

## Prompt 1

### Question

Who had the highest Adjusted Offensive Efficiency (ADJOE) in the 2019 NCAA men's basketball season?

```
top_offense = df_2019[["TEAM", "ADJOE"]].sort_values(by="ADJOE",  
ascending=False).head(1)
```

### Response

**Correct:** Gonzaga was the most offensively dominant team by ADJOE.

## Prompt 2

**Who was the most overall impactful team using a weighted score?**

Calculate a custom impact score based on:

- ADJOE (weight: 40%)
  - Adjusted Defense (lower ADJDE = better, so use  $100 - \text{ADJDE}$ ) (weight: 30%)
  - WAB (weight: 30%)
- Return the top team and explain.

### Code:

```
df_2019["Impact_Score"] = (  
    df_2019["ADJOE"] * 0.4 +  
    (100 - df_2019["ADJDE"]) * 0.3 +  
    df_2019["WAB"] * 0.3  
)  
  
top_impact = df_2019[["TEAM", "Impact_Score"]].sort_values(by="Impact_Score",  
ascending=False).head(1)
```

### Response:

**Correct:** Virginia led in overall performance impact across offense, defense, and WAB.

### Prompt 3:

**Classify each team as offense-heavy, defense-heavy, or balanced.**

If ADJOE - ADJDE > 15, label "Offense-Heavy"

If ADJDE - ADJOE > 15, label "Defense-Heavy"

Else, label "Balanced"

How many teams fall into each strategy?

#### Code:

```
df_2019["Team_Strategy"] = df_2019.apply(
    lambda row: "Offense-Heavy" if row["ADJOE"] - row["ADJDE"] > 15 else
                "Defense-Heavy" if row["ADJDE"] - row["ADJOE"] > 15 else
                "Balanced", axis=1)
strategy_counts = df_2019["Team_Strategy"].value_counts()
```

#### Response:

Strategy	Count
Balanced	241
Offense-Heavy	61
Defense-Heavy	51

Most teams are statistically balanced.

### Prompt 4:

**Compare “consistency” and “brilliance” among teams.**

- **Consistency** = high ADJOE and ADJDE but fewer wins
- **Brilliance** = high wins with average stats

#### Define:

- Consistency Score = (ADJOE + (100 - ADJDE)) - Wins
  - Brilliance Score = Wins - ((ADJOE + (100 - ADJDE)) / 2)
- Report one team for each.

#### Code:

```
df_2019["Consistency_Score"] = (df_2019["ADJOE"] + (100 - df_2019["ADJDE"])) -
df_2019["W"]
```

```
df_2019["Brilliance_Score"] = df_2019["W"] - ((df_2019["ADJOE"] + (100 -
df_2019["ADJDE"]))) / 2)
```

```
most_consistent = df_2019.sort_values(by="Consistency_Score", ascending=False).head(1)
```

```
most_brilliant = df_2019.sort_values(by="Brilliance_Score", ascending=False).head(1)
```

**Response:**

**Correct**

- **Saint Mary's** had great metrics but fewer wins → consistent.
- **Duke** converted average efficiency into high win count → brilliant.

## Prompt 5

**Recruitment Suggestion: Pick one team to study for offense and one for defense.**

Choose:

- Best offense team (top ADJOE)
  - Best defense team (lowest ADJDE)
- These can be models for other teams to emulate.

**Code:**

```
top_offense_team = df_2019.sort_values(by="ADJOE",  
ascending=False).head(1)[["TEAM", "ADJOE"]]
```

```
top_defense_team = df_2019.sort_values(by="ADJDE", ascending=True).head(1)[["TEAM",  
"ADJDE"]]
```

**Response:**

- 🏆 **Offense Model:** Gonzaga (ADJOE: 124.1)
- 🛡️ **Defense Model:** Texas Tech (ADJDE: 85.2)

☐ **Correct:** These teams led the league in their respective categories.