bison).

2.1   PS2 algorithm

- Get filenames from user

- for each line get all characters before colon ':'

- make all uppercase

- add hexadecimal 'H' wherever required

- save result to output file

2.2 PS2 Flow Chart

```
┌─────────────────┐
│      Start       │
└─────────────────┘
         │
         ▼
  ╱───────────────╲
 ╱  get filenames   ╲
 ╲                  ╱
  ╲───────────────╱
         │
         ▼
┌─────────────────┐
│   get charac-    │
│   ters till ':'  │
└─────────────────┘
         │
         ▼
┌─────────────────┐
│ make all uppercase│
└─────────────────┘
         │
         ▼
┌─────────────────┐
│   add 'H' wher-  │
│   ever required  │
└─────────────────┘
         │
         ▼
  ╱────────────────────────╲
 ╱  save results to output file ╲
 ╲                            ╱
  ╲────────────────────────╱
         │
         ▼
┌─────────────────┐
│      Stop        │
└─────────────────┘
```

2.3   PS2 Solution-Code

2.4   PS2 Output

2.4.1   input file

2.4.2   output file

3 makefile

3.1 makefile code

```
all: ps1 ps2
ps1:
lex ps1.l
gcc -o ps1.out lex.yy.c
./ps1.out ps1.txt
ps2:
# yacc ps2.y
lex ps2.l
# cc lex.yy.c y.tab.c -o ps2.out
gcc -o ps2.out lex.yy.c
./ps2.out ps2.txt output.txt
# test2:
#  lex test2.l
#  yacc test2.y
#  cc lex.yy.c test2.tab.c -o test2.out
#  ./test2.out

clean:
rm *.out
```

3.2 makefile output

4 GIT

4.1 GIT Commit Screenshots

```
commit 7e5b94319220cb653e124c3478cdc291ac656c86
Author: Aghil Sabu <aghilsabu@gmail.com>
Date:   Wed Sep 11 11:15:20 2019 +0530

    test program created for yaac

commit ff6181ee1be0b8eaaff9eede5cca037673e46e2c
Author: Aghil Sabu <aghilsabu@gmail.com>
Date:   Wed Sep 11 10:26:45 2019 +0530

    added comments to PS1

commit cd567740072a48c352555b58aa2ecc315911356a
Author: Aghil Sabu <aghilsabu@gmail.com>
Date:   Wed Sep 11 10:20:28 2019 +0530

    Ps1 basic structure created

commit 4a68b208805773de1eb656dff5b0c7bccafb44b7
Author: Aghil Sabu <aghilsabu@gmail.com>
Date:   Wed Sep 11 09:51:29 2019 +0530

    ran a test program

commit beb6d2a5f7b16c9c6dec389db5bdae450a39257d
Author: Aghil Sabu <aghilsabu@gmail.com>
Date:   Wed Sep 11 09:27:31 2019 +0530

    Initial Commit
```