

SHETH L.U.J AND SIR M.V COLLEGE OF SCIENCE , COMMERCE AND ARTS
DATA SCIENCE PRACTICAL NO 1

NITIN KUMAR BERA T072

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AIM : Introduction to Excel

- Perform conditional formatting on a dataset using various criteria.
- Create a pivot table to analyze and summarize data.
- Use VLOOKUP function to retrieve information from a different worksheet or table.
- Perform what-if analysis using Goal Seek to determine input values for desired output.

1: Perform conditional formatting on a dataset using various criteria.

Steps: 1. Select the “Salary” column (Column E).

2. Go to the Home tab on the ribbon.

3. Click on “Conditional Formatting” in the toolbar.

4. Choose “Highlight Cells Rules” and then “Greater Than.”

5. Enter the threshold value as 60000.

6. Customize the formatting options (e.g., choose a fill color).

7. Click “OK” to apply the rule.

The screenshot shows the Microsoft Excel interface with the 'enhanced_customer_data' sheet selected. The 'Home' tab is active. In the 'Conditional Formatting' section of the ribbon, the 'Highlight Cells Rules' dropdown is open, and 'Greater Than...' is selected. A dialog box titled 'Greater Than' is displayed, showing the threshold value '60000' entered in the 'Format cells that are GREATER THAN:' field, along with the format 'Light Red Fill with Dark Red Text'. The 'OK' button is visible at the bottom right of the dialog.

Country	Age	Education	Job Title	Salary	Purchased
Brazil	27	High School	Nurse	40596	Yes
Spain	34	PhD	Accountant	105553	No
India	18	PhD	Doctor	116549	No
France	55	Master's	Software Engineer	68175	No
Spain	53	High School	Nurse	39009	No
India	28	PhD	Sales Executive	100415	Yes
Brazil	46	PhD	Doctor	89146	Yes
USA	42	High School	Marketing Manager	47828	Yes
USA	38	Master's	Sales Executive	62912	Yes
Canada	45	Master's	Teacher	85459	No
USA	58	PhD	Sales Executive	114549	No
UK	23	High School	Sales Executive	34546	Yes
France	37	PhD	Software Engineer	118588	Yes
Japan	46	Master's	Teacher	69395	No
Australia	51	High School	Data Analyst	48271	No
Germany	18	Master's	Accountant	64641	Yes
Canada	32	High School	Nurse	37959	No
Canada	59	Bachelor's	Mechanical Engineer	42289	No
India	59	Bachelor's	Marketing Manager	58547	Yes
Australia	65	Bachelor's	Data Analyst	61884	No
Canada	24	PhD	Software Engineer	113462	Yes
Canada	34	Bachelor's	Sales Executive	62056	Yes

The screenshot shows the same Excel interface after applying the conditional formatting. The cells in column E where the salary is greater than 60000 are now highlighted with a light red fill and dark red text. The rest of the cells in column E remain white with black text.

Country	Age	Education	Job Title	Salary	Purchased
Brazil	27	High School	Nurse	40596	Yes
Spain	34	PhD	Accountant	105553	No
India	18	PhD	Doctor	116549	No
France	55	Master's	Software Engineer	68175	No
Spain	53	High School	Nurse	39009	No
India	28	PhD	Sales Executive	100415	Yes
Brazil	46	PhD	Doctor	89146	Yes
USA	42	High School	Marketing Manager	47828	Yes
USA	38	Master's	Sales Executive	62912	Yes
Canada	45	Master's	Teacher	85459	No
USA	58	PhD	Sales Executive	114549	No
UK	23	High School	Sales Executive	34546	Yes
France	37	PhD	Software Engineer	118588	Yes
Japan	46	Master's	Teacher	69395	No
Australia	51	High School	Data Analyst	48271	No
Germany	18	Master's	Accountant	64641	Yes
Canada	32	High School	Nurse	37959	No
Canada	59	Bachelor's	Mechanical Engineer	42289	No
India	59	Bachelor's	Marketing Manager	58547	Yes
Australia	65	Bachelor's	Data Analyst	61884	No
Canada	24	PhD	Software Engineer	113462	Yes
Canada	34	Bachelor's	Sales Executive	62056	Yes

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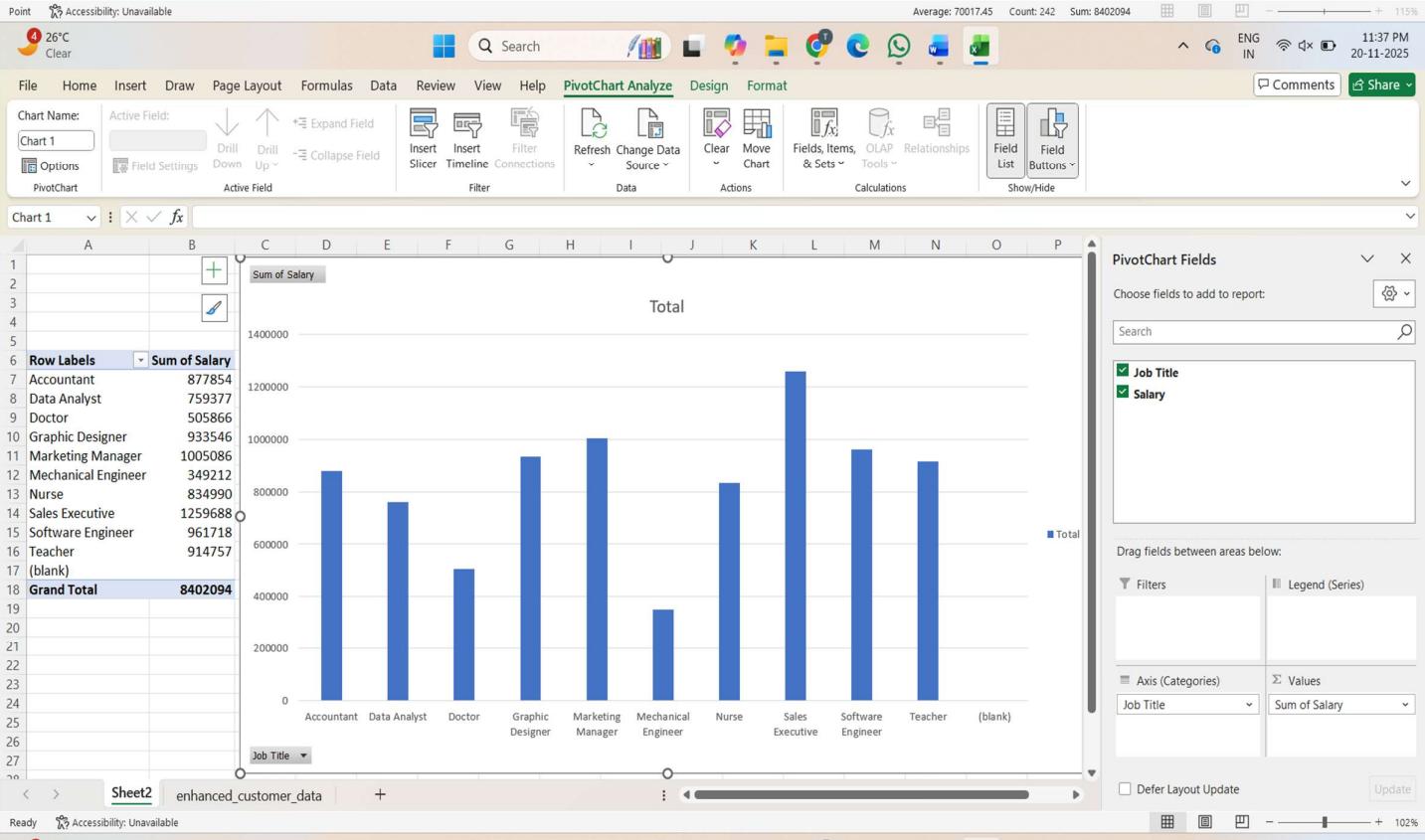
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2 : Create a pivot table to analyze and summarize data.

- Steps: 1. Select the entire dataset including headers.**
- 2. Go to the “Insert” tab on the ribbon.**
- 3. Click on “PivotTable”.**
- 4. Choose where you want to place the PivotTable (e.g., new worksheet).**
- 5. Drag “Salary” to the Rows area.**
- 6. Drag “Job Title” to the Values area, choosing the sum function.**

The screenshot shows the 'enhanced_customer_data' sheet in Excel. A PivotTable dialog box is open, asking to choose data to analyze from the selected range (enhanced_customer_data!\$D:\$E). It also asks where to place the PivotTable (New Worksheet) and whether to add this data to the Data Model. The main table has columns: Country, Age, Education, Job Title, Salary, and Purchased.

Country	Age	Education	Job Title	Salary	Purchased
Brazil	27	High School	Nurse	40596	Yes
Spain	34	PhD	Accountant	105553	No
India	18	PhD	Doctor	116549	No
France	55	Master's	Software Engineer	68175	No
Spain	53	High School	Nurse	39009	No
India	28	PhD	Sales Executive	100415	Yes
Brazil	46	PhD	Doctor	89146	Yes
USA	42	High School	Marketing Manager	47828	Yes
USA	38	Master's	Sales Executive	62912	Yes
Canada	45	Master's	Teacher	85459	No
USA	58	PhD	Sales Executive	114549	No
UK	23	High School	Sales Executive	34546	Yes
France	37	PhD	Software Engineer	118588	Yes
Japan	46	Master's	Teacher	69395	No
Australia	51	High School	Data Analyst	48271	No
Germany	18	Master's	Accountant	64641	Yes
Canada	32	High School	Nurse	37959	No
Canada	59	Bachelor's	Mechanical Engineer	42289	No
India	59	Bachelor's	Marketing Manager	58547	Yes
Australia	65	Bachelor's	Data Analyst	61884	No
Canada	24	PhD	Software Engineer	113462	Yes
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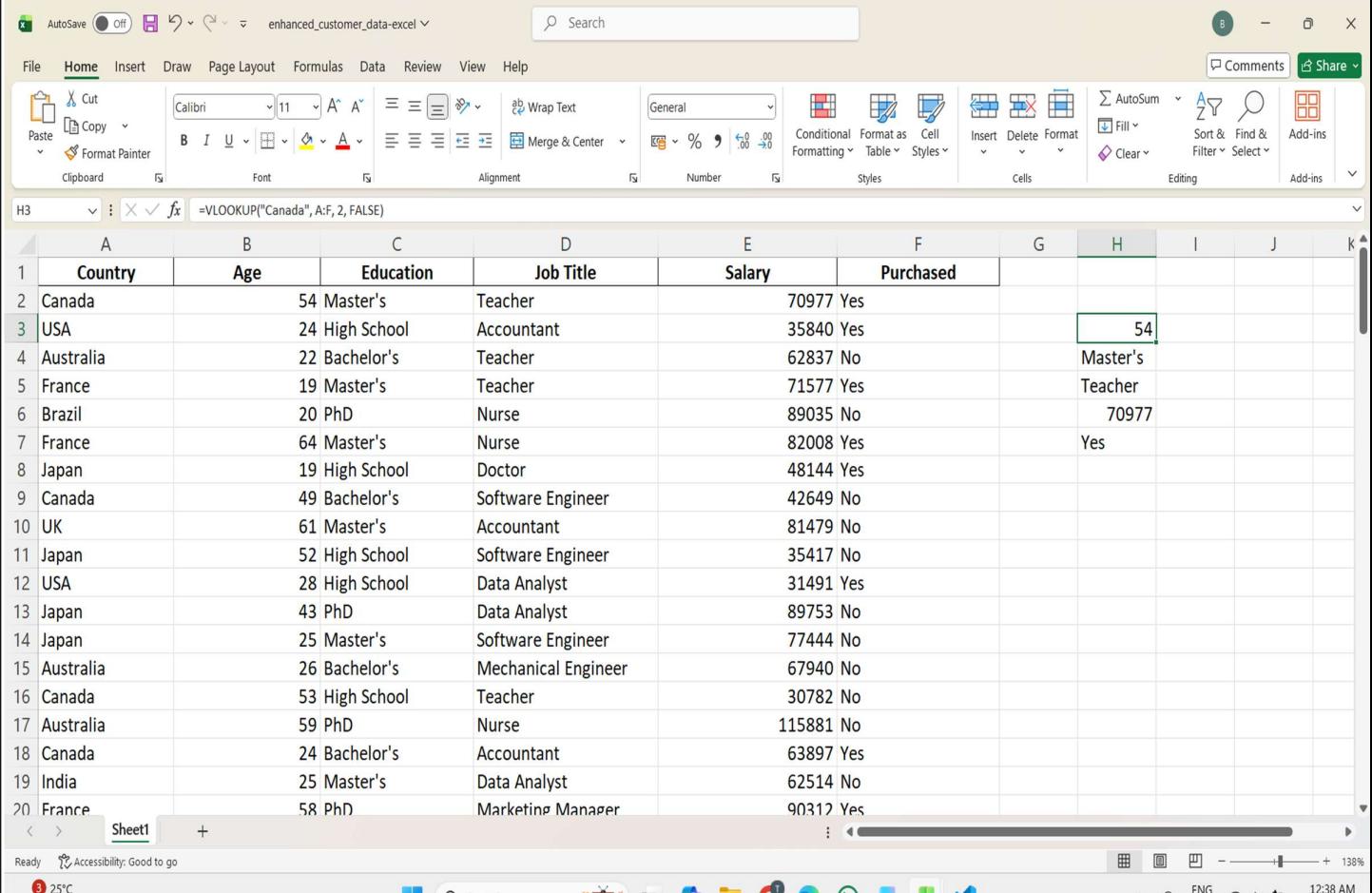
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3. Use VLOOKUP function to retrieve information from a different worksheet or table.

Steps:

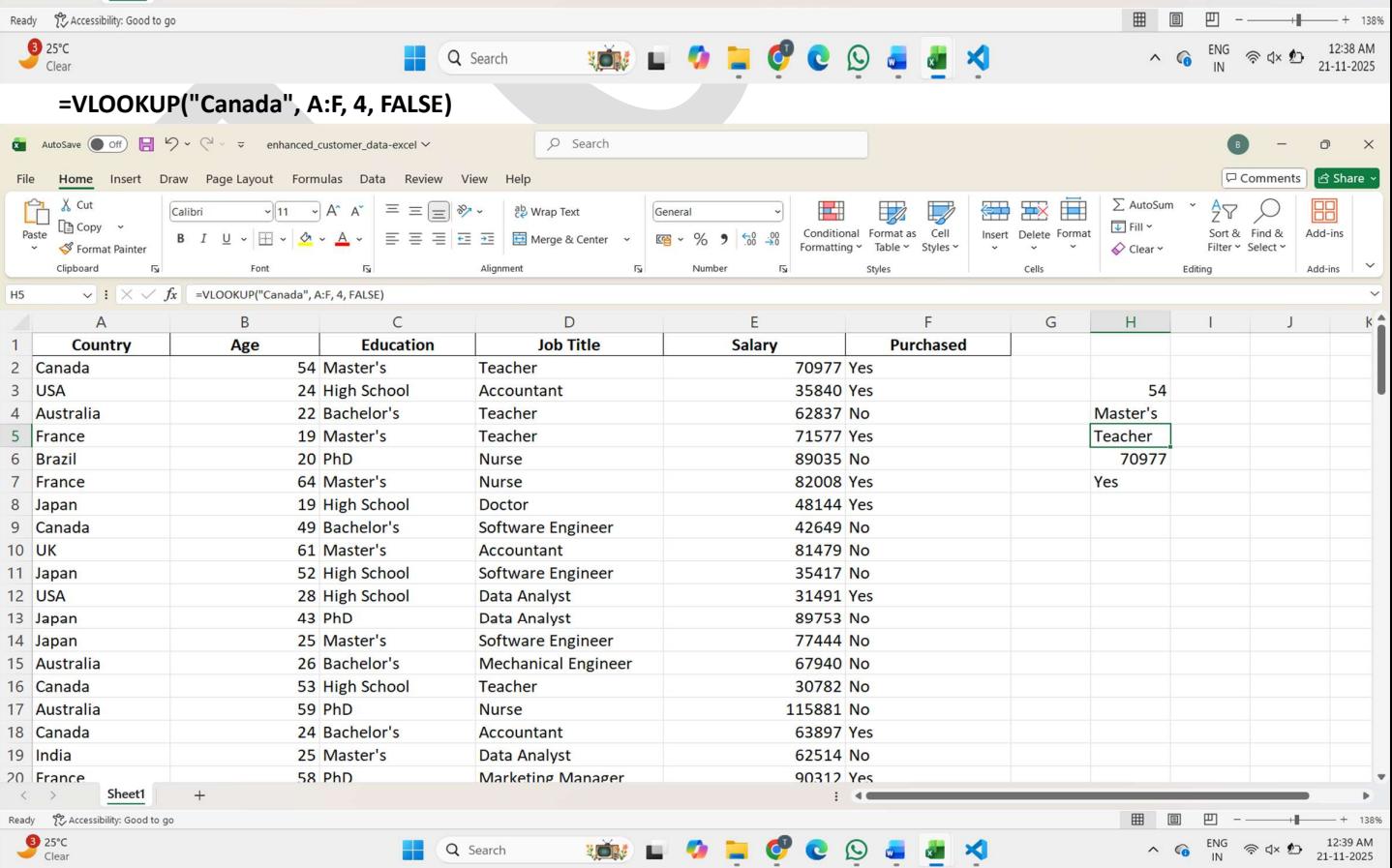
1. Assuming your “Product Table” is in a different worksheet.

2. In a cell in your main dataset, enter the formula: =VLOOKUP("Canada", 'Country Table'!A:B, 2, FALSE)



A screenshot of Microsoft Excel showing a table of customer data. The table has columns: Country, Age, Education, Job Title, Salary, and Purchased. Cell H3 contains the formula =VLOOKUP("Canada", A:F, 2, FALSE). The formula is highlighted with a green border. The status bar at the bottom shows the formula =VLOOKUP("Canada", A:F, 2, FALSE).

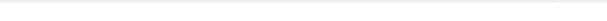
A	B	C	D	E	F	G	H	I	J
1	Country	Age	Education	Job Title	Salary	Purchased			
2	Canada	54	Master's	Teacher	70977	Yes			
3	USA	24	High School	Accountant	35840	Yes	54		
4	Australia	22	Bachelor's	Teacher	62837	No	Master's		
5	France	19	Master's	Teacher	71577	Yes	Teacher		
6	Brazil	20	PhD	Nurse	89035	No	70977		
7	France	64	Master's	Nurse	82008	Yes			
8	Japan	19	High School	Doctor	48144	Yes			
9	Canada	49	Bachelor's	Software Engineer	42649	No			
10	UK	61	Master's	Accountant	81479	No			
11	Japan	52	High School	Software Engineer	35417	No			
12	USA	28	High School	Data Analyst	31491	Yes			
13	Japan	43	PhD	Data Analyst	89753	No			
14	Japan	25	Master's	Software Engineer	77444	No			
15	Australia	26	Bachelor's	Mechanical Engineer	67940	No			
16	Canada	53	High School	Teacher	30782	No			
17	Australia	59	PhD	Nurse	115881	No			
18	Canada	24	Bachelor's	Accountant	63897	Yes			
19	India	25	Master's	Data Analyst	62514	No			
20	France	58	PhD	Marketing Manager	90312	Yes			



A screenshot of Microsoft Excel showing the same table as the previous screenshot, but with a different formula. Cell H5 contains the formula =VLOOKUP("Canada", A:F, 4, FALSE). The formula is highlighted with a green border. The status bar at the bottom shows the formula =VLOOKUP("Canada", A:F, 4, FALSE).

A	B	C	D	E	F	G	H	I	J
1	Country	Age	Education	Job Title	Salary	Purchased			
2	Canada	54	Master's	Teacher	70977	Yes			
3	USA	24	High School	Accountant	35840	Yes	54		
4	Australia	22	Bachelor's	Teacher	62837	No	Master's		
5	France	19	Master's	Teacher	71577	Yes	Teacher		
6	Brazil	20	PhD	Nurse	89035	No	70977		
7	France	64	Master's	Nurse	82008	Yes			
8	Japan	19	High School	Doctor	48144	Yes			
9	Canada	49	Bachelor's	Software Engineer	42649	No			
10	UK	61	Master's	Accountant	81479	No			
11	Japan	52	High School	Software Engineer	35417	No			
12	USA	28	High School	Data Analyst	31491	Yes			
13	Japan	43	PhD	Data Analyst	89753	No			
14	Japan	25	Master's	Software Engineer	77444	No			
15	Australia	26	Bachelor's	Mechanical Engineer	67940	No			
16	Canada	53	High School	Teacher	30782	No			
17	Australia	59	PhD	Nurse	115881	No			
18	Canada	24	Bachelor's	Accountant	63897	Yes			
19	India	25	Master's	Data Analyst	62514	No			
20	France	58	PhD	Marketing Manager	90312	Yes			

Ready Accessibility: Good to go



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4: Perform what-if analysis using Goal Seek to determine input values for desired output.

Steps:

1. Identify the cell containing the formula for "Simulated Profit". This cell is G2
2. Go to the "Data" tab on the ribbon.
3. Click on "What-If Analysis" and select "Goal Seek"
4. In the dialog box: Set "Set cell" to G2 (your formula cell), "To value" to 1000, and "By changing cell" to E2 (your Salary input cell).
5. Click "OK" to let Excel determine the required Salary.

The screenshot shows an Excel spreadsheet titled "enhanced_customer_data-excel" with data across 20 rows and various columns. The "Data" tab is selected. A "Goal Seek" dialog box is open, prompting for a target value of 10000 in cell G2 by changing the value in cell E2. A "Goal Seek Status" window indicates a solution has been found with the current value at 10000.

A	B	C	D	E	F	G
Country	Age	Education	Job Title	Salary	Purchased	Simulated Profit
Canada	54	Master's	Teacher	70977	100000	-29023
USA	24	High School	Accountant	35840	Yes	
Australia	22	Bachelor's	Teacher	62837	No	
France	19	Master's	Teacher	71577	Yes	
Brazil	20	PhD	Nurse	89035	No	
France	64	Master's	Nurse	82008	Yes	
Japan	19	High School	Doctor	48144	Yes	
Canada	49	Bachelor's	Software Engineer	42649	No	
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Canada	53	High School	Teacher	30782	No	
Australia	59	PhD	Nurse	115881	No	
Canada	24	Bachelor's	Accountant	63897	Yes	
India	25	Master's	Data Analyst	62514	No	
France	58	PhD	Marketing Manager	90312	Yes	

The screenshot shows the same Excel spreadsheet after performing the Goal Seek operation. The salary in cell E2 has been changed to 110000, and the simulated profit in cell G2 is now 10000.

A	B	C	D	E	F	G
Country	Age	Education	Job Title	Salary	Purchased	Simulated Profit
Canada	54	Master's	Teacher	110000	100000	10000
USA	24	High School	Accountant	35840	Yes	
Australia	22	Bachelor's	Teacher	62837	No	
France	19	Master's	Teacher	71577	Yes	
Brazil	20	PhD	Nurse	89035	No	
France	64	Master's	Nurse	82008	Yes	
Japan	19	High School	Doctor	48144	Yes	
Canada	49	Bachelor's	Software Engineer	42649	No	
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Canada	53	High School	Teacher	30782	No	
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