Soowan's Algorithm - Python

Required .csv Files:

- **peaks_pre0316.csv** → to automatically synchronize clapping peaks
- **peaks_post0316.csv** → to automatically synchronize clapping peaks
- **bootcamp.csv** → to rename 'BC#' to 'BC#-Exercise' files
- **power.csv** → to rename 'Power1' & 'Power2' to 'PowerR' or 'PowerL' files

Objective 1

OBJECTIVE 1 → CLEAN (BB & BC & SCA)

MANUAL CLEAN: FOR PARTICIPANT → ALL GAMES (BB & BC & SCA)

1. **Data File Name → Before Clean**
   - */Users/soowan/Documents/PEARL/Data/Data_0551/2023_**0601_P28**/OP_**0601_P28***
     - **OP (Bootle Blast):** *2023**0601**-**Power1**-Data.csv*
     - **OP (Boot Camp):** *2023**0601**-**BC1**-Data.csv*
     - **OP (Clinical):** *2023**0601**-**Single1**-Data.csv*
   - */Users/soowan/Documents/PEARL/Data/Data_0551/2023_**0601_P28**/MA_**0601_P28***
     - **MA (Bootle Blast):** *2023**0601**-**Power1**.csv*
     - **MA (Boot Camp):** *2023**0601**-**BC1**.csv*
     - **MA (Clinical):** *2023**0601**-**Single**.csv*
2. **Python Script → Clean Bootle Blast (BB) & Boot Camp (BC) & Clinical (SCA) Files**
   - **OB1_clean_pre0316.py**
     - **(OB1_clean_pre0316_fun.py)**
   - **OB1_clean_post0316.py**
     - **(OB1_clean_post0316_fun.py)**
3. **Data File Name → After Clean**
   - */Users/soowan/Downloads/*
     - **OP (Bootle Blast):** *2023**0601**-**P28**-**PowerR**-Data-OP-CLEAN.csv*
     - **OP (Boot Camp):** *2023**0601**-**P28**-**BC1-SeatStarJump**-Data-OP-CLEAN.csv*
     - **OP (Clinical):** *2023**0601**-**P28**-**Single1**-Data-OP-CLEAN.csv*
     - **MA (Bootle Blast):** *2023**0601**-**P28**-**PowerR**-MA-CLEAN.csv*
     - **MA (Boot Camp):** *2023**0601**-**P28**-**BC1-SeatStarJump**-MA-CLEAN.csv*
     - **MA (Clinical):** *2023**0601**-**P28**-**Single1**-MA-CLEAN.csv*

AUTOMATIC CLEAN: FOR PARTICIPANT → ALL GAMES (BB & BC & SCA)

1. **Data File Name → Before Clean**
   - */Users/soowan/Documents/PEARL/Data/Data_0551/2023_**0601_P28**/OP_**0601_P28***
     - **OP (Bootle Blast):** *2023**0601**-**Power1**-Data.csv*
     - **OP (Boot Camp):** *2023**0601**-**BC1**-Data.csv*
     - **OP (Clinical):** *2023**0601**-**Single1**-Data.csv*
   - */Users/soowan/Documents/PEARL/Data/Data_0551/2023_**0601_P28**/MA_**0601_P28***
     - **MA (Bootle Blast):** *2023**0601**-**Power1**.csv*
     - **MA (Boot Camp):** *2023**0601**-**BC1**.csv*
     - **MA (Clinical):** *2023**0601**-**Single**.csv*
2. **Python Script → Clean Bootle Blast (BB) & Boot Camp (BC) & Clinical (SCA) Files**
   - **OB1_clean_pre0316_auto.py**
     - **(OB1_clean_pre0316_fun_auto.py)**
   - **OB1_clean_post0316_auto.py**
     - **(OB1_clean_post0316_fun_auto.py)**

3. **Data File Name → After Clean**
    - */Users/soowan/Documents/PEARL/Data/Data_0551/2023_**0601_P28**/Auto_Clean_**0601_P28***
        - **OP (Bootle Blast):** *2023**0601**-**P28**-**PowerR**-Data-OP-CLEAN.csv*
        - **OP (Boot Camp):** *2023**0601**-**P28**-**BC1-SeatStarJump**-Data-OP-CLEAN.csv*
        - **OP (Clinical):** *2023**0601**-**P28-Single1**-Data-OP-CLEAN.csv*
        - **MA (Bootle Blast):** *2023**0601**-**P28**-**PowerR**-MA-CLEAN.csv*
        - **MA (Boot Camp):** *2023**0601**-**P28**-**BC1-SeatStarJump**-MA-CLEAN.csv*
        - **MA (Clinical):** *2023**0601-P28-Single1-**MA-CLEAN.csv*

OBJECTIVE 1 → ANALYZE (BB vs BC)

MANUAL ANALYSIS: FOR PARTICIPANT → ALL GAMES (BB vs BC)

1. **Data File Name → Before Analysis**
   - */Users/soowan/Documents/PEARL/Data/Data_0551/2023_**0601_P28**/Clean_**0601_P28***
     - **OP (Bootle Blast):** *2023**0601**-**P28**-**PowerR**-Data-OP-CLEAN.csv*
     - **OP (Boot Camp):** *2023**0601**-**P28**-**BC1-SeatStarJump**-Data-OP-CLEAN.csv*
     - **MA (Bootle Blast):** *2023**0601**-**P28**-**PowerR**-MA-CLEAN.csv*
     - **MA (Boot Camp):** *2023**0601**-**P28**-**BC1-SeatStarJump**-MA-CLEAN.csv*
2. **Python Script → Analysis with Bootle Blast (BB) Files**
   - **OB1_autoanalysis_1.py**
     - **(OB1_autoanalysis_1_functions.py)**
   - **OB1_autoanalysis_2.py**
     - **(OB1_autoanalysis_2_functions.py)**
   - **OB1_autoanalysis_3.py**
     - **(OB1_autoanalysis_3_functions.py)**
   - **OB1_autoanalysis_4.py**
     - **(OB1_autoanalysis_4_functions.py)**
   - **OB1_autoanalysis_5.py**
     - **(OB1_autoanalysis_5_functions.py)**
3. **Python Script → Analysis with Boot Camp (BC) Files**
   - **OB1_autoanalysis_1_bootcamp.py**
     - **(OB1_autoanalysis_1_functions.py)**
   - **OB1_autoanalysis_2_bootcamp.py**
     - **(OB1_autoanalysis_2_functions.py)**
   - **OB1_autoanalysis_3_bootcamp.py**
     - **(OB1_autoanalysis_3_functions.py)**
4. **Data File Name → After Analysis**
   - */Users/soowan/Downloads/*
   - **OP+MA (Bootle Blast):**
     - *2023**0601**-**P28**-**PowerR**-Joint_z.csv*
     - *2023**0601**-**P28**-**PowerR**-Joint_r.csv*
     - *2023**0601**-**P28**-**PowerR**-Joint_p.csv*
     - *2023**0601**-**P28**-**PowerR**-cov.csv*
     - *2023**0601**-**P28**-**PowerR**-angle.csv*
     - *2023**0601**-**P28**-**PowerR**-reach.csv*
     - *2023**0601**-**P28**-**PowerR**-speed.csv*
   - **OP+MA (Boot Camp):**
     - *2023**0601**-**P28**-**BC1-SeatStarJump**-Joint_z.csv*
     - *2023**0601**-**P28**-**BC1-SeatStarJump**-Joint_r.csv*
     - *2023**0601**-**P28**-**BC1-SeatStarJump**-Joint_p.csv*
     - *2023**0601**-**P28**-**BC1-SeatStarJump**-cov.csv*

- *2023**0601**-**P28**-**BC1-SeatStarJump**-angle.csv*

AUTOMATIC ANALYSIS: FOR GAME → ALL PARTICIPANTS (BB vs BC)

1. **Data File Name → Before Analysis**
   - */Users/soowan/Documents/PEARL/Data/Data_0551/2023_**0601_P28**/Clean_**0601_P28***
     - **OP (Bootle Blast):** *2023**0601**-**P28**-**PowerR**-Data-OP-CLEAN.csv*
     - **OP (Boot Camp):** *2023**0601**-**P28**-**BC1-SeatStarJump**-Data-OP-CLEAN.csv*
     - **MA (Bootle Blast):** *2023**0601**-**P28**-**PowerR**-MA-CLEAN.csv*
     - **MA (Boot Camp):** *2023**0601**-**P28**-**BC1-SeatStarJump**-MA-CLEAN.csv*
2. **Python Script → Analysis with Bootle Blast (BB) Files**
   - **OB1_1_analysis.py**
     - **(OB1_1_functions.py)**
   - **OB1_2_analysis.py**
     - **(OB1_2_functions.py)**
   - **OB1_3_analysis.py**
     - **(OB1_3_functions.py)**
   - **OB1_4_analysis.py**
     - **(OB1_4_functions.py)**
   - **OB1_5_analysis.py**
     - **(OB1_5_functions.py)**
3. **Python Script → Analysis with Boot Camp (BC) Files**
   - **OB1_1_analysis_bootcamp.py**
     - **(OB1_1_functions.py)**
   - **OB1_2_analysis_bootcamp.py**
     - **(OB1_2_functions.py)**
   - **OB1_3_analysis_bootcamp.py**
     - **(OB1_3_functions.py)**
4. **Data File Name → After Analysis**
   - **OP+MA (Bootle Blast):**
   - */Users/soowan/Documents/PEARL/Data/Data_OB1/1_Coordinate/**PowerR***
     - *2023**0601**-**P28**-**PowerR**-Joint_z.csv*
     - *2023**0601**-**P28**-**PowerR**-Joint_r.csv*
     - *2023**0601**-**P28**-**PowerR**-Joint_p_val.csv*
   - */Users/soowan/Documents/PEARL/Data/Data_OB1/2_Segment/**PowerR***
     - *2023**0601**-**P28**-**PowerR**-cov.csv*
   - */Users/soowan/Documents/PEARL/Data/Data_OB1/3_Angle/**PowerR***
     - *2023**0601**-**P28**-**PowerR**-angle.csv*
   - */Users/soowan/Documents/PEARL/Data/Data_OB1/4_Reach/**PowerR***
     - *2023**0601**-**P28**-**PowerR**-reach.csv*
   - */Users/soowan/Documents/PEARL/Data/Data_OB1/5_Speed/**PowerR***
     - *2023**0601**-**P28**-**PowerR**-speed.csv*
   - **OP+MA (Boot Camp):**
   - */Users/soowan/Documents/PEARL/Data/Data_OB1/1_Coordinate/BC_Boot_Camp/**SeatStarJump***

        - *2023**0601**-**P28**-**BC1-SeatStarJump**-Joint_z.csv*
        - *2023**0601**-**P28**-**BC1-SeatStarJump**-Joint_r.csv*
        - *2023**0601**-**P28**-**BC1-SeatStarJump**-Joint_p_val.csv*
    - */Users/soowan/Documents/PEARL/Data/Data_OB1/2_Segment/BC_Boot_Camp/**SeatStarJump***
        - *2023**0601**-**P28**-**BC1-SeatStarJump**-cov.csv*
    - */Users/soowan/Documents/PEARL/Data/Data_OB1/3_Angle/BC_Boot_Camp/**SeatStarJump***
        - *2023**0601**-**P28**-**BC1-SeatStarJump**-angle.csv*
    - **OP+MA (Boot Camp GROUPED): Strength, Cardio, Seated, Static**
    - */Users/soowan/Documents/PEARL/Data/Data_OB1/**3_Angle/BC_Strength***
        - *2023**0601**-**STRENGTH**-angle.csv*
    - */Users/soowan/Documents/PEARL/Data/Data_OB1/**3_Angle/BC_Cardio***
        - *2023**0601**-**CARDIO**-angle.csv*
    - */Users/soowan/Documents/PEARL/Data/Data_OB1/**3_Angle/BC_Seated***
        - *2023**0601**-**SEATED**-angle.csv*
    - */Users/soowan/Documents/PEARL/Data/Data_OB1/**3_Angle/BC_Static***
        - *2023**0601**-**STATIC**-angle.csv*

Objective 2

OBJECTIVE 2 → RENAMERAW (BC & SCA)

AUTOMATIC RENAMERAW: FOR PARTICIPANT → ALL GAMES (BC & SCA)

1. **Data File Name → Before RenameRaw**
   - */Users/soowan/Documents/PEARL/Data/Data_0551/2023_**0601_P28**/OP_**0601_P28***
     - **OP (Boot Camp):** *2023**0601**-**BC1**-Data.csv*
     - **OP (Clinical):** *2023**0601**-**Single1**-Data.csv*
   - */Users/soowan/Documents/PEARL/Data/Data_0551/2023_**0601_P28**/MA_**0601_P28***
     - **MA (Boot Camp):** *2023**0601**-**BC1**.csv*
     - **MA (Clinical):** *2023**0601**-**Single**.csv*
2. **Python Script → Clean Boot Camp (BC) & Clinical (SCA) Files**
   - **OB2_rename_raw_auto.py**
3. **Data File Name → After RenameRaw**
   - */Users/soowan/Documents/PEARL/Data/Data_OB2/**Raw_BC_Count***
     - **OP (Boot Camp):** *2023**0601**-**P28**-**BC1**-**SeatStarJump**-Data-OP-CLEAN.csv*
     - **MA (Boot Camp):** *2023**0601**-**P28**-**BC1**-**SeatStarJump**-MA-CLEAN.csv*
   - */Users/soowan/Documents/PEARL/Data/Data_OB2/**Raw_BC_Timer***
     - **OP (Boot Camp):** *2023**0516**-**P27**-**BC9**-**SeatClfStr**-Data-OP-CLEAN.csv*
     - **MA (Boot Camp):** *2023**0516**-**P27**-**BC9**-**SeatClfStr**-MA-CLEAN.csv*
   - */Users/soowan/Documents/PEARL/Data/Data_OB2/Raw_SCA_SLS/**SingleL***
     - **OP (Clinical):** *2023**0601**-**P28**-**BC**-**SLS**-Data-OP-CLEAN.csv*
     - **MA (Clinical):** *2023**0601**-**P28**-**BC**-**SLS**-MA-CLEAN.csv*
   - */Users/soowan/Documents/PEARL/Data/Data_OB2/Raw_SCA_SLS/**SingleR***
     - **OP (Clinical):** *2023**0601**-**P28**-**BC**-**SLS**-Data-OP-CLEAN.csv*
     - **MA (Clinical):** *2023**0601**-**P28**-**BC**-**SLS**-MA-CLEAN.csv*
   - */Users/soowan/Documents/PEARL/Data/Data_OB2/Raw_SCA_STS/**Five***
     - **OP (Clinical):** *2023**0601**-**P28**-**BC**-**StS**-Data-OP-CLEAN.csv*
     - **MA (Clinical):** *2023**0601**-**P28**-**BC**-**StS**-MA-CLEAN.csv*
   - */Users/soowan/Documents/PEARL/Data/Data_OB2/Raw_SCA_STS/**Thirty***
     - **OP (Clinical):** *2023**0601**-**P28**-**BC**-**StS**-Data-OP-CLEAN.csv*
     - **MA (Clinical):** *2023**0601**-**P28**-**BC**-**StS**-MA-CLEAN.csv*

OBJECTIVE 2 → CLEAN (BC & SCA)

AUTOMATIC CLEAN: FOR PARTICIPANT → ALL GAMES (BC & SCA)

1. **Data File Name → Before Clean**
    - */Users/soowan/Documents/PEARL/Data/Data_0551/2023_**0601_P28**/OP_**0601_P28***
        - **OP (Boot Camp):** *2023**0601**-**BC1**-Data.csv*
        - **OP (Clinical):** *2023**0601**-**Single1**-Data.csv*
    - */Users/soowan/Documents/PEARL/Data/Data_0551/2023_**0601_P28**/MA_**0601_P28***
        - **MA (Boot Camp):** *2023**0601**-**BC1**.csv*
        - **MA (Clinical):** *2023**0601**-**Single**.csv*
2. **Python Script → Clean Boot Camp (BC) & Clinical (SCA) Files**
    - **OB2_clean_raw_auto.py**
3. **Data File Name → After Clean**
    - */Users/soowan/Documents/PEARL/Data/Data_OB2/**Clean_BC_Count***
        - **OP (Boot Camp):** *2023**0601**-**P28**-**BC1**-**SeatStarJump**-Data-OP-CLEAN.csv*
        - **MA (Boot Camp):** *2023**0601**-**P28**-**BC1**-**SeatStarJump**-MA-CLEAN.csv*
    - */Users/soowan/Documents/PEARL/Data/Data_OB2/**Clean_BC_Timer***
        - **OP (Boot Camp):** *2023**0516**-**P27**-**BC9**-**SeatClfStr**-Data-OP-CLEAN.csv*
        - **MA (Boot Camp):** *2023**0516**-**P27**-**BC9**-**SeatClfStr**-MA-CLEAN.csv*
    - */Users/soowan/Documents/PEARL/Data/Data_OB2/Clean_SCA_SLS/**SingleL***
        - **OP (Clinical):** *2023**0601**-**P28**-**BC**-**SLS**-Data-OP-CLEAN.csv*
        - **MA (Clinical):** *2023**0601**-**P28**-**BC**-**SLS**-MA-CLEAN.csv*
    - */Users/soowan/Documents/PEARL/Data/Data_OB2/Clean_SCA_SLS/**SingleR***
        - **OP (Clinical):** *2023**0601**-**P28**-**BC**-**SLS**-Data-OP-CLEAN.csv*
        - **MA (Clinical):** *2023**0601**-**P28**-**BC**-**SLS**-MA-CLEAN.csv*
    - */Users/soowan/Documents/PEARL/Data/Data_OB2/Clean_SCA_STS/**Five***
        - **OP (Clinical):** *2023**0601**-**P28**-**BC**-**StS**-Data-OP-CLEAN.csv*
        - **MA (Clinical):** *2023**0601**-**P28**-**BC**-**StS**-MA-CLEAN.csv*
    - */Users/soowan/Documents/PEARL/Data/Data_OB2/Clean_SCA_STS/**Thirty***
        - **OP (Clinical):** *2023**0601**-**P28**-**BC**-**StS**-Data-OP-CLEAN.csv*
        - **MA (Clinical):** *2023**0601**-**P28**-**BC**-**StS**-MA-CLEAN.csv*

OBJECTIVE 2 → ANALYZE (Count vs Timer)

AUTOMATIC ANALYSIS: FOR GAME → ALL PARTICIPANTS (Count vs Timer)

1. **Data File Name → Before Ajmal's Analysis**

   ******Manually Copy/Paste Data Files to Use with Ajmal's Algorithm*******

   - ***OB2_copy_before_ajmal.py***
   - */Users/soowan/Documents/PEARL/Data/Data_OB2/**Raw_BC_Timer***
     - **OP (Boot Camp):** *2023**0314**-P02-BC2-Run**-Data-OP-CLEAN.csv*
     - **MA (Boot Camp):** *2023**0314**-P02-BC2-Run**-MA-CLEAN.csv*
   - */Users/soowan/Documents/PEARL/Data/Data_OB2/**Raw_BC_Count***
     - **OP (Boot Camp):** *2023**0601**-P28-BC1-SeatStarJump**-Data-OP-CLEAN.csv*
     - **MA (Boot Camp):** *2023**0601**-P28-BC1-SeatStarJump**-MA-CLEAN.csv*
   - **Copy To…**
   - */Users/soowan/Documents/PEARL/Data/Data_OB2/**OB2_Raw***
     - **OP (Boot Camp):** *2023**0601**-P28-BC1-SeatStarJump**-Data-OP-CLEAN.csv*
     - **MA (Boot Camp):** *2023**0601**-P28-BC1-SeatStarJump**-MA-CLEAN.csv*

2. **Unity Script → Ajmal's Analysis**

3. **Data File Name →After Ajmal's Analysis + Before Soowan's Analysis**

   ******Manually Copy/Paste Data Files to Use with Soowan's Algorithm*******

   - ***OB2_copy_before_soowan.py***
   - */Users/soowan/Library/Application Support/Holland Bloorview/BBLogVisualizer/Saves/001/Logs*
     - ***OP-P02**-20230603-162511-ExerRep-**Run**.csv*
     - ***MA-P02**-20230603-161951-ExerRep-**Run**.csv*
     - ***OP-P28**-20230603-162511-ExerRep-**SeatStarJump**.csv*
     - ***MA-P28**-20230603-161951-ExerRep-**SeatStarJump**.csv*
   - **Copy To…**
   - */Users/soowan/Documents/PEARL/Data/Data_OB2/**Results_Ajmal/Timer***
     - ***OP-P02**-20230603-162511-ExerRep-**Run**.csv*
     - ***MA-P02**-20230603-161951-ExerRep-**Run**.csv*
   - */Users/soowan/Documents/PEARL/Data/Data_OB2/**Results_Ajmal/Count***
     - ***OP-P28**-20230603-162511-ExerRep-**SeatStarJump**.csv*
     - ***MA-P28**-20230603-161951-ExerRep-**SeatStarJump**.csv*

4. **Python Script → Soowan's Analysis**
   a. **OB2_analysis_timer.py**
   b. **OB2_analysis_count.py**

5. **Data File Name →After Soowan's Analysis**
   a. **OP+MA (Timer):**
   b. */Users/soowan/Documents/PEARL/Data/Data_OB2/**Results_Soowan/Timer***
      i. *2023-**SeatClfStr**-TIMER.csv*
      ii. *2023-**Run**-TIMER.csv*
      iii. *2023-**ForStep**-TIMER.csv*
      iv. *2023-**CalfStr**-TIMER.csv*
      v. *2023-**TdemStnce**-TIMER.csv*

c. OP+MA (Count):

*d. /Users/soowan/Documents/PEARL/Data/Data_OB2/**Results_Soowan/Count***

*i. 2023-**Sqt**-COUNT.csv*