K.R. MANGALAM UNIVERSITY, GURUGRAM-122103

SCHOOL OF ENGENIERRING AND TECHNOLOGY

ASSIGNMENT 1

Data Analysis with Power BI & KNIME

ETMMML174

Department: SOET	**Session:** 2025-27
Program: MCA (AI & ML)	**Semester:** 1
Course Code: ETMMML174	**College Roll no:** 2501940074
Course Name: Data Analysis with Power BI & KNIME	
Submitted by: Khushi	**Faculty:** Mr. Mohammad Ajaz

1) Read the adult.csv file available in the data folder on the KNIME Hub. The data are provided by the UCI Machine Learning Repository.

2) Calculate the count and average age of women with income >50K

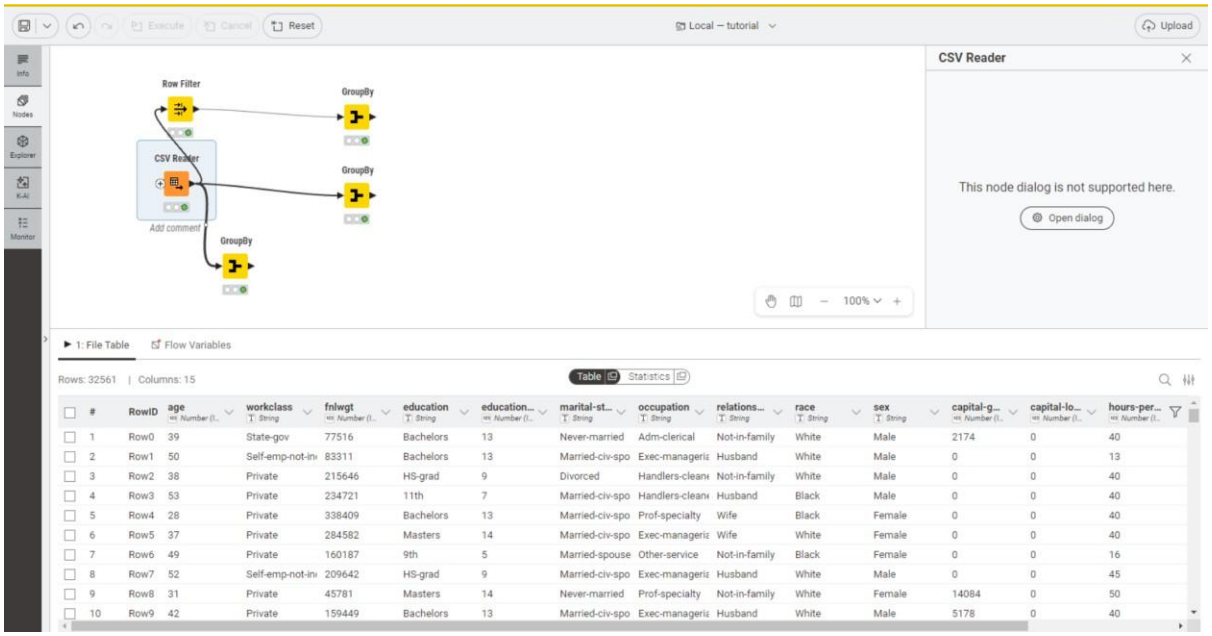
3) Calculate the averages of all numerical columns for each one of the 4 groups defined by sex and income values

4) Calculate

- the number of missing values in the occupation column
- the number of non-missing rows in the occupation column
- the number of rows in the occupation column
- the number of rows in the marital-status column

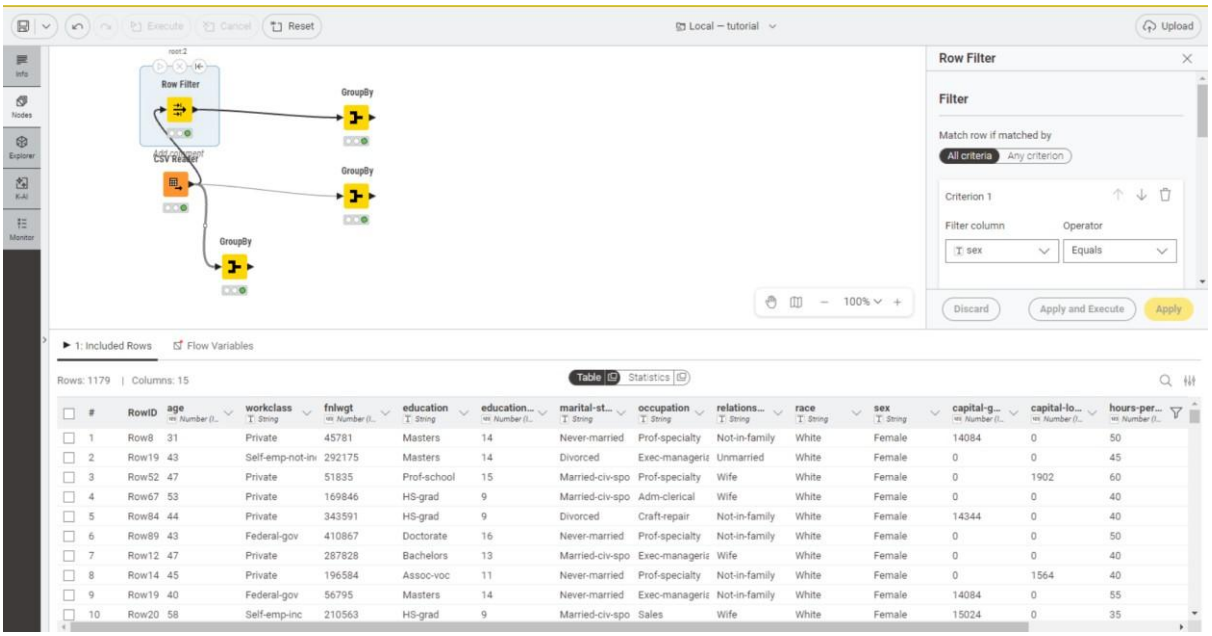
Notice that the last two aggregations should provide the same numbers!

1) Read the adult.csv file



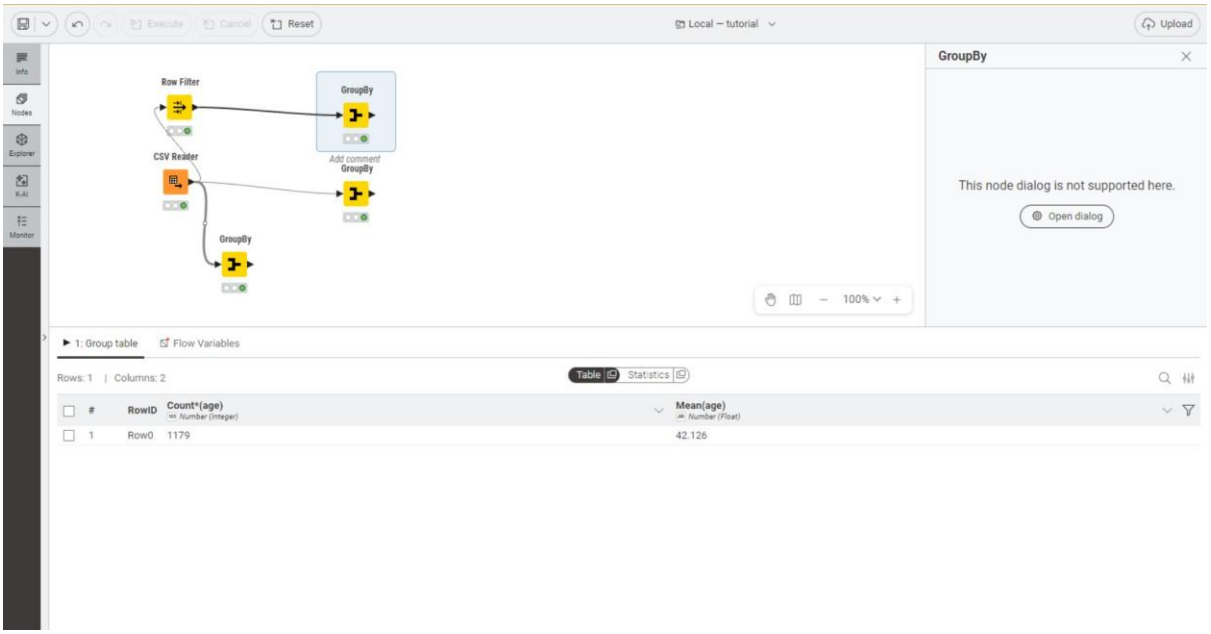
#	RowID	age	workclass	fnlwgt	education	education...	marital-st...	occupation	relations...	race	sex	capital-g...	capital-lo...	hours-per...
1	Row0	39	State-gov	77516	Bachelors	13	Never-married	Adm-clerical	Not-in-family	White	Male	2174	0	40
2	Row1	50	Self-emp-not-in	83311	Bachelors	13	Married-civ-spo	Exec-manageria	Husband	White	Male	0	0	13
3	Row2	38	Private	215646	HS-grad	9	Divorced	Handlers-clean	Not-in-family	White	Male	0	0	40
4	Row3	53	Private	234721	11th	7	Married-civ-spo	Handlers-clean	Husband	Black	Male	0	0	40
5	Row4	28	Private	338409	Bachelors	13	Married-civ-spo	Prof-specialty	Wife	Black	Female	0	0	40
6	Row5	37	Private	284582	Masters	14	Married-civ-spo	Exec-manageria	Wife	White	Female	0	0	40
7	Row6	49	Private	160187	9th	5	Married-spouse	Other-service	Not-in-family	Black	Female	0	0	16
8	Row7	52	Self-emp-not-in	209642	HS-grad	9	Married-civ-spo	Exec-manageria	Husband	White	Male	0	0	45
9	Row8	31	Private	45781	Masters	14	Never-married	Prof-specialty	Not-in-family	White	Female	14084	0	50
10	Row9	42	Private	159449	Bachelors	13	Married-civ-spo	Exec-manageria	Husband	White	Male	5178	0	40

2) A) Filter Female and Income >50k using Row Filter



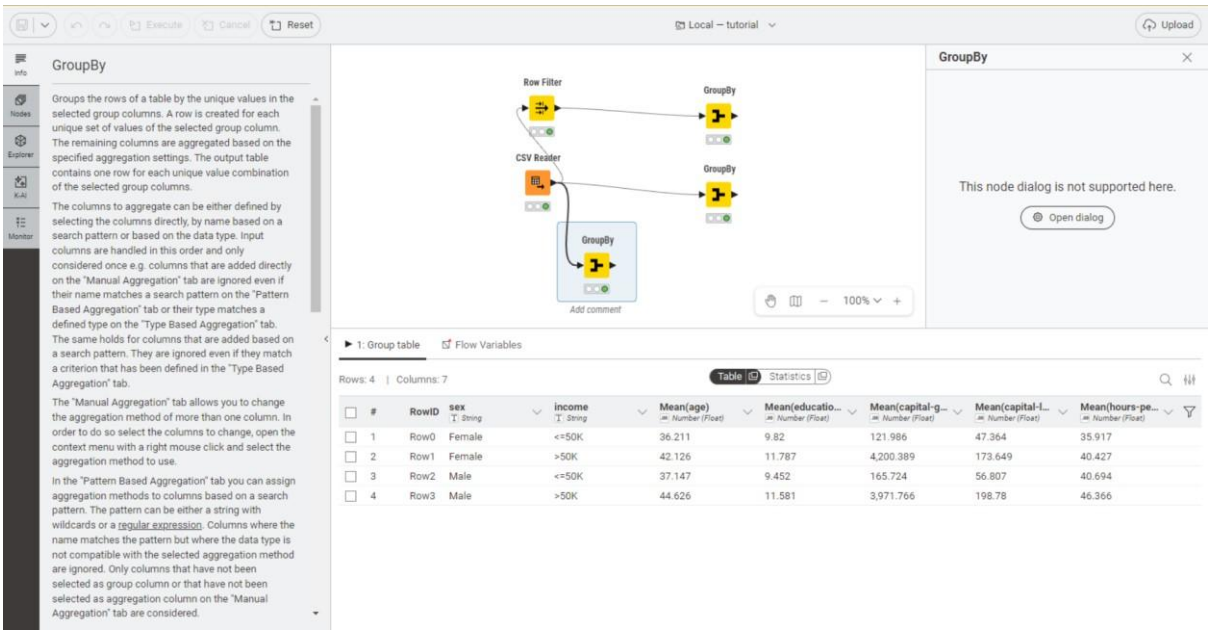
#	RowID	age	workclass	fnlwgt	education	education...	marital-st...	occupation	relations...	race	sex	capital-g...	capital-lo...	hours-per...
1	Row8	31	Private	45781	Masters	14	Never-married	Prof-specialty	Not-in-family	White	Female	14084	0	50
2	Row19	43	Self-emp-not-inc	292175	Masters	14	Divorced	Exec-managerial	Unmarried	White	Female	0	0	45
3	Row52	47	Private	51835	Prof-school	15	Married-civ-spo	Prof-specialty	Wife	White	Female	0	1902	60
4	Row67	53	Private	169846	HS-grad	9	Married-civ-spo	Adm-clerical	Wife	White	Female	0	0	40
5	Row84	44	Private	343591	HS-grad	9	Divorced	Craft-repair	Not-in-family	White	Female	14344	0	40
6	Row89	43	Federal-gov	410867	Doctorate	16	Never-married	Prof-specialty	Not-in-family	White	Female	0	0	50
7	Row12	47	Private	287828	Bachelors	13	Married-civ-spo	Exec-managerial	Wife	White	Female	0	0	40
8	Row14	45	Private	196584	Assoc-voc	11	Never-married	Prof-specialty	Not-in-family	White	Female	0	1564	40
9	Row19	40	Federal-gov	56795	Masters	14	Never-married	Exec-managerial	Not-in-family	White	Female	14084	0	55
10	Row20	58	Self-emp-inc	210563	HS-grad	9	Married-civ-spo	Sales	Wife	White	Female	15024	0	35

2) B) Calculate the Count and Average age of women with income >50k



#	RowID	Count*(age)	Mean(age)
1	Row0	1179	42.126

3) Calculate the averages of all numerical columns for each one of the 4 groups defined by sex and income value



4) Calculate:
   - the number of **missing values** in the *occupation* column
   - the number of **non-missing rows** in the *occupation* column
   - the **number of rows** in the *occupation* column
   - the **number of rows** in the *marital-status* column