Phase 1: Ask

Problem Statement:

Youth unemployment is a persistent issue in Malaysia. Analyzing long-term data will help identify trends and inform strategic policy decisions by the Ministry of Economy, particularly in workforce development for young Malaysians aged 15-30.

Stakeholders:

- Ministry of Economy
- Bahagian Pembangunan Modal Ihsan
- Government decision-makers and program planners

Business Task:

Analyze trends in youth unemployment from 2016 to 2025 and identify key patterns that can help guide future programs or interventions.

Questions to Answer:

1. What are the annual trends in youth unemployment from 2016 to 2025?
2. What patterns are visible during and after major events like COVID-19?
3. Are unemployment rates improving or worsening over time?

Deliverables:

- Cleaned Excel dataset
- Pivot tables and charts showing unemployment trends
- Summary report with key findings and recommendations

Phase 2: Prepare

Missing Value & Formatting Check (Sheet Filter Review):

1. Applied filters to all columns
2. No missing values found
3. No obvious outliers or errors found

Cleanliness Summary:

- Date: No missing values. All dates are in standard YYYY-MM-DD format and follow a continuous monthly timeline from January 2016 to April 2025.
- Unemployed Persons (15-24 y/o): No missing values. All entries are numeric.
- Unemployment Rate (15-24 y/o): Complete data.
- Unemployed Persons (15-30 y/o): Fully populated.
  Values are within expected range.
- Unemployment Rate (15-30 y/o): No missing values or anomalies detected.

Cleaning Actions Taken:

No data cleaning was necessary. Dataset was already well-structured and analysis-ready. Only filters and formatting checks were applied for confirmation.

Phase 3: Process

Data Preparation in Google Sheets:

1. Duplicated the original dataset and renamed it Cleaned_Data for safe editing and analysis.
2. Verified that column headers were already well-structured and analysis-ready. No renaming was needed.
3. Added a Year column by using the formula =YEAR(Date) to extract the year from each row.
4. Formatted numeric columns and date values to ensure consistency.
5. Final sheet is ready for analysis using pivot tables and charts.

Phase 4: Analyze

Objective:

This phase focuses on analyzing trends and patterns in youth unemployment in Malaysia from 2016-2025, with special attention to the COVID-19 period.

4.1 Annual Unemployment Rate Analysis (2016-2025)

- Tool Used: Pivot Table
- What I Did:
  - Created pivot tables to calculate the average unemployment rate by year for both :
    - Ages 15-24 (u_rate_15_24)
    - Ages 15-30 (u_rate_15_30)
- Why: To observe long-term patterns and changes over a 10-year span.
- Insight:
  - Youth unemployment peaked around 2020-2021, then declined.
  - The 15-24 group experienced sharper fluctuations than the 15-30 group. This indicates more vulnerability to economic shifts.
  - The 15-30 group had smaller changes year-to-year, suggesting more employment stability in that wider age group.
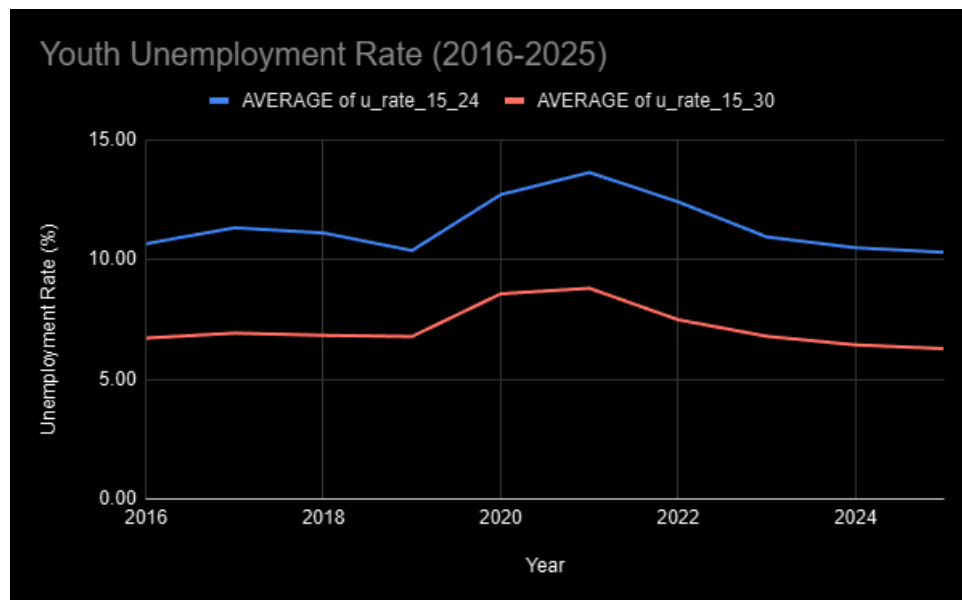- Evidence :

year	AVERAGE of u_rate_15_24	AVERAGE of u_rate_15_30
2016	10.66	6.72
2017	11.33	6.93
2018	11.11	6.83
2019	10.38	6.78
2020	12.71	8.57
2021	13.63	8.80
2022	12.41	7.48
2023	10.94	6.79
2024	10.49	6.43
2025	10.30	6.28

Figure 4.1.1 Pivot Table: Average Youth Unemployment Rates (2016–2025) by Age Group (15–24 and 15–30).

- Conclusion:
  - The data shows youth unemployment steadily rose, peaking at 2021, and then declined each year after. The trend is evident for both age groups, but the 15-24 group showed a sharper increase and reached a higher peak compared to the 15-30 group.

4.2: Visualizing Trends with a Line Chart

- Tool used: Google Sheets Chart
- What I Did:
  Created a line chart comparing average unemployment rates (15-24 and 15-30) over time.
- Why: Visualize rise and fall trends clearly. This is to show how unemployment moved up or down over time and to highlight the peak and recovery periods.
- Insight:
  - Clear visual spike during 2020-2021. Especially for the 15-24 group. Indicates the pandemic impact.
  - Recovery trend post-2021 for both age groups. This suggests gradual economic recovery.
  - The 15-24 group remains higher throughout. Signaling ongoing difficulty for the younger youth.
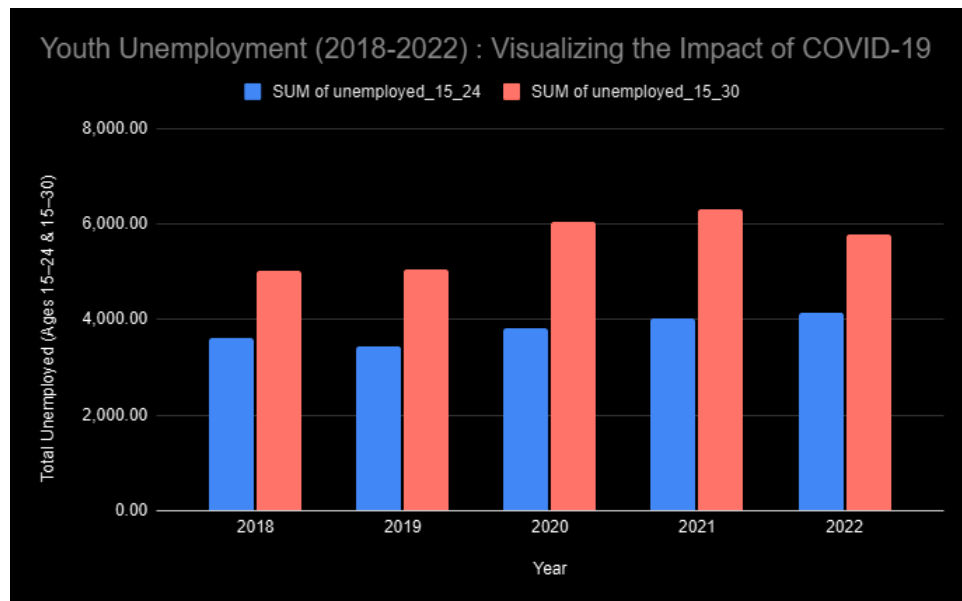- Evidence:

Figure 4.2.1 Line Chart: *Youth Unemployment Trends (2016–2025) Showing COVID-19 Spike and Recovery.*

- Conclusion:
  - The line chart visually reinforces the sharp spike and supports the idea of post-COVID recovery, especially for the 15-30 group.

4.3 : COVID-19 Impact – Bar Chart + Average Rate Table

- Tool Used:
  - Bar Chart
  - AVERAGEIF / AVERAGEIFS formulas
- What I Did:
  - Focused on pre-, during, and post-COVID years (2018-2022) for the bar chart to see the initial trend due to COVID-19 impact.
  - Used AVERAGEIF and AVERAGEIFS formulas to calculate average unemployment rates for both age groups to visualize the whole trend pre-, during, and post-COVID-19.
- Why:
  - To analyze COVID-19's specific impact using both age groups.
  - To provide a clear side-by-side comparison of how each group was affected before, during and after the pandemic.
- Insight:
  - Pre-COVID (2018-2019)
    - Both groups experienced stable unemployment numbers. The 15-30 group remained consistently higher than 15-24, which is expected due to the wider age range.
  - During COVID (2020-2021)
    - There was a sharp increase in unemployment for both groups, peaking in 2021.
  - Post-COVID (2022)
    - 15-30 Age Group: Shows a decline in total unemployment, indicating a rebound and absorption back into the workforce.
    - 15-24 Age Group: Still shows a slight increase, suggesting younger youth may be facing slower recovery. Possibly due to inexperience, ongoing education, or fewer entry-level opportunities.
  - 15-24 group:
    - Had the sharpest spike in unemployment rate during COVID (↑13.17%).
    - Post-COVID rate (11.18%) is still above pre-COVID levels, indicating a slower recovery.
  - 15-30 group:
    - Also saw an increase during COVID, but rebounded to near pre-COVID levels by 2022 (↓6.84%).

- Evidence:

Figure 4.3.1 Bar Chart: *Total Number of Unemployed Youth (2018-2022) for Age Groups 15-24 and 15-30.*

Period	15-24 Avg Rate	15-30 Avg Rate
Pre-COVID	10.87	6.81
During COVID	13.17	8.68
Post-COVID	11.18	6.84

Figure 4.3.2 Summary Table: *Average Unemployment Rates Pre-, During, and Post-COVID.*

- Conclusion:
  - Total unemployment rose during COVID. While the 15-30 group began to recover in 2022, the 15-24 group kept rising. Signaling possible deeper issues for younger youth.

Conclusion:

All analyses confirm that the COVID-19 pandemic had a significant impact on youth unemployment in Malaysia. While the broader 15-30 group shows signs of recovery in recent years, the 15-24 group remains more vulnerable, with higher unemployment rates and slower recovery. This suggests a need for targeted policy interventions and youth-focused workforce programs to support the younger segment more effectively.

Phase 5: Share

Objective:

The goal of this phase is to communicate the results of the analysis in a clear, concise, and actionable format for stakeholders, including the Ministry of Economy and other government decision-makers and program planners.

5.1 Executive Summary

From 2016 to 2025, youth unemployment in Malaysia remained relatively stable until 2019. A sharp spike occurred during the COVID-19 pandemic, peaking in 2021. While the broader 15-30 age group has shown steady recovery, unemployment in the 15-24 age group remains elevated post-COVID. This indicates slower reintegration into the workforce. This trend highlights the need for targeted employment strategies for the younger youth.
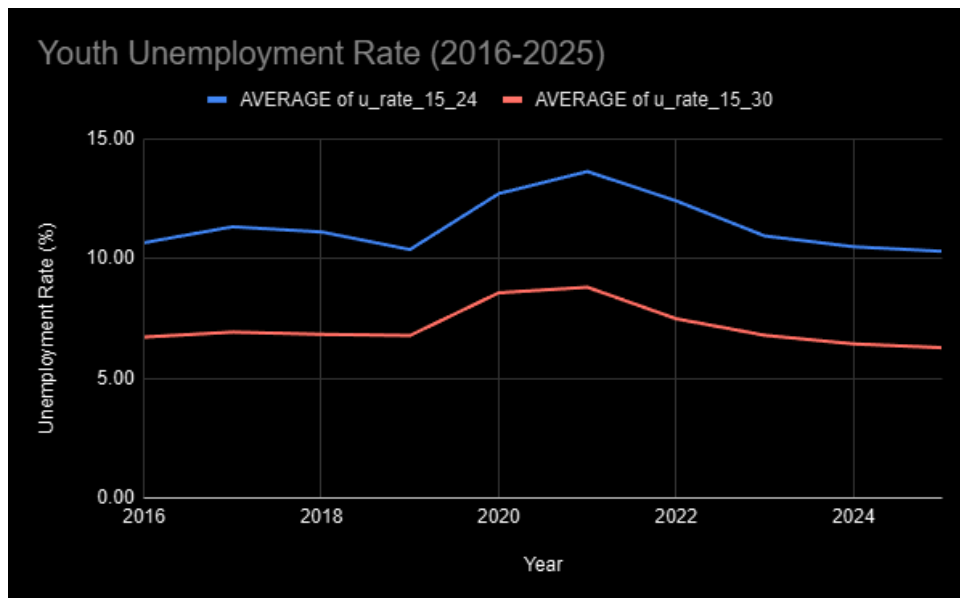
5.2 Key Visuals

1. Pivot Table - Annual Youth Unemployment Rates (2016-2025)

year	AVERAGE of u_rate_15_24	AVERAGE of u_rate_15_30
2016	10.66	6.72
2017	11.33	6.93
2018	11.11	6.83
2019	10.38	6.78
2020	12.71	8.57
2021	13.63	8.80
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*Figure 5.2.1 Pivot Table: Annual Unemployment Rates (2016-2025)
for Age Groups 15-24 and 15-30.*

Shows year-by-year average rates for both age groups.
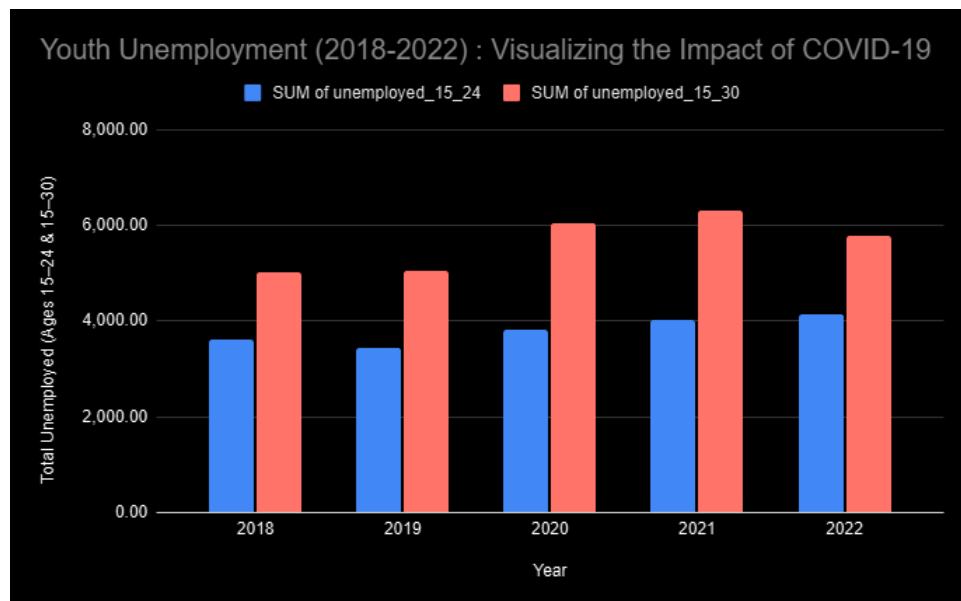Confirms peak in 2021 and post-COVID recovery.

2. Line Chart - Youth Unemployment Trend

*Figure 5.2.2 Line Chart: Unemployment Rate Trends Across Years
and Age Groups (15-24 vs 15-30).*

Cleary visualizes rising trend pre-COVID, peak during 2020-2021,
and gradual recovery post-COVID.

3. Bar Chart - Total Unemployed (2018-2022)

Figure 5.2.3 Bar Chart: *Total Unemployment During COVID Years (2018-2022).*

Focuses on COVID impact. Shows decline for 15-30 group in 2022, while 15-24 group remains elevated.

4. Summary Table - Pre-, During, Post-COVID Averages

Period	15-24 Avg Rate	15-30 Avg Rate
Pre-COVID	10.87	6.81
During COVID	13.17	8.68
Post-COVID	11.18	6.84

Figure 5.2.4 Table: *Comparison of Average Unemployment Rates Across COVID Phases.*

Groups years into pandemic phases to show
how each period compares across age groups.

5.3 Recommendations

Offer 3-4 actionable, realistic suggestions:

1. Targeted Reskilling Programs -
    Focus on 15-24 youth with training in digital, vocational, or growth industries.
2. Youth Employment Incentives
    Encourage businesses to hire young workers through subsidies or internships.
3. Strengthen Job Placement Services -
    Improve government job-matching platforms to help recent graduates transition faster.
4. Ongoing Monitoring of Youth Unemployment -
    Use frequent data tracking to act early during future economic disruptions