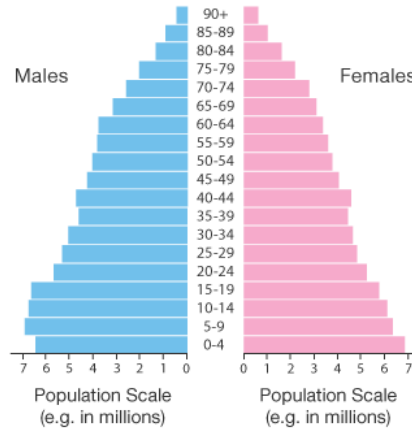




## Exercise 1: Population Pyramid

### What is a Population Pyramid?

A Population Pyramid is a classic visualization to showcase the distribution of a variable across age groups and sexes. The two side-by-side histograms provide the ability to easily compare populations by sex (x-axis) and by age group (y-axis).



Example:

Source: [https://datavizcatalogue.com/methods/population\\_pyramid.html](https://datavizcatalogue.com/methods/population_pyramid.html)

Data:

### Distribution of shelter residents by sex and age, 2021 count

	Ontario		Canada	
	Women+	Men+	Women+	Men+
Total	2,120	1,940	3,820	5,450
Aged 0 to 14 years	110	205	180	370
Aged 15 to 19 years	440	300	600	455
Aged 20 to 24 years	265	260	435	465
Aged 25 to 29 years	140	135	270	410
Aged 30 to 34 years	200	80	415	355
Aged 35 to 39 years	120	110	340	520
Aged 40 to 44 years	105	185	260	545
Aged 45 to 49 years	180	105	320	355



Aged 50 to 54 years	135	135	270	435
Aged 55 to 59 years	145	140	260	515
Aged 60 to 64 years	120	155	205	580
Aged 65 years and over	155	135	265	450

**Source:** Statistics Canada, Census of Population, 2021.

<https://www150.statcan.gc.ca/n1/pub/75f0002m/75f0002m2023004-eng.htm>

**Notes on the data:** Men+ category includes cisgender men, transgender men, and/or boys, and some non-binary persons. Women+ category includes transgender women, cisgender women, and/or girls, and some non-binary persons. More details about how Statistics Canada (very recently!) defines sex and gender while balancing individual confidentiality: <https://www12.statcan.gc.ca/census-recensement/2021/ref/98-20-0001/982000012021001-eng.cfm>

#### Collage exercise instructions:

Create a Population Pyramid using the magazines! Represent Women+ with warm tones (red, orange, yellow, pink) and Men+ with cool tones (blue, green, purple).

1. See what data points (sex + age) need to be added to the visualization
2. Cut out a rectangle from the magazine paper that matches the colour scheme, where the **length of the rectangle bar = the count of persons** in that group.
3. Glue or tape the bar onto the Population Pyramid!
4. Repeat as desired.

**Ask Alex or Priscilla any time for help with instructions!**



## Exercise 2: Treemap

### What is a Treemap?

A Tree Map is a compact way to visualize data with subcategories, where the area size represents the quantity for each category and subcategory. Treemaps effectively visualize the hierarchical structure and compare the proportions between categories by area size.



Example:

Source: <https://datavizcatalogue.com/methods/treemap.html>

Data:

Place	Number of people experiencing homelessness	Total number of beds
Barrie	219	153
Belleville	180	21
Brantford	238	88
Cochrane District (Timmins)	312	/
Dufferin	23	20
Durham	573	109
Guelph-Wellington	270	82
Halton	293	32
Hamilton	545	265
Kenora	221	/
Kingston	207	63
Lambton County	236	/
London	2670	316
Nipissing/North Bay	300	36
Ottawa	1340	827
Peel Region	866	490
Peterborough	300	99
Sault Sainte Marie	244	42
Saint Catharines Niagara	645	190



Sudbury	398	56
Thunder Bay	221	59
Toronto	7347	3529
Waterloo	1085	222
Windsor	251	187
York Region	329	160

### Collage exercise instructions:

Create a treemap showcasing the number of people experiencing homelessness with the number of shelter beds as a subcategory.

1. See which region does not already have data visualized yet in the treemap, and choose one region. (E.g., Ottawa, if not already visualized).
2. For your region, cut out two areas to visualize the data for (a) the number of people experiencing homelessness and (b) the number of shelter beds. Use the graph paper provided to help calculate area size you need, where **1 square = 5 people**.
  - a. To visualize the number of people experiencing homelessness:
    - i. E.g., Toronto reports that it has 7347 people experiencing homelessness. Each graph paper represents 5 people, so these people should be represented by  $7347/5 = 1470$  (approximately). 1470 squares can be in many shapes, but let's pick 42 squares wide by 35 squares long, because it divides evenly because both 35 and 42 are factors of 1470 (and  $42 * 35 = 1470$ ).
    - ii. Cut out the graph paper in your calculated shape to use as a template. Find a **light** colour in the magazines and paper pile that will fit your graph paper shape and cut the collage paper to the dimensions of your graph paper.
  - b. To visualize the number of shelter beds:
    - i. E.g., Toronto reports 3529 shelter beds. We can use our graph paper as a template again and calculate that our area is 706 squares. Since our bigger shape is 35 x 42, we can create a guide that is 35 \* 20 rectangle (= 700 squares), and then add 6 more squares to make an irregular shape.
    - ii. Cut out the graph paper in the calculated shape and use it as a guide to find a **dark** colour in the same hue family as the city's visualization for the number of people experiencing homelessness. (If the people experiencing homelessness colour is light green, then use dark green to represent the number of shelter beds.

**Ask Alex or Priscilla any time for help with instructions (or the math)!**

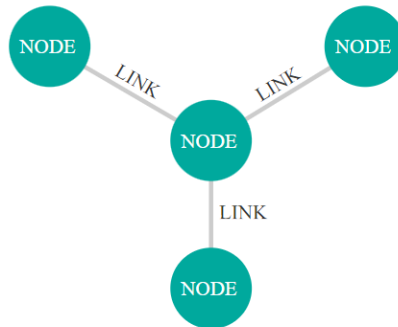




## Exercise 3: Network Diagram:

### What is a Network Diagram?

A network visualization maps out a system of connections between a group of entities. These entities can be anything, from people to books to organizations and more, and in a network, are called **nodes**; nodes are usually depicted by a circle with the name of the entity written inside it. The connections between nodes are represented by linking lines, which are called **edges**. By using nodes and edges, as well as attributes like node size, colours, and layout, a network visualization can display a lot of information about a system.



**Example:**

**Source:** [https://datavizcatalogue.com/methods/network\\_diagram.html](https://datavizcatalogue.com/methods/network_diagram.html)

The **York Region Alliance to End Homelessness (YRAEH)** would often review the work of other organizations whose work intersected with homelessness, to see how they could better improve housing and shelter services within their own community.

### What is the YRAEH?

York Region Alliance to End Homelessness (YRAEH) (1998-2011) was a coalition of various community stakeholders raising awareness of the prevalence of poverty and lack of affordable housing in the York Region.

The York Region Alliance to End Homelessness (YRAEH) is no longer operational, and many of their documents have been donated to the Clara Thomas Archives. The official documents may be viewed by appointment at the Archives.

Other Homelessness Alliances, including operational organizations, are reliant upon funding from different sources to maintain and sustain these organizations' projects and operational costs. These sources of funding are subject to change and often require the organization to continually seek funding through fundraising or grants on a regular basis.

Data:

Nodes

Organization Label	Active?	Organization type	Colour/Shape to represent type
Toronto Disaster Relief	No	Alliance/coalition	Grey circle
Simcoe County Alliance to End Homelessness	Yes	Alliance/coalition	Blue circle



Ottawa Alliance to End Homelessness	Yes	Alliance/coalition	Blue circle
Edmonton Coalition on Housing and Homelessness	Yes	Alliance/coalition	Blue circle
York Region Alliance to End Homelessness	No	Alliance/coalition	Grey Circle
Waterloo Region Homelessness and Housing Umbrella Group	Yes	Alliance/coalition	Blue Circle
Homeless Coalition of Windsor-Essex County	No	Alliance/coalition	Grey Circle
London Homelessness Coalition	Yes	Alliance/coalition	Blue Circle
CIBC	N/A	Funding type	Green Square
Maytree Foundation	N/A	Funding type	Green square
United Way	N/A	Funding type	Green square
Ontario Trillium Foundation	N/A	Funding Type	Green square
Supporting Communities Partnership Initiative (SCPI)	N/A	Funding Type	Green Square
Homelessness Partnership Initiative (HPI)	N/A	Funding Type	Green Square
Maclaren Corlett	N/A	Funding Type	Green Square
Ottawa Community Foundation	N/A	Funding Type	Green Square
Private Donations	N/A	Funding Type	Green Square
Blue Doors Shelters	N/A	Community Organization	Pink Triangle
LOFT/Crosslinks Street Outreach	N/A	Community Organization	Pink Triangle
Citizens for Affordable Housing	N/A	Community Organization	Pink Triangle
York Region Food Network	N/A	Community Organization	Pink Triangle
Yellow Brick House	N/A	Community Organization	Pink Triangle
Sandgate Women's Shelter	N/A	Community Organization	Pink Triangle
Pathways for Children, Youth, and Families	N/A	Community Organization	Pink Triangle



Inn From the Cold	N/A	Community Organization	Pink Triangle
Rose of Sharon	N/A	Community Organization	Pink Triangle
MakeWay (formerly Tides Canada)	N/A	Community Organization	Pink Triangle
Community Legal Clinic of York Region	N/A	Community Organization	Pink Triangle
East Markham Non-Profit Homes (also Tony Wong Place)	N/A	Community Organization	Pink Triangle
Salvation Army Sutton Youth Shelter	N/A	Community Organization	Pink Triangle
Women's Centre of York Region	N/A	Community Organization	Pink Triangle
Mosaic Interfaith Out of the Cold	N/A	Community Organization	Pink Triangle
Routes Connecting Communities (formerly Georgina Transit)	N/A	Community Organization	Pink Triangle

### Edges

Source	Target	Relationship
Toronto Disaster Relief	Private Donations	Funding Donor
Simcoe County Alliance to End Homelessness	Supporting Communities Partnership Initiative (SCPI)	Funding Donor
Simcoe County Alliance to End Homelessness	United Way	Funding Donor
Simcoe County Alliance to End Homelessness	Ontario Trillium Fund	Funding Donor
Simcoe County Alliance to End Homelessness	HPI	Funding Donor
Ottawa Alliance to End Homelessness	United Way	Funding Donor
Ottawa Alliance to End Homelessness	Maytree Foundation	Funding Donor
Ottawa Alliance to End Homelessness	Maclaren Corlett	Funding Donor
Ottawa Alliance to End Homelessness	Ottawa Community Foundation	Funding Donor
Ottawa Alliance to End Homelessness	Private Donations	Funding Donor
Edmonton Coalition on Housing and Homelessness	Private Donations	Funding Donor



York Region Alliance to End Homelessness	Ontario Trillium Foundation (OTF)	Funding Donor
York Region Alliance to End Homelessness	Homelessness Partnership Initiative (HPI)	Funding Donor
York Region Alliance to End Homelessness	United Way	Funding Donor
York Region Alliance to End Homelessness	CIBC	Funding Donor
York Region Alliance to End Homelessness	Private Donations	Funding Donor
Waterloo Region Homelessness and Housing Umbrella Group	Ontario Trillium Foundation (OTF)	Funding Donor
Homeless Coalition of Windsor-Essex County	United Way	Funding Donor
London Homelessness Coalition	Supporting Communities Partnership Initiative (SCPI)	Funding Donor
Blue Tree Shelters	York Region Alliance to End Homelessness	Part of the alliance/coalition
LOFT/Crosslinks Street Outreach	York Region Alliance to End Homelessness	Part of the alliance/coalition
Citizens for Affordable Housing	York Region Alliance to End Homelessness	Part of the alliance/coalition
York Region Food Network	York Region Alliance to End Homelessness	Part of the alliance/coalition
Yellow Brick House	York Region Alliance to End Homelessness	Part of the alliance/coalition
Sandgate Women's Shelter	York Region Alliance to End Homelessness	Part of the alliance/coalition
Pathways for Children, Youth, and Families	York Region Alliance to End Homelessness	Part of the alliance/coalition
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Community Legal Clinic of York Region	York Region Alliance to End Homelessness	Part of the alliance/coalition
East Markham Non-Profit Homes (also Tony Wong Place)	York Region Alliance to End Homelessness	Part of the alliance/coalition
Salvation Army Sutton Youth Shelter	York Region Alliance to End Homelessness	Part of the alliance/coalition



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Mosaic Interfaith Out of the Cold	York Region Alliance to End Homelessness	Part of the alliance/coalition
Routes Connecting Communities (formerly Georgina Transit)	York Region Alliance to End Homelessness	Part of the alliance/coalition

### Collage Exercise:

Let's create a network diagram that will help us better understand the differences and similarities of funding structures of some of the homelessness alliances reviewed by the YRAEH. Data for this exercise was pulled from archival records and current online activities.

The Node and Edge tables above provide all the basic information we need to start creating a network diagram:

1. To add a node to the network diagram:
  - a. Identify a node in the Nodes table that has not already been added to the visualization.
  - b. Use the rightmost column of Node table to guide what shape (circle, square, triangle) and what colour (grey, blue, green, orange) that node should be.
  - c. Cut out a piece of paper that matches the colour and shape, in a similar size to what is already on the board
  - d. Write the name of the organization ("Organization Label") in the middle of your cut out shape
  - e. Tape your node onto the visualization board; its placement will depend on the organization type. Network layouts can convey important information; in our case, we want to emphasize readability.
    - i. If a Funding type, tape node to the top third of the visualization
    - ii. If an Alliance/coalition type, tape node to the middle of the visualization
    - iii. If a Community organization, tape node to the bottom third of the visualization
2. To add an edge to the network diagram:
  - a. Identify an edge in the Edges table that has not already been added to the visualization
  - b. To create an edge, both Source and Target nodes need to be on the visualization. If they are not, use the instructions above on how to add a node to do so.
  - c. Once the Source and Target nodes for the chosen edge are identified, cut a piece of yarn that will reach from one node to the other.
  - d. Tape that piece of yarn so that one end of the yarn is taped to the Source node and the other end is taped to the Target node.

Note: Is the Network Diagram looking as neat as it could be? As more and more nodes and edges are added, see if any of the nodes can be moved so that the visualization is easier to read!

**Ask Alex or Priscilla any time for help with instructions!**