

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.

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.