MTH208: Quiz 6

Instructions

- Download `q6_template.R` and rename it `q6_<ROLL>.R` (e.g., `q6_123456.R`).
- Copy and paste all relevant code in the renamed `q6_template.R` file provided. You MUST only submit relevant code. In the event of any error, you will receive 0 marks.
- Your script must run from a fresh R session without errors.
- A brief comment (1–2 sentences) before the plot summarizing whether the evidence supports or contradicts the claim.
- Deadline: 10:00 am. Submit `q6_<ROLL>.R` on helloIITK only.

The dataset `ships.csv` contains records of damage incidents on cargo ships. There are five variables in the dataset, including:
- `type`
- `incidents`: number of damage incidents
- and other characteristics such as `service` years, construction `year`, and operation `period`.

A colleague claims: "Ship type B is the least trustworthy, as it had the most accidents."

Your task is to **analyze this claim** using **correlation and base R plotting**.
You may find evidence that **proves** or **disproves** the claim; either conclusion is valid if well supported by your analysis.

Analysis Steps

1. Load the dataset `ships.csv`.
2. Compute:
   - The overall correlation between `incidents` and `service` years.
   - The correlation within each ship type.
3. Make a base R scatter plot showing `incidents` vs `service` years, colored by ship type.
4. Add a short comment before the plot explaining whether your results support or contradict the hypothesis.