

Labwork 9 – AWK Log Processing

Practice filtering and aggregating structured text with AWK. Each short script should start with `#!/bin/awk -f` and be executable (`chmod +x`). Run with `awk -f your.awk <inputfile>`. Work in a scratch directory unless told otherwise.

Due: End of lab hour.

Inputs to Download or Create

- **std.txt**: login records with fields `username, name, last_name, date, time` (date format `day/month/year`; usernames start with `std` for students and `ins` for instructors).
 - **library.txt**: book checkouts with fields `bookID, title, category, checkout_date, user_type` (date format `day/month/year`; `bookID` starts with `FIC` or `NON`; `user_type` is `STD` or `FAC`). Use the example lines given in the prompt to sanity-check parsing.
 - **gym.txt**: facility entries with fields `memberID, name, membership_type, entry_date, activity_type` (date format `day/month/year`; `memberID` starts with `STD` or `PRO`; `activity_type` is one of `GYM, YOGA, SWIM`).
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Tasks

Part A — System Logins (**std.txt**)

1. Count how many times students and instructors logged in during calendar year 2017.
2. Output exactly:

Students: X
Instructors: Y

3. Command to test: `awk -f logins.awk std.txt`

Part B — Library Checkouts (**library.txt**)

1. For March 2024 only (`*/03/2024`), count fiction vs non-fiction books borrowed by students and faculty.
2. Output format:

Students borrowed:
Fiction Books: X
Non-Fiction Books: Y
Faculty borrowed:
Fiction Books: Z
Non-Fiction Books: W

3. Command to test: `awk -f library.awk library.txt`

Part C — Gym Activity Usage (`gym.txt`)

1. For February 2024 only (`*/02/2024`), count student vs professional visits by activity type.

2. Output format:

```
Student Activities:  
GYM: X  
YOGA: Y  
SWIM: Z  
Professional Activities:  
GYM: A  
YOGA: B  
SWIM: C
```

3. Command to test: `awk -f gym.awk gym.txt`

Hints

- Use `BEGIN { FS="," }` to split CSV-style fields.
 - Extract the month and year with `split($4, d, "/")` and check `d[2]` (month) and `d[3]` (year).
 - Match prefixes with `index(field, "STD")==1` style checks for simple classification.
 - Print totals in `END` to keep the output clean.
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Deliverables

- Three AWK scripts (`logins.awk`, `library.awk`, `gym.awk`) with the correct shebang and any small inline comments you need.
- Sample runs showing the expected output formats above.
- Submission naming: package as `nameLastNameID_lab9` and upload via YULEARN.