

**Your predictive model from Task 3 is deployed in a company.  
Discuss:**

**Potential biases in the dataset (e.g., underrepresented teams).**

**How fairness tools like IBM AI Fairness 360 could address these biases.**

When deploying predictive models in real-world environments, ethical considerations are crucial. One key concern is **bias in the dataset**. If the data used to train the model underrepresents certain groups (e.g., based on gender, age, or team role), the model may produce **unfair or inaccurate predictions** for those individuals.

For example, if the breast cancer dataset used in Task 3 were repurposed for prioritizing company resource allocations, and it lacked sufficient data from underrepresented departments (e.g., smaller teams or non-technical staff), the model could systematically assign them lower priority. This could reinforce inequality in support distribution or decision-making.

To mitigate such risks, fairness toolkits like **IBM AI Fairness 360 (AIF360)** can be used. AIF360 provides metrics to detect bias and algorithms to reduce it. It allows developers to:

Measure fairness using tools like disparate impact or statistical parity.

Apply bias mitigation techniques like reweighting or adversarial debiasing.

Audit models before deployment to ensure equitable outcomes.

Using such tools ensures that predictive analytics supports inclusive, fair decision-making — rather than reinforcing hidden biases.