Case Study 1. Hourly Salary
Purpose: Simpson’s paradox

A researcher studying earnings of 100 men and 100 women working at a company found the following results:

<table>
<thead>
<tr>
<th>Avg. Hourly Salary</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men $16</td>
<td>100</td>
</tr>
<tr>
<td>Women $12</td>
<td>100</td>
</tr>
</tbody>
</table>

The message seems clear: men earn more than women, in terms of overall average hourly salary.

However, it is possible that, although the overall average salary for men is higher than that for women, in each job category, women earn more on average than men.

Question:
Construct such an example.
Case Study 2. Guaranteed Winner
Purpose: Introduction to statistical thinking

A firm advertises that for a fixed fee, say $10 or $20, it will send you its forecast of the winner of any upcoming basketball game, football game, boxing match or other sports event that you specify.

Furthermore the firm offers a money-back guarantee of forecast correctness: if prediction turns wrong, your money back.

Question: Will you purchase the forecast?