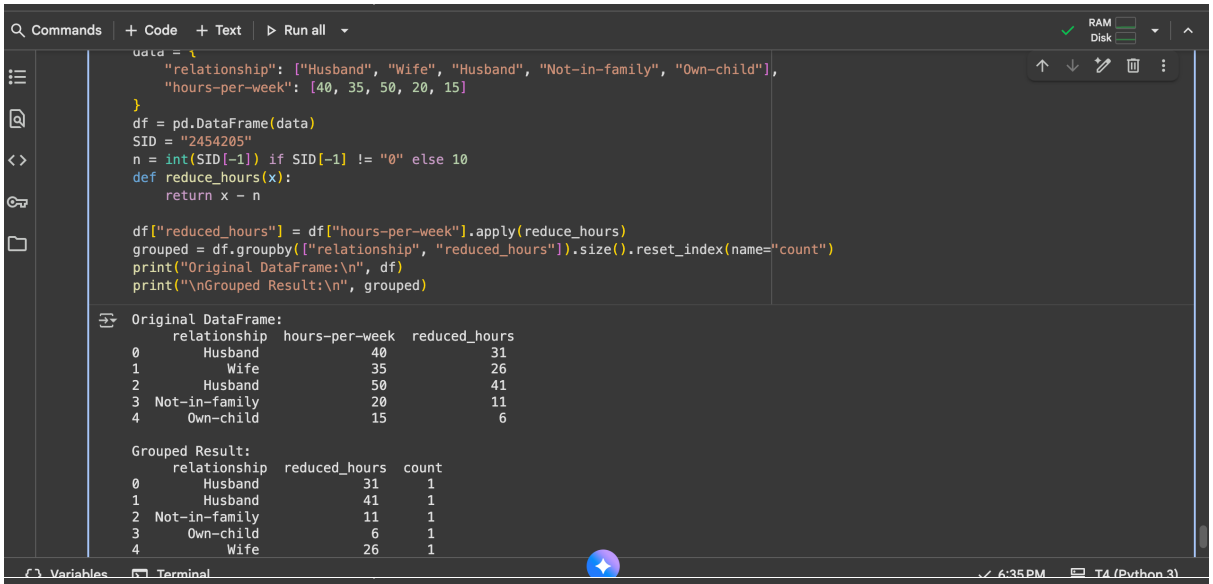
Log Book:-
Week 2:-

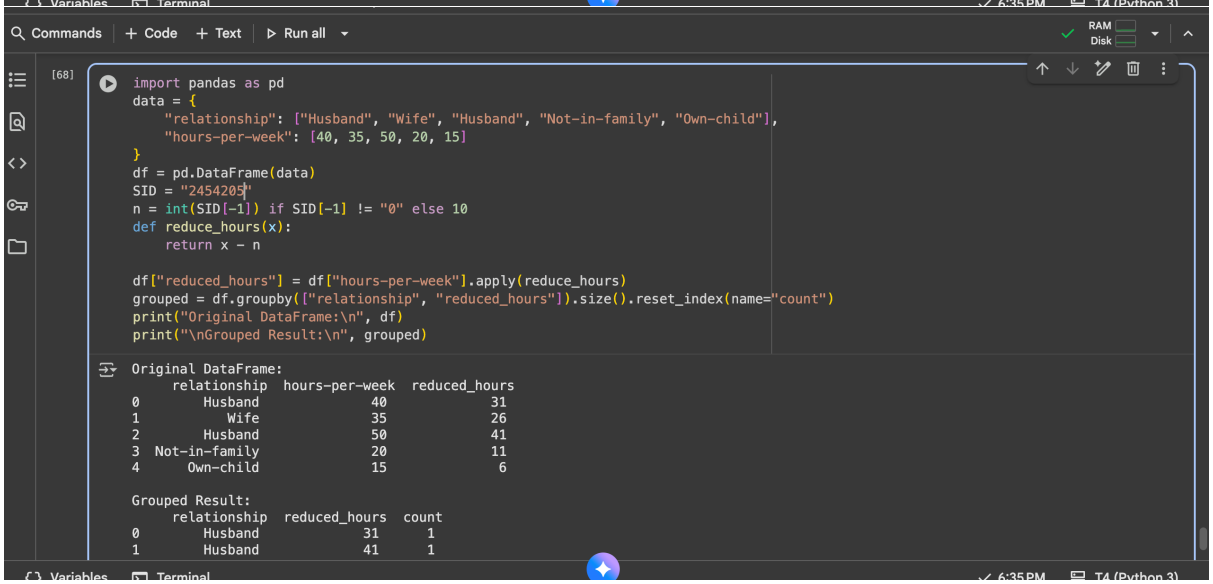


```
import pandas as pd
data = {
    "relationship": ["Husband", "Wife", "Husband", "Not-in-family", "Own-child"],
    "hours-per-week": [40, 35, 50, 20, 15]
}
df = pd.DataFrame(data)
SID = "2454205"
n = int(SID[-1]) if SID[-1] != "0" else 10
def reduce_hours(x):
    return x - n

df["reduced_hours"] = df["hours-per-week"].apply(reduce_hours)
grouped = df.groupby(["relationship", "reduced_hours"]).size().reset_index(name="count")
print("Original DataFrame:\n", df)
print("\nGrouped Result:\n", grouped)
```

```
Original DataFrame:
      relationship  hours-per-week  reduced_hours
0          Husband              40             31
1             Wife              35             26
2          Husband              50             41
3   Not-in-family              20             11
4       Own-child              15              6

Grouped Result:
      relationship  reduced_hours  count
0          Husband             31      1
1          Husband             41      1
2   Not-in-family             11      1
3       Own-child              6      1
4             Wife             26      1
```



```
[68]
import pandas as pd
data = {
    "relationship": ["Husband", "Wife", "Husband", "Not-in-family", "Own-child"],
    "hours-per-week": [40, 35, 50, 20, 15]
}
df = pd.DataFrame(data)
SID = "2454205"
n = int(SID[-1]) if SID[-1] != "0" else 10
def reduce_hours(x):
    return x - n

df["reduced_hours"] = df["hours-per-week"].apply(reduce_hours)
grouped = df.groupby(["relationship", "reduced_hours"]).size().reset_index(name="count")
print("Original DataFrame:\n", df)
print("\nGrouped Result:\n", grouped)
```

```
Original DataFrame:
      relationship  hours-per-week  reduced_hours
0          Husband              40             31
1             Wife              35             26
2          Husband              50             41
3   Not-in-family              20             11
4       Own-child              15              6

Grouped Result:
      relationship  reduced_hours  count
0          Husband             31      1
1          Husband             41      1
```

Code:-

```
import pandas as pd
data = {
    "relationship": ["Husband", "Wife", "Husband", "Not-in-family", "Own-child"],
    "hours-per-week": [40, 35, 50, 20, 15]
}
df = pd.DataFrame(data)
SID = "2454205"
n = int(SID[-1]) if SID[-1] != "0" else 10
def reduce_hours(x):
```

```
    return x - n

df["reduced_hours"] = df["hours-per-week"].apply(reduce_hours)
grouped = df.groupby(["relationship", "reduced_hours"]).size().reset_index(name="count")
print("Original DataFrame:\n", df)
print("\nGrouped Result:\n", grouped)
```