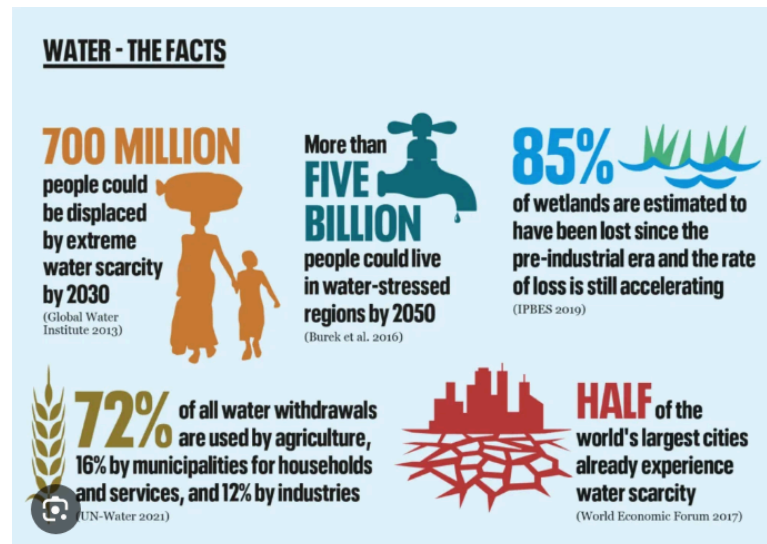


Activity No. 14: Build a Narrative on a Storyboard	
Course Code: CPE311	Program: Computer Engineering
Course Title: Computational Thinking with Python	Date Performed: May 13, 2025
Section: CPE22S3	Date Submitted: May 13, 2025
Name: Prince Wally G. Esteban Don Eleazar T. Fernandez	Instructor: Engr. Roman Richard
1. Discussion	
<p>What is water scarcity?</p> <p>Water scarcity limits access to safe water for drinking and for practising basic hygiene at home, in schools and in health-care facilities (<i>Water Scarcity</i>, n.d.). Some 1.1 billion people worldwide lack access to water, and a total of 2.7 billion find water scarce for at least one month of the year (<i>Water Scarcity</i>, n.d.).</p> <p>Causes of Urbanization:</p> <ol style="list-style-type: none"> 1. Education - Free education has helped these vulnerable children to enter and remain in school. However, the quality of education and academic support received from family and/or community by these children still remain lower than that received by their urban counterparts who attend schools with better facilities ("Going to School From a Relocated Urban Community: Struggling for Education Within Imposed Walls," 2017). 2. Healthcare Access - Some cities have advanced hospitals with top specialists. Patients with chronic conditions move for better treatment options. Access to high quality treatment improves quality of life. Therefore, healthcare availability significantly affects where people choose to settle (<i>Effect on Relocation</i>, n.d.). 3. Job Opportunity - Relocating to a different location provides new exposure to employees. These will likely expand their skill sets, which in turn will open doors to career opportunities (<i>The Benefits of Relocation for Career Growth and Development</i>, 2023). 	
2. Materials and Equipment	
<ol style="list-style-type: none"> 1. Internet 2. Computer or Laptop 3. Jupyter Notebook 4. SAP Analytics Cloud 	
3. Procedure	
<p>Title: The Challenge of Clean Water Access in Rapidly Growing Urban Areas</p> <p>Problem</p> <p>We need to find out how rapid urban population growth affects access to clean and safe drinking water in Southeast Asian countries between 2018 and 2022, in order to provide recommendations based on best practices and identify areas where improvements in water infrastructure and policies are needed.</p> <p>Statement Question</p> <ol style="list-style-type: none"> 1. Are countries with faster-growing urban populations more likely to experience a decline in clean water access? 2. How has the percentage of the urban population with access to clean water changed from 2018 to 2022 in Southeast Asian countries? 3. Which countries showed consistent improvements in clean water access despite urban population 	

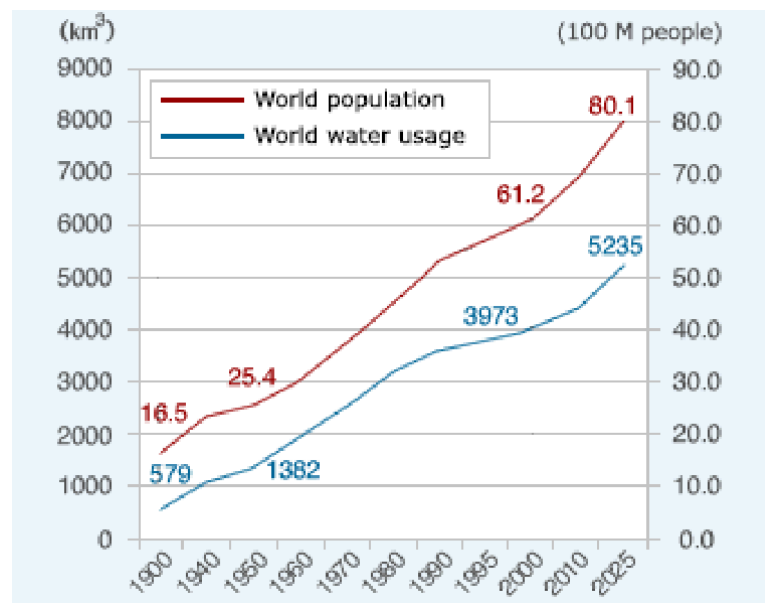
growth?

Find Data

According to a report by WWF, at least 2.7 billion people experience water shortage at least one month a year. From the report, water shortage affects nearly 27% of the world's population (Peluso, 2022).



Source: <https://sustainablereview.com/how-population-affects-environment/>



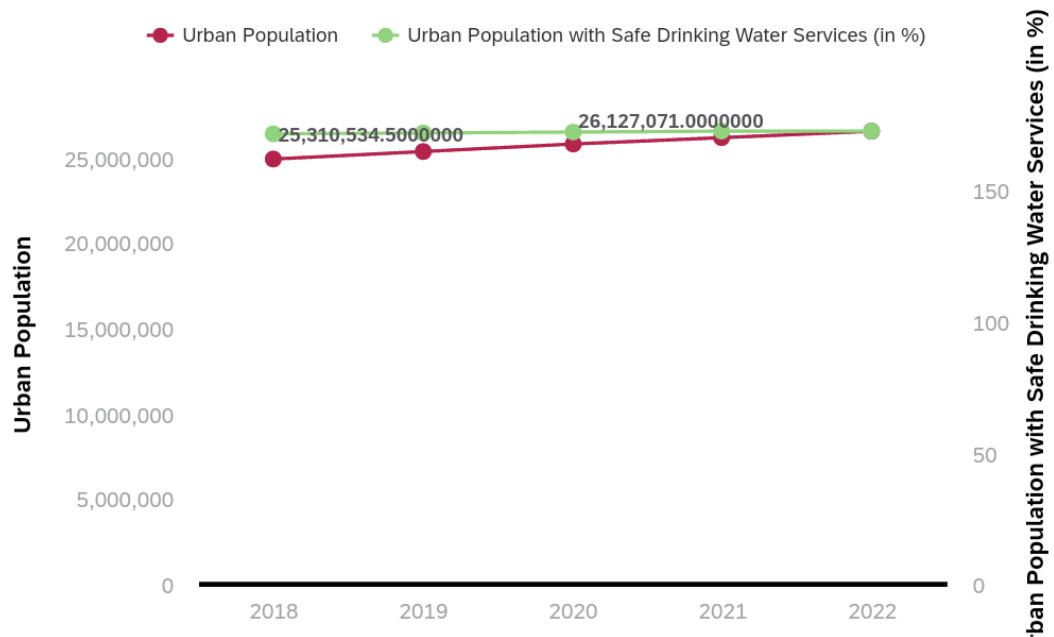
Source:

https://www.researchgate.net/figure/World-population-and-water-usage-trends-Source-UN-World-Population-Prospects-2019-21_fig3_344433103

Visualize

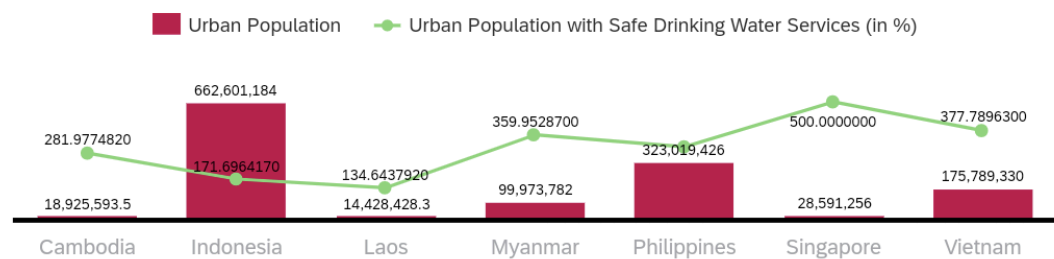
Urban Population, Urban Population with Safe Drinking Water Services (in %) per Year for Actual

1 Filter



This line chart show that while urban population grows, People with access to supply of clean water also grows.

Urban Population, Urban Population with Safe Drinking Water Services (in %) per Country for Actual



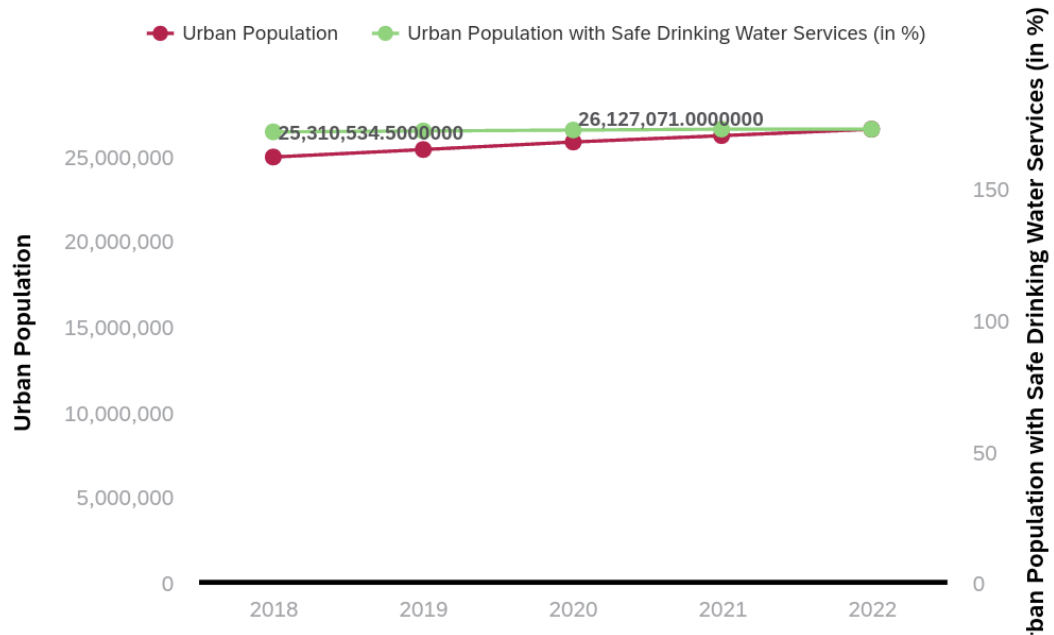
This chart depicts the ratio between the population who has access to clean water supply and urban population in each country

4. Output

Screenshot of your outputs based on the procedures.

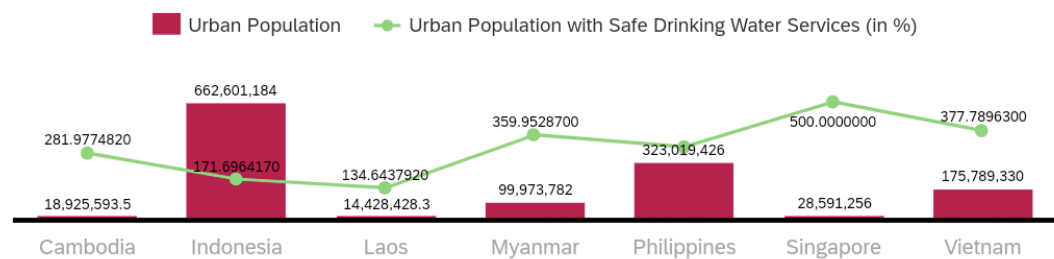
Urban Population, Urban Population with Safe Drinking Water Services (in %) per Year for Actual

1 Filter



This line chart show that while urban population grows, People with access to supply of clean water also grows.

Urban Population, Urban Population with Safe Drinking Water Services (in %) per Country for Actual



This chart depicts the ratio between the population who has access to clean water supply and urban population in each country

5. Supplementary Activity

- Map out your datasets to your described objective.
 - Objective: Predict customer churn for a telecom company.
 - Dataset: Contains customer age, contract type, usage data, and churn status.
- Link and cite all your data.

- <https://www.urbanbound.com/blog/the-benefits-of-relocation-for-career-growth-and-development>
 - <https://ciaobellamoving.com/?p=3056>
 - <https://journals.sagepub.com/doi/10.1080/21632324.2016.1164941>
 - <https://www.populationmedia.org/the-latest/population-growth-and-water-scarcity>
 - <https://www.unicef.org/wash/water-scarcity>
 - <https://www.worldwildlife.org/threats/water-scarcity>
3. What do you aim to prove with your dataset and visualization?
 - We aim to prove that rapid urban population growth may negatively impact the percentage of the urban population with access to clean and safe drinking water in Southeast Asian countries. This is to support evidence based recommendations for more sustainable urban planning and water resource management.
 4. What is the narrative you want to write based on your data?
 - Start off with the relation of COVID 19 to rapid population growth in urban areas
 - Personal experience regarding relocation
 - Factors that may affect the decisions of citizens to relocate
 - Visualized data showing the comparisons and correlations
 - Propose a solution/recommendation
 - Flowchart of how the recommendation might work
 - Conclusion

6. Conclusion & Analysis:

Individually, write a conclusion and analysis to the activity.

Esteban, Prince Wally G.:

- This activity has helped me realize the deep connection between urbanization and water scarcity. Through data visualization, I was able to see how Southeast Asian countries are being impacted by this trend between 2018 and 2022.

Fernandez, Don Eleazar T.:

- I learned that as more people move to cities, it can become harder for everyone to get clean and safe water. By looking at the data, I saw that some country is having trouble keeping up with the growing number of people in urban areas. This made me understand that how important it is to plan better for water use and city development. In my home area, we also experienced water interruptions, so I can relate to this issue.

7. References:

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8. Assessment Rubric

