

Lect14_01a_States_Cities.py

`self.listbox_states`

SQL code retrieves state names
Insert names into listbox

`self.listbox_states.curselection()`
`st_idx = (21,) -> st_idx[0] = 21`
`self.listbox_states.get(st_idx[21])`

`get_cities_info(st_name)`

Input:
Selected state

Processing:
SQL code retrieves city
info for the selected state
Calculate % pop change

Output:
Insert resulting records
into Treeview table

City Name	Pop 2020	Pop 2010	% Change
Minneapolis	429,954	382,578	12.38%
Saint Paul	311,527	285,068	9.28%
Rochester	121,395	106,769	13.70%

`<<Listbox Select>>` event -> triggered when selection changed ->

Callback function -> `proc_sel_state(e)`:

finds new `st_idx[0]`

gets new state name

calls `get_cities_info(st_name)`

`self.table_cities`

Lect14_01b_Regions_Divisions.py

`self.rb_midwest`

`self.listbox_divisions`

<<Listbox Select>> event

Callback function -> `proc_sel_div(e)`:

finds new `div_idx[0]`

gets new division name

calls `get_states_info(division)`

`self.table_states`

Regions and Divisions

Choose region

☐ Northeast

☒ Midwest

☐ South

☐ West

Select division

East North Central

West North Central

Display state and city info

State Name	State Pop	Num Cities	Urban Pop	% Urban
Nebraska	1,961,504	2	777,133	39.62%
Kansas	2,937,880	5	1,019,254	34.69%
South Dakota	886,667	1	192,517	21.71%
Missouri	6,154,913	6	1,329,217	21.60%
North Dakota	779,094	1	125,990	16.17%
Minnesota	5,706,494	3	862,876	15.12%
Iowa	3,190,369	3	453,567	14.22%

StringVar Object

`self.region`

`self.region.set('Midwest')`

`get_divisions()` Radiobutton callback function

SQL code retrieves division names based on selected region

`get_states_info(division)`

Input: Selected division

Processing:

SQL code retrieves state and city info for the selected division within a chosen region and calculates % Urban

Output:

Insert resulting records into Treeview table