Fencing is a semi-contact sport that is based on sword fighting. There are three weapon types in fencing, epee, foil, and sabre. Fencing consists of bouts in which two fencers face-off against each other. During bouts fencers attempt to hit each other with their weapon within the valid target area. A bout is won by the first fencer to reach 15 touches, if the bout ends before either fencer has 15 touches, the fencer with the most touches is declared winner.

At the collegiate level the fencing season comes to a close with the NCAA Fencing Championships. The championship consists of a 24-fencer round-robin in which each fencer in the discipline faces each other in 5-touch bouts. Fencers are ranked based on descending indicator scores which is the difference in touches sent and touches received. The top 4 fencers from each discipline face each other off in a round of 15-touch semifinal and championship bouts. The fencer to win the championship places number 1 in the discipline.

This fencing dataset (<fencing.csv>) contains the final results for each individual fencer in the 2024 NCAA Fencing Championships hosted at Ohio State University. It has data for both men and women in all three weapon types. Investigating the number of *Victories* for Ivy League and Non-Ivy League fencers in this dataset can reveal patterns in NCAA fencing.

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| **Variable** | **Description** |
| *Place* | The place the fencer finished the tournament in. |
| *Tied* | If the fencer was tied for their place with someone else, *TRUE* or *FALSE*. |
| *Name* | The fencer's name in *first name last name* order. |
| *School* | The school the fencer is representing. |
| *Victories* | The total victories the fencer had in the tournament. |
| *Bouts* | The number of bouts the fencer was in in the tournament. |
| *Pct* |  |
| *TS* | The total touches sent by the fencer in the tournament, meaning touches they scored against opponents. |
| *TR* | The total touches received by the fencer in the tournament, meaning touches scored against the fencer. |
| *Ind* |  |
| *Gender* | The fencer's gender, *Women* or *Men*. |
| *Ivy* | If the fencer's school is in the Ivy League, *Ivy* or *Non-Ivy*. |

1. Create a subset for Ivies and another for Non-Ivies. Write down the number of Ivy students and the number of Non-Ivy students.

**Ivy:**   **Non-Ivy:**

1. Find the mean *Victories* for Ivies and Non-Ivies and write them down below.

**Ivy:**   **Non-Ivy:**

1. Find the standard deviation of *Victories* for Ivies and Non-Ivies and write them down below.

**Ivy:**   **Non-Ivy:**

1. Create a side-by-side boxplot of *Victories* for Ivies and Non-Ivies, compare the distributions.
2. Test for a discernible difference in the mean number of *Victories* for Ivy league fencers and Non-Ivy league fencers.

**H0: Ha:**