Creating file to Task 1-7

```
lopezdj@osboxes:~/Lab.Exercises/Laboratory.6$ cat <<EOF > system.log
> 2024-10-01 12:30:45 CPU Usage:35% Disk Usage:60% Memory Usage:70%
> 2024-10-01 12:35:45 CPU Usage:80% Disk Usage:75% Memory Usage:90%
> 2024-10-01 12:40:45 CPU Usage:90% Disk Usage:85% Memory Usage:95%
> 2024-10-01 12:45:45 CPU Usage:50% Disk Usage:55% Memory Usage:60%
> 2024-10-01 12:50:45 CPU Usage:65% Disk Usage:70$ Memory Usage:80%
> EOF
lopezdj@osboxes:~/Lab.Exercises/Laboratory.6$ cat <<EOF > users.log
> 2024-10-01 12:30:45 user1 login
> 2024-10-01 12:32:45 user2 login
> 2024-10-01 12:35:00 user1 logout
> 2024-10-01 12:40:20 user3 login
> 2024-10-01 12:42:10 user2 logout
> 2024-10-01 12:45:50 user3 logout
> EOF
lopezdj@osboxes:~/Lab.Exercises/Laboratory.6$ cat system.log
2024-10-01 12:30:45 CPU Usage:35% Disk Usage:60% Memory Usage:70%
2024-10-01 12:35:45 CPU Usage:80% Disk Usage:75% Memory Usage:90%
2024-10-01 12:40:45 CPU Usage:90% Disk Usage:85% Memory Usage:95%
2024-10-01 12:45:45 CPU Usage:50% Disk Usage:55% Memory Usage:60%
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lopezdj@osboxes:~/Lab.Exercises/Laboratory.6$ cat users.log
2024-10-01 12:30:45 user1 login
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2024-10-01 12:35:00 user1 logout
2024-10-01 12:40:20 user3 login
2024-10-01 12:42:10 user2 logout
2024-10-01 12:45:50 user3 logout
lopezdj@osboxes:~/Lab.Exercises/Laboratory.6$ _
```

```
lopezdj@osboxes:~/Lab.Exercises/Laboratory.6$ awk '{sum +=$5;count++} END {print "Average CPU Usage:" sum/count "%"}' system.log
Average CPU Usage:64%
lopezdj@osboxes:~/Lab.Exercises/Laboratory.6$ awk '{if($11 > max) {max = $11; time = $1 " " $2}} END {print "Peak Memory Usage:" max" at " time}' system.log
Peak Memory Usage:95% at 2024-10-01 12:40:45
lopezdj@osboxes:~/Lab.Exercises/Laboratory.6$
```

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lopezdj@osboxes:~/Lab.Exercises/Laboratory.6$ awk '{sum +=$5;count++} END {print "Average CPU Usage:" sum/count "%"}' system.log
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Peak Memory Usage:95% at 2024-10-01 12:40:45
lopezdj@osboxes:~/Lab.Exercises/Laboratory.6$ awk '$8 > 70 {sum+= $8} END {print "Total Disk Usage (exceeding 70%): " sum "%"}' system.log
Total Disk Usage (exceeding 70%): 230%
lopezdj@osboxes:~/Lab.Exercises/Laboratory.6$ _
```

```
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lopezdj@osboxes:~/Lab.Exercises/Laboratory.6$ awk '$8 > 70 {sum+= $8} END {print "Total Disk Usage (exceeding 70%): " sum "%"}' system.log
Total Disk Usage (exceeding 70%): 230%
lopezdj@osboxes:~/Lab.Exercises/Laboratory.6$ awk '
/login/ {login[$3] = $2}
/logout/{ split(login[$3],t1,":"); split($2,t2,":"); diff = (t2[1] * 60 + t2[2]) - (t1[1] * 60 + t1[2]); print $3 "session duration:" diff "minutes" }' users.lo
g
user1session duration:5minutes
user2session duration:10minutes
user3session duration:5minutes
lopezdj@osboxes:~/Lab.Exercises/Laboratory.6$ _
```

```
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g
user1session duration:5minutes
user2session duration:10minutes
user3session duration:5minutes
lopezdj@osboxes:~/Lab.Exercises/Laboratory.6$ awk '
> FNR==NR{
> time = $1" "$2
> cpu_usage[time] = $0
> next}
> {
> time = $1" "$2
> if(time in cpu_usage) {
> print cpu_usage[time]}}' system.log users.log
2024-10-01 12:30:45 CPU Usage: 35% Disk Usage: 60% Memory Usage: 70%
lopezdj@osboxes:~/Lab.Exercises/Laboratory.6$ _
```

```
lopezdj@osboxes:~/Lab.Exercises/Laboratory.6$ awk '{if($11 > max) {max = $11; time = $1 " " $2}} END {print "Peak Memory Usage:" max" at " time}' system.log
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cpu_usage[time] = $0
next}
{
time = $1" "$2
if(time in cpu_usage) {
print cpu_usage[time]}}' system.log users.log
2024-10-01 12:30:45 CPU Usage: 35% Disk Usage: 60% Memory Usage: 70%
lopezdj@osboxes:~/Lab.Exercises/Laboratory.6$ awk '
BEGIN {
print "User\tLogins\tTotal Session Time(minutes)"
}
{
user = $3
time = $1" "$2
cmd = "date -d\"" time"\" +%s"
cmd | getline timestamp

if ($4 == "login"){
logins[user]++
login_time[user] = timestamp
} else if ($4 == "logout") {
if (user in login_time){
session_time = (timestamp - login_time[user]) /60
total_time[user] += session_time
delete login_time[user]
}
}
} END {
for (u in logins) {
printf "%s\t%d\t%d\n",u, logins[u], total_time[u]
} }' users.log
User    Logins  Total Session Time(minutes)
user1   1       4
user2   1       9
user3   1       5
lopezdj@osboxes:~/Lab.Exercises/Laboratory.6$ _
```

```
print "User\tLogins\tTotal Session Time(minutes)"
}
{
user = $3
time = $1" "$2
cmd = "date -d\"" time"\" +%s"
cmd | getline timestamp

if ($4 == "login"){
logins[user]++
login_time[user] = timestamp
} else if ($4 == "logout") {
if (user in login_time){
session_time = (timestamp - login_time[user]) /60
total_time[user] += session_time
delete login_time[user]
}
}
} END {
for (u in logins) {
printf "%s\t%d\t%d\n",u, logins[u], total_time[u]
} }' users.log
User    Logins  Total Session Time(minutes)
user1   1       4
user2   1       9
user3   1       5
lopezdj@osboxes:~/Lab.Exercises/Laboratory.6$ awk '
/CPU Usage:/ {gsub("%","",$3); cpu = $3}
/Disk Usage:/ {gsub("%","",$5); disk = $5}
/Memory Usage:/ {gsub("%","",$6); memory = $6}
cpu > 80 && disk > 80 && memory > 80 {print "Overload at:",$1 "" $2}' system.log
Overload at: 2024-10-0112:40:45
lopezdj@osboxes:~/Lab.Exercises/Laboratory.6$ _
```

Final Summary

```
} else if ($4 == "logout") {
if (user in login_time){
session_time = (timestamp - login_time[user]) /60
total_time[user] += session_time
delete login_time[user]
}
}
} END {
for (u in logins) {
printf "%s\t%d\t%d\n",u, logins[u], total_time[u]
} }' users.log
User    Logins  Total Session Time(minutes)
user1   1       4
user2   1       9
user3   1       5
lopezdj@osboxes:~/Lab.Exercises/Laboratory.6$ awk '
/CPU Usage:/ {gsub("%","",$3); cpu = $3}
/Disk Usage:/ {gsub("%","",$5); disk = $5}
/Memory Usage:/ {gsub("%","",$6); memory = $6}
cpu > 80 && disk > 80 && memory > 80 {print "Overload at:",$1 "" $2}' system.log
Overload at: 2024-10-0112:40:45
lopezdj@osboxes:~/Lab.Exercises/Laboratory.6$ awk '
BEGIN {
print "User\tLogins\tTotal Session Time(minutes)"
}
{
user = $3
time = $1" "$2
cmd = "date -d\"" time"\" +%s"
cmd | getline timestamp

if ($4 == "login"){
logins[user]++
login_time[user] = timestamp
} else if ($4 == "logout") {
if (user in login_time){
session_time = (timestamp - login_time[user]) /60
total_time[user] += session_time
delete login_time[user]
}
}
} END {
for (u in logins) {
printf "%s\t%d\t%d\n",u, logins[u], total_time[u]
} }' users.log
User    Logins  Total Session Time(minutes)
user1   1       4
user2   1       9
user3   1       5
lopezdj@osboxes:~/Lab.Exercises/Laboratory.6$
```