

K.R. MANGALAM UNIVERSITY, GURUGRAM-122103

SCHOOL OF ENGENIERRING AND TECHNOLOGY

ASSIGNMENT 3

Data Analysis with Power BI & KNIME

ETMMML174



Department: SOET	Session: 2025-27
Program: MCA (AI & ML)	Semester: 1
Course Code: ETMMML174	College Roll no: 2501940069
Course Name: Data Analysis with Power BI & KNIME	
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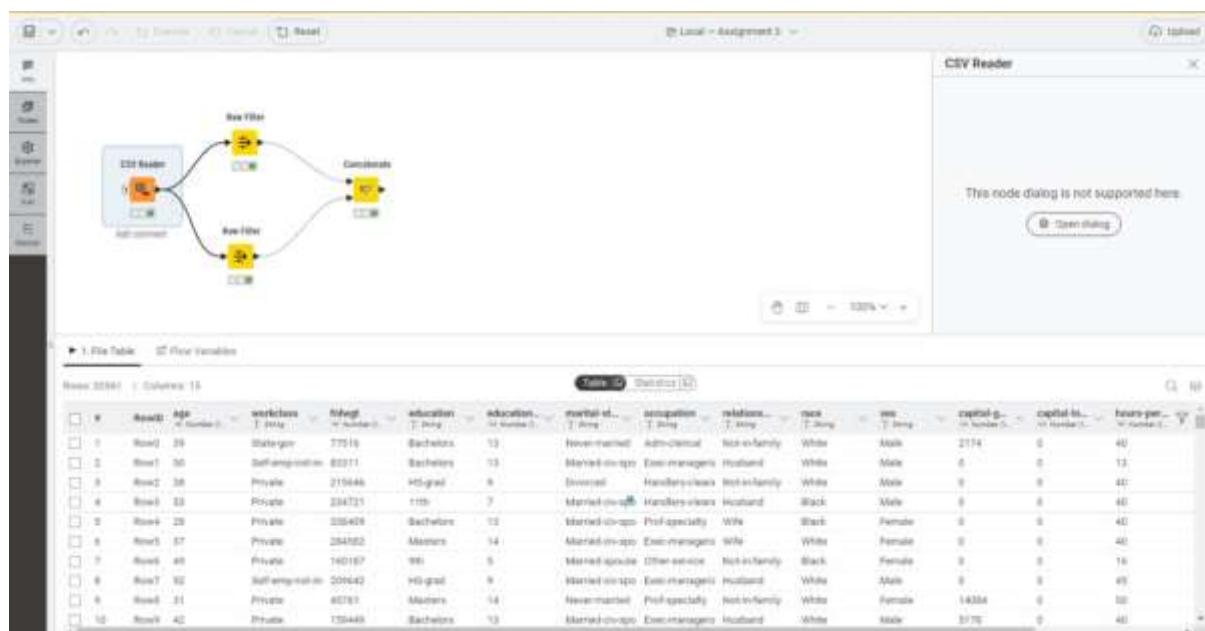
1) Read the adult.csv file available in the **data** folder on the KNIME Hub. The data are provided by the [UCI Machine Learning Repository](#).

2) Extract people with age between 20 and 40 (both included) and working in a workclass starting with "S"

3) Extract people with age between 40 and 60 (both included) and working in a workclass starting with "P"

4) Concatenate both subsets into a single data table

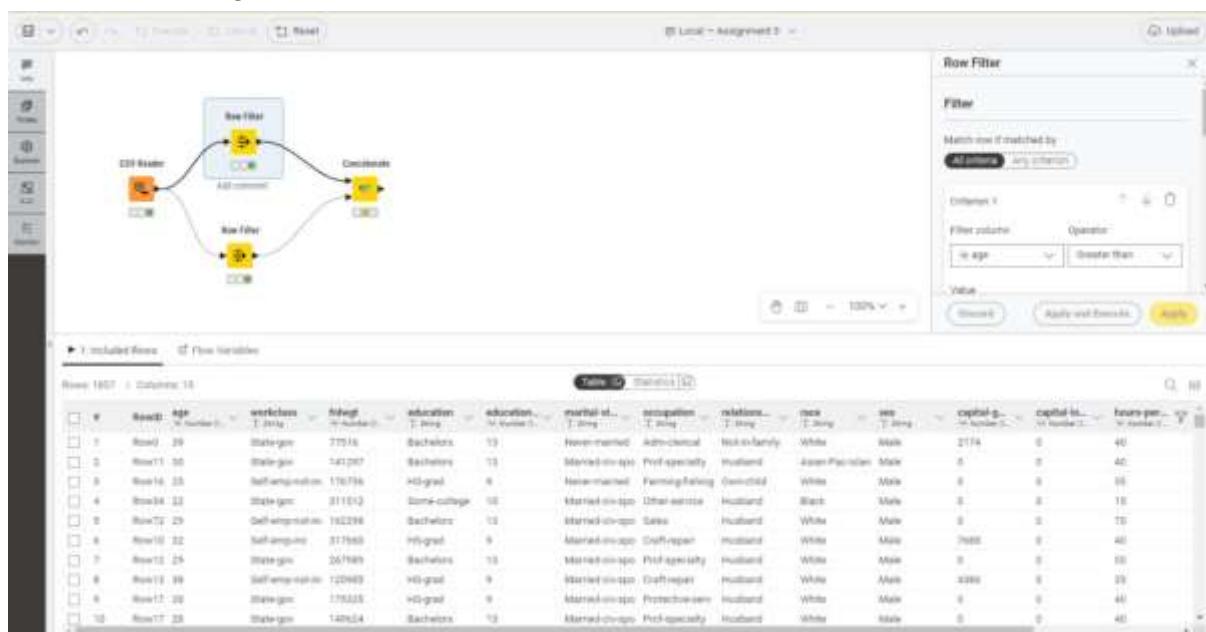
1) Read the adult.csv file



The screenshot shows a KNIME workflow titled 'Assignment 3'. It starts with a 'CSV Reader' node connected to a 'Row Filter' node. The 'Row Filter' node has two outputs: one to a 'Concatenate' node and one to another 'Row Filter' node. This second 'Row Filter' node also connects to the 'Concatenate' node. The 'Concatenate' node then connects to a 'Table View' node which displays the data.

#	Age	workclass	fnlwgt	education	education-num	marital-status	occupation	relationship	race	sex	capital-gain	capital-loss	hours-per-week
1	39	State-gov	77948	Bachelors	13	Never-married	Adm-clerical	Not-in-family	White	Male	2174	0	40
2	50	State-gov	83771	Bachelors	13	Married-spouse-absent	Exe-manager	Husband	White	Male	0	0	13
3	38	Private	215446	HS-grad	9	Divorced	Handlers-cleaners	Not-in-family	White	Male	0	0	40
4	33	Private	234723	1st	7	Married-spouse-absent	Handlers-cleaners	Husband	Black	Male	0	0	40
5	29	Private	235409	Bachelors	13	Married-spouse-absent	Prof-specialty	Wife	Black	Female	0	0	40
6	57	Private	284802	Masters	14	Married-spouse-absent	Exe-manager	Wife	White	Female	0	0	40
7	46	Private	140167	HS-grad	9	Married-spouse-absent	Other-service	Not-in-family	Black	Female	0	0	16
8	52	Self-employed	206442	HS-grad	9	Married-spouse-absent	Exe-manager	Husband	White	Male	0	0	40
9	31	Private	85781	Masters	14	Never-married	Prof-specialty	Not-in-family	White	Female	14384	0	50
10	42	Private	135449	Bachelors	13	Married-spouse-absent	Exe-managers	Husband	White	Male	2170	0	40

2) Extract people with age between 20 and 40 (both included) and working in a work class starting with "S"



The screenshot shows a KNIME workflow titled 'Assignment 3'. It starts with a 'CSV Reader' node connected to a 'Row Filter' node. The 'Row Filter' node has two outputs: one to a 'Concatenate' node and one to another 'Row Filter' node. This second 'Row Filter' node also connects to the 'Concatenate' node. The 'Concatenate' node then connects to a 'Table View' node which displays the filtered data. A 'Row Filter' dialog is open, showing the filter criteria: 'Match row if matched by' and 'Age >= 20 AND Age <= 40'.

#	Age	workclass	fnlwgt	education	education-num	marital-status	occupation	relationship	race	sex	capital-gain	capital-loss	hours-per-week
1	39	State-gov	77948	Bachelors	13	Never-married	Adm-clerical	Not-in-family	White	Male	2174	0	40
2	50	State-gov	83771	Bachelors	13	Married-spouse-absent	Prof-specialty	Husband	Asian-Pac-Islander	Male	0	0	13
3	38	Private	176756	HS-grad	9	Never-married	Prof-specialty	Own-child	White	Male	0	0	40
4	33	State-gov	311612	Some-college	10	Married-spouse-absent	Prof-specialty	Own-child	White	Male	0	0	13
5	29	Self-employed	102298	Bachelors	13	Married-spouse-absent	Sales	Husband	White	Male	0	0	70
6	57	State-gov	377665	HS-grad	9	Married-spouse-absent	Prof-specialty	Husband	White	Male	2000	0	40
7	46	State-gov	267985	Bachelors	13	Married-spouse-absent	Prof-specialty	Husband	White	Male	0	0	50
8	52	Self-employed	120489	HS-grad	9	Married-spouse-absent	Prof-specialty	Husband	White	Male	2000	0	50
9	31	Private	175523	HS-grad	9	Married-spouse-absent	Protective-serv	Husband	White	Male	0	0	40
10	42	State-gov	140164	Bachelors	13	Married-spouse-absent	Prof-specialty	Husband	White	Male	0	0	40

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- 3) Extract People with age between 40 and 60 (both included) and working in a work class starting with “P”

The KNIME Data Flow interface shows a workflow for filtering and concatenating data. It starts with a CSV Reader node connected to two parallel Row Filter nodes. The first Row Filter node has a condition of "age >= 40". The second Row Filter node has a condition of "age <= 60". Both filtered streams are then combined at a Concatenate node. The resulting data is displayed in a Table View node, which contains 10 rows of data. The columns include RowID, age, workclass, fnlwgt, education, educationn, maritalstatus, occupation, relations, name, sex, capitalgain, capitalloss, and hoursperweek.

RowID	age	workclass	fnlwgt	education	educationn	maritalstatus	occupation	relations	name	sex	capitalgain	capitalloss	hoursperweek
1	40	Private	234725	11th	7	Married-civ-spouse	Handlers-cleaners	Husband	Black	Male	0	0	40
2	40	Private	140187	9th	5	Married-civ-spouse	Other-service	Not-in-family	Black	Female	0	0	16
3	40	Private	155449	Bachelors	12	Married-civ-spouse	Exec-managerial	Husband	White	Male	1170	0	40
4	40	Private	302146	HS-grad	9	Separated	Other-service	Unmarried	Black	Female	0	0	20
5	40	Private	117027	11th	7	Married-civ-spouse	Transport-moving	Husband	White	Male	0	2042	40
6	40	Private	109019	HS-grad	9	Divorced	Tech-support	Unmarried	White	Female	0	0	40
7	40	Private	103996	HS-grad	9	Married-civ-spouse	Craft-repair	Husband	White	Male	0	0	40
8	40	Private	368443	Bachelors	12	Downdated	Executive-managerial	Own-child	White	Male	0	7438	40
9	40	Private	242465	11th	7	Never-married	Machinist-cook	Unmarried	White	Male	0	0	40
10	40	Private	546928	HS-grad	9	Separated	Adm-clerical	Unmarried	White	Female	0	0	40

- 4) Concatenate both subsets into a single data

The KNIME Data Flow interface shows a workflow for concatenating data. It starts with a CSV Reader node connected to two parallel Row Filter nodes. The first Row Filter node has a condition of "age >= 40". The second Row Filter node has a condition of "age <= 60". Both filtered streams are then combined at a Concatenate node. The resulting data is displayed in a Table View node, which contains 10 rows of data. The columns include RowID, age, workclass, fnlwgt, education, educationn, maritalstatus, occupation, relations, name, sex, capitalgain, capitalloss, and hoursperweek.

RowID	age	workclass	fnlwgt	education	educationn	maritalstatus	occupation	relations	name	sex	capitalgain	capitalloss	hoursperweek
1	40	State-gov	77516	Bachelors	12	Never-married	Adm-clerical	Not-in-family	White	Male	2174	0	40
2	40	State-gov	141297	Bachelors	12	Married-civ-spouse	Prof-specialty	Husband	Asian-Pac-Islander	Male	0	0	40
3	40	Self-employed-inc	116756	HS-grad	9	Never-married	Farming-Fishing	Own-child	White	Male	0	0	15
4	40	State-gov	311812	Some-college	12	Married-civ-spouse	Other-service	Husband	Black	Male	0	0	16
5	40	Self-employed-inc	161296	Bachelors	12	Married-civ-spouse	Sales	Husband	White	Male	0	0	16
6	40	Self-employed-inc	317649	HS-grad	9	Married-civ-spouse	Craft-repair	Husband	White	Male	7046	0	40
7	40	State-gov	327889	Bachelors	12	Married-civ-spouse	Prof-specialty	Husband	White	Male	0	0	50
8	40	Self-employed-inc	122685	HS-grad	9	Married-civ-spouse	Craft-repair	Husband	White	Male	4389	0	35
9	40	State-gov	173255	HS-grad	9	Married-civ-spouse	Protective-serv	Husband	White	Male	0	0	40
10	40	State-gov	140424	Bachelors	12	Married-civ-spouse	Prof-specialty	Unmarried	White	Male	0	0	40