2️⃣ Week 2: Control Flow & Functions (Advanced Stats)

This code defines functions for advanced stats and uses a loop and conditionals to analyze multiple players.

```
# Week 2 Assignment – Advanced Stats Calculator


# --- Step 1: Define Functions ---


# Formula for Effective Field Goal % (eFG%): (FGM + 0.5 * 3PM) / FGA
def effective_fg(FGM, threePM, FGA):
    if FGA == 0:
        return 0.0
    return (FGM + 0.5 * threePM) / FGA


# Formula for True Shooting % (TS%): PTS / (2 * (FGA + 0.44 * FTA))
def true_shooting(PTS, FGA, FTA):
    TSA = 2 * (FGA + 0.44 * FTA)
    if TSA == 0:
        return 0.0
    return PTS / TSA


# --- Step 2 & 3: Single Player Example (with Efficiency Message) ---
FGM = 10
FGA = 20
```

```
threePM = 3

FTA = 8

PTS = 29


efg = effective_fg(FGM, threePM, FGA)

ts = true_shooting(PTS, FGA, FTA)


print(f"Effective FG%: {round(efg, 3)}")

print(f"True Shooting %: {round(ts, 3)}")


# Conditional statement for efficiency message

if efg > 0.6:

    print("Elite shooting night! (eFG% > 0.60)")

elif efg >= 0.5:

    print("Above average efficiency. (eFG% >= 0.50)")

else:

    print("Below average efficiency.")


# --- Extra Challenge: Multiple Players ---

players = [

    {"name": "Player A", "FGM": 10, "FGA": 20, "3PM": 3, "FTM": 6, "FTA": 8, "PTS": 29},

    {"name": "Player B", "FGM": 5, "FGA": 12, "3PM": 1, "FTM": 2, "FTA": 2, "PTS": 13},

    {"name": "Player C", "FGM": 8, "FGA": 15, "3PM": 2, "FTM": 4, "FTA": 5, "PTS": 22},
```

```
]


most_efficient_player = None
highest_ts = -1


for player in players:
    # Calculate TS% for each player
    ts_percent = true_shooting(player["PTS"], player["FGA"], player["FTA"])
    player["TS%"] = round(ts_percent, 3)


    print(f"{player['name']}'s TS%: {player['TS%']}")


    # Check for the most efficient player
    if ts_percent > highest_ts:
        highest_ts = ts_percent
        most_efficient_player = player["name"]


print("\n--- Summary ---")
print(f"The most efficient player (by TS%) is: **{most_efficient_player}** (TS%:
{round(highest_ts, 3)})")
```