DATA STRUCTURES

CT077-3-2-DSTR

KOH CHUN WEI TP067580

LING JIE WEI TP067563

LIEW YI XIAN TP068306

NANG ZHEN NING TP069063

```
:\AssignmentG1_Part02> g++ main.cpp Player.cpp SpectatorQueue.cpp Tournament.cpp
:\AssignmentG1_Part02> ./a
```

Compile all source files into an executable (a.out) by default.

```
eSports Championship System
1. Register Player
2. Check-in Player
3. Schedule Match
4. Record Match Result
5. Add Spectator
6. Display Players
7. Display Match History
8. Display Spectators
9. Record Players Performance
10. Exit
Enter choice:
```

The Main Page to display all functions is useful for the eSports Championship System.

TASK 1: MATCH SCHEDULING & PLAYER PROGRESSION

KOH CHUN WEI TP067580

```
Loaded 50 players from PLAYER.txt
[DEBUG] Total checked-in players: 12
[DEBUG] Sorted players:
ID: 38, Rank: 1, CheckedIn: true
ID: 1, Rank: 2, CheckedIn: true
ID: 29, Rank: 3, CheckedIn: true
ID: 13, Rank: 4, CheckedIn: true
ID: 11, Rank: 5, CheckedIn: true
ID: 19, Rank: 7, CheckedIn: true
ID: 45, Rank: 10, CheckedIn: true
ID: 10, Rank: 11, CheckedIn: true
[DEBUG] Assigned: 38 vs. 10
[DEBUG] Assigned: 1 vs. 45
[DEBUG] Assigned: 29 vs. 19
[DEBUG] Assigned: 13 vs. 11
```

Enter the Choice of 4 (Record Match Result) on the main page, the program will load 50 players, identify the players who checked in, select the top 8 by rank, and pair them into 4 first-round tournament matches based on seeding.

```
Starting Round 1
[DEBUG] Displaying round 1

QuarterFinals:
--------------------------------------------------------------------------------------------
Round 1: 38   (Isa       [Rank: 1 ]) vs. 10   (Tan       [Rank:11]) -> Winner: TBD
Round 1: 1    (Ming      [Rank: 2 ]) vs. 45   (Kevin     [Rank:10]) -> Winner: TBD
Round 1: 29   (Shawn     [Rank: 3 ]) vs. 19   (Darren    [Rank:7 ]) -> Winner: TBD
Round 1: 13   (Aiden     [Rank: 4 ]) vs. 11   (Jasper    [Rank:5 ]) -> Winner: TBD
[DEBUG] Displaying round 1
[DEBUG] Processing node: Round 1, P1=38, P2=10
[DEBUG] Resolving match: round = 1, player1_id = 38, player2_id = 10
Match 1: 38 vs. 10
Enter winner ID: 38
[DEBUG] Received input: '38'
Enter kills for Isa: 5
Enter deaths for Isa: 0
Enter kills for Tan: 0
Enter deaths for Tan: 5
[DEBUG] Updated parent: P1=38, P2=
[DEBUG] Processing node: Round 1, P1=1, P2=45
[DEBUG] Resolving match: round = 1, player1_id = 1, player2_id = 45
Match 1: 1 vs. 45
Enter winner ID: 45
[DEBUG] Received input: '45'
Enter kills for Kevin: 3
Enter deaths for Kevin: 2
Enter kills for Ming: 2
Enter deaths for Ming: 3
[DEBUG] Updated parent: P1=38, P2=45
[DEBUG] Processing node: Round 1, P1=29, P2=19
[DEBUG] Resolving match: round = 1, player1_id = 29, player2_id = 19
Match 1: 29 vs. 19
Enter winner ID: 29
[DEBUG] Received input: '29'
Enter kills for Shawn: 6
Enter deaths for Shawn: 2
Enter kills for Darren: 2
Enter deaths for Darren: 6
[DEBUG] Updated parent: P1=29, P2=
[DEBUG] Processing node: Round 1, P1=13, P2=11
[DEBUG] Resolving match: round = 1, player1_id = 13, player2_id = 11
Match 1: 13 vs. 11
Enter winner ID: 11
[DEBUG] Received input: '11'
Enter kills for Jasper: 7
Enter deaths for Jasper: 3
Enter kills for Aiden: 3
Enter deaths for Aiden: 7
[DEBUG] Updated parent: P1=29, P2=11
[DEBUG] Displaying round 1 after processing

QuarterFinals:
--------------------------------------------------------------------------------------------
Round 1: 38   (Isa       [Rank: 1 ]) vs. 10   (Tan       [Rank:11]) -> Winner: 38   (Isa)
Round 1: 1    (Ming      [Rank: 2 ]) vs. 45   (Kevin     [Rank:10]) -> Winner: 45   (Kevin)
Round 1: 29   (Shawn     [Rank: 3 ]) vs. 19   (Darren    [Rank:7 ]) -> Winner: 29   (Shawn)
Round 1: 13   (Aiden     [Rank: 4 ]) vs. 11   (Jasper    [Rank:5 ]) -> Winner: 11   (Jasper)
Updated player data in PLAYER.txt
```

In Round 1 of the quarterfinals, the program displayed four matchups between the top 8 checked-in players, prompting the referee to enter the winner's ID for each player. As each match was processed, debug messages confirmed the handling of each node in the tournament bracket.

Match 1 saw Isa (ID 38) defeat Tan (ID 10), Match 2 saw Kevin (ID 45) narrowly win against Ming (ID 1). In Match 3, Shawn (ID 29) beat Darren (ID 19) and finally, Match 4 ended with Jasper (ID 11) defeating Aiden (ID 13).

After each match, the tournament tree structure was updated by assigning the winners to their next positions in the bracket, preparing the system for upcoming semifinal round.

```
Starting Round 2
[DEBUG] Displaying round 2

SemiFinals:
--------------------------------------------------------------------------------
Round 2: 38   (Isa       [Rank: 1 ]) vs. 45   (Kevin     [Rank:10]) -> Winner: TBD
Round 2: 29   (Shawn     [Rank: 3 ]) vs. 11   (Jasper    [Rank:5 ]) -> Winner: TBD
[DEBUG] Displaying round 2
[DEBUG] Processing node: Round 2, P1=38, P2=45
[DEBUG] Resolving match: round = 2, player1_id = 38, player2_id = 45
Match 2: 38 vs. 45
Enter winner ID: 38
[DEBUG] Received input: '38'
Enter kills for Isa: 5
Enter deaths for Isa: 0
Enter kills for Kevin: 0
Enter deaths for Kevin: 5
[DEBUG] Updated parent: P1=38, P2=
[DEBUG] Processing node: Round 2, P1=29, P2=11
[DEBUG] Resolving match: round = 2, player1_id = 29, player2_id = 11
Match 2: 29 vs. 11
Enter winner ID: 11
[DEBUG] Received input: '11'
Enter kills for Jasper: 3
Enter deaths for Jasper: 1
Enter kills for Shawn: 1
Enter deaths for Shawn: 3
[DEBUG] Updated parent: P1=38, P2=11
[DEBUG] Displaying round 2 after processing

SemiFinals:
--------------------------------------------------------------------------------
Round 2: 38   (Isa       [Rank: 1 ]) vs. 45   (Kevin     [Rank:10]) -> Winner: 38   (Isa)
Round 2: 29   (Shawn     [Rank: 3 ]) vs. 11   (Jasper    [Rank:5 ]) -> Winner: 11   (Jasper)
Updated player data in PLAYER.txt
```

In Round 2, also the semifinals, Isa (ID 38) defeated Kevin (ID 45), and Jasper (ID 11) defeated Shawn (ID 29), updating the tournament bracket with the two finalists, and saving the updated player data to file.

```
Starting Round 3
[DEBUG] Displaying round 3

Final:
--------------------------------------------------------------------------------
Round 3: 38   (Isa       [Rank: 1 ]) vs. 11   (Jasper    [Rank:5 ]) -> Winner: TBD
[DEBUG] Displaying round 3
[DEBUG] Processing node: Round 3, P1=38, P2=11
[DEBUG] Resolving match: round = 3, player1_id = 38, player2_id = 11
Match 3: 38 vs. 11
Enter winner ID: 38
[DEBUG] Received input: '38'
Enter kills for Isa: 2
Enter deaths for Isa: 1
Enter kills for Jasper: 1
Enter deaths for Jasper: 2
[DEBUG] Displaying round 3 after processing

Final:
--------------------------------------------------------------------------------
Round 3: 38   (Isa       [Rank: 1 ]) vs. 11   (Jasper    [Rank:5 ]) -> Winner: 38   (Isa)
Updated player data in PLAYER.txt
Saved tournament to MATCHES.csv
```

In the final round, Isa (ID 38) defeated Jasper (ID 11), securing the tournament victory, after which the updated player stats were saved to a file called “PLAYER.txt” and the full tournament results were recorded in “MATCHES.csv”.

```
Enter choice: 3

QuarterFinals:
-------------------------------------------------------------------------------------------
Round 1: 38   (Isa       [Rank: 1 ]) vs. 10   (Tan       [Rank:11]) -> Winner: 38   (Isa)
Round 1: 1    (Ming      [Rank: 2 ]) vs. 45   (Kevin     [Rank:10]) -> Winner: 45   (Kevin)
Round 1: 29   (Shawn     [Rank: 3 ]) vs. 19   (Darren    [Rank:7 ]) -> Winner: 29   (Shawn)
Round 1: 13   (Aiden     [Rank: 4 ]) vs. 11   (Jasper    [Rank:5 ]) -> Winner: 11   (Jasper)

SemiFinals:
-------------------------------------------------------------------------------------------
Round 2: 38   (Isa       [Rank: 1 ]) vs. 45   (Kevin     [Rank:10]) -> Winner: 38   (Isa)
Round 2: 29   (Shawn     [Rank: 3 ]) vs. 11   (Jasper    [Rank:5 ]) -> Winner: 11   (Jasper)

Final:
-------------------------------------------------------------------------------------------
Round 3: 38   (Isa       [Rank: 1 ]) vs. 11   (Jasper    [Rank:5 ]) -> Winner: 38   (Isa)
```

Enter the choice of 3 (Schedule Match) will display all the matches' information to the spectator.

TASK 2: TOURNAMENT REGISTRATION & PLAYER QUEUEING

LING JIE WEI TP067563

```
Enter choice: 1
Enter player ID: 51
Enter player name: asdf
Enter player ranking [1 - 100]: 100
Player asdf registered.
```

```
51  43,Lim,100,true,0,0,Regular,0,0,0
52  51,asdf,100,false,0,0,Regular,0,0,0
53
```

A new player named “asdf” with ID 51 and rank 100 was successfully registered as a regular participant, with initial stats set to zero across wins, losses, kills, deaths, and win rate. If the player's rank is 1 – 30 will auto be a “Wildcard”, players’ ID below 20 will be a “EarlyBird”, else it will be a regular priority.

```
Enter choice: 2
Enter player ID: 51
Player asdf checked-in successful.
```

```
51  43,Lim,100,true,0,0,Regular,0,0,0
52  51,asdf,100,true,0,0,Regular,0,0,0
```

Player “asdf” with ID 51 was successfully marked as checked-in, confirming their participation in the tournament.

```
Enter choice: 6
1. Display by Rank ! (Ascending)
2. Display by Rank ! (Descending)
3. Display by Checked-In ! (True)
4. Display by Checked-In ! (False)
5. Display by Prioritize Entries !
6. Exit
Enter choice:
```

This menu offers options to display players based on different criteria, including rank (ascending or descending), check-in status (true or false), prioritized entries, or to exit the display menu.

```
Enter choice: 1
ID      Name            Rank    Checked-In  Wins    Losses
-----------------------------------------------------------
38      Isa             1       true        18      0
1       Ming            2       true        2       6
29      Shawn           3       true        10      6
13      Aiden           4       true        3       6
11      Jasper          5       true        5       6
19      Darren          7       true        0       6
45      Kevin           10      true        4       6
10      Tan             11      true        0       6
12      Chunwei         12      true        0       0
48      Zack            15      true        0       0
28      Finn            17      true        0       0
46      Ivan            18      true        0       0
42      Shafiq          19      false       0       0
21      Zul             20      false       0       0
7       Lucas           22      true        0       0
6       Nick            23      true        0       0
2       Ryan            24      false       0       0
44      Kai             27      false       0       0
22      Oscar           28      false       0       0
25      Alvin           29      false       0       0
3       Wei             30      true        0       0
20      Jay             31      true        0       0
```

Shows the data of players sorted from the highest rank to the lowers rank

```
Enter choice: 2
ID        Name                Rank      Checked-In  Wins    Losses
-----------------------------------------------------------------
51        asdf                100       true        0       0
23        EAsean              99        true        0       0
24        Elon                96        true        0       0
36        Faizal              93        true        0       0
18        Daniel              91        true        0       0
9         Leo                 90        true        0       0
31        Ethan               86        true        0       0
24        Razif               80        true        0       0
39        Harith              79        true        0       0
5         Zhen Ning           78        true        0       0
35        Noah                73        true        0       0
17        Ben                 66        true        0       0
14        Yan                 64        true        0       0
33        Azri                63        true        0       0
50        Adib                62        true        0       0
27        Liam                61        true        0       0
16        Max                 59        true        0       0
30        Isaac               58        true        0       0
4         Ken                 49        true        0       0
26        Amir                46        true        0       0
34        Junwei              45        true        0       0
15        Hugo                40        true        0       0
37        Hafiz               39        true        0       0
47        Logan               38        true        0       0
8         Nash                36        true        0       0
40        Farid               35        true        0       0
41        Jiewei              33        false       0       0
```

Shows the list of players sorted from the lowest rank to the highest rank.

```
Enter choice: 3
ID        Name                Rank      Checked-In  Wins    Losses
-----------------------------------------------------------------
1         Ming                2         true        2       6
3         Wei                 30        true        0       0
4         Ken                 49        true        0       0
5         Zhen Ning           78        true        0       0
6         Nick                23        true        0       0
7         Lucas               22        true        0       0
8         Nash                36        true        0       0
9         Leo                 90        true        0       0
10        Tan                 11        true        0       6
11        Jasper              5         true        5       6
12        Chunwei             12        true        0       0
13        Aiden               4         true        3       6
14        Yan                 64        true        0       0
15        Hugo                40        true        0       0
16        Max                 59        true        0       0
17        Ben                 66        true        0       0
18        Daniel              91        true        0       0
```

Displays only the players who have checked in and are eligible to participate.

```
Enter choice: 4
ID        Name                Rank      Checked-In  Wins    Losses
-----------------------------------------------------------------
2         Ryan                24        false       0       0
21        Zul                 20        false       0       0
22        Oscar               28        false       0       0
25        Alvin               29        false       0       0
41        Jiewei              33        false       0       0
42        Shafiq              19        false       0       0
44        Kai                 27        false       0       0
```

Displays only the players who have not checked in yet.

```
Enter choice: 5
ID        Name                Rank      Checked-In  Wins    Losses  Priority-Type
-------------------------------------------------------------------------------
1         Ming                2         true        2       6       Wildcard
29        Shawn               3         true        10      6       Wildcard
48        Zack                15        true        0       0       Wildcard
21        Zul                 20        false       0       0       Wildcard
41        Jiewei              33        false       0       0       Wildcard
30        Isaac               58        true        0       0       Wildcard
24        Razif               80        true        0       0       Wildcard
2         Ryan                24        false       0       0       EarlyBird
13        Aiden               4         true        3       6       EarlyBird
17        Ben                 66        true        0       0       EarlyBird
25        Alvin               29        false       0       0       EarlyBird
32        Rey                 32        true        0       0       EarlyBird
34        Junwei              45        true        0       0       EarlyBird
3         Wei                 30        true        0       0       Regular
4         Ken                 49        true        0       0       Regular
5         Zhen Ning           78        true        0       0       Regular
6         Nick                23        true        0       0       Regular
7         Lucas               22        true        0       0       Regular
8         Nash                36        true        0       0       Regular
9         Leo                 90        true        0       0       Regular
10        Tan                 11        true        0       6       Regular
11        Jasper              5         true        5       6       Regular
12        Chunwei             12        true        0       0       Regular
14        Yan                 64        true        0       0       Regular
15        Hugo                40        true        0       0       Regular
16        Max                 59        true        0       0       Regular
18        Daniel              91        true        0       0       Regular
19        Darren              7         true        0       6       Regular
20        Jay                 31        true        0       0       Regular
22        Oscar               28        false       0       0       Regular
23        EAsean              99        true        0       0       Regular
```

```
Summary:
-------------------------------------------------------------------------------------------------------------------------------------------------
Total Players           : 50
Available Ranks         : 1, 2, 3, 4, 5, 7, 10, 11, 12, 15, 17, 18, 19, 20, 22, 23, 24, 27, 28, 29, 30, 31, 32, 33, 35, 36, 38, 39, 40, 45, 46, 49, 58, 59, 61, 62, 63, 64, 66, 73, 78, 79, 80, 86, 90, 91, 93, 96, 99, 100
Checked-In (True)       : 43 [GREEN]
Checked-In (False)      : 7 [DEFAULT]
WildCard Priority Type  : 7 times
EarlyBird Priority Type : 6 times
Regular Priority Type   : 37 times
-------------------------------------------------------------------------------------------------------------------------------------------------
```

Lists players based on a custom priority logic, possibly giving preference to high rank or win rate.

TASK 3: LIVE STREAM & SPECTATOR QUEUE MANAGEMENT

LIEW YI XIAN TP068306

```
Enter choice: 5
Enter Spectator Name: ovuvuevuevue
1. VIP  2. Influencer   3. General      4. Streamer
1
Is Seated ?
[1. True / 2. False] : 1
Player ovuvuevuevue registered.
VIP ovuvuevuevue (ID: 102) added to priority queue.
VIP ovuvuevuevue (ID: 102) assigned to VIP seat 1.
```

The VIP spectator "ovuvuevuevue" was registered, marked as seated, added to the priority queue, and assigned to VIP seat 1.

```
Enter choice: 5
Enter Spectator Name: qwer
1. VIP  2. Influencer   3. General      4. Streamer
2
Is Seated ?
[1. True / 2. False] : 2
Player qwer registered.
```

The influencer "qwer" was registered but not seated, and no seat or queue assignment was made.

```
Enter choice: 5
Enter Spectator Name: yuio
1. VIP  2. Influencer   3. General      4. Streamer
3
Is Seated ?
[1. True / 2. False] : 1
Player yuio registered.
General spectator yuio (ID: 104) added to general queue.
General spectator yuio (ID: 104) assigned to seat 20.
```

The general spectator "yuio" was registered, marked as seated, added to the general queue, and assigned to seat 20.

```
Enter choice: 5
Enter Spectator Name: ghgh
1. VIP  2. Influencer   3. General      4. Streamer
4
Enter the slot [1-5] for streamer5
Is Seated ?
[1. True / 2. False] : 1
Player ghgh registered.
Streamer ghgh (ID: 105) added to streamer queue.
Streamer ghgh (ID: 105) assigned to streaming slot 5, seat 3.
```

The streamer "ghgh" was registered, assigned to streaming slot 5 and seat 3, and added to the streamer queue.

```
Enter choice: 8
General spectator Tanaka (ID: 0) added to general queue.
General spectator Tanaka (ID: 0) assigned to seat 21.
Influencer Khalid (ID: 1) added to priority queue.
No available influencer seats for Khalid (ID: 1).
VIP Ricky (ID: 2) added to priority queue.
VIP Ricky (ID: 2) assigned to VIP seat 24.
Streamer Shin (ID: 3) added to streamer queue.
Streamer Shin (ID: 3) assigned to streaming slot 4, seat 4.
VIP Lara (ID: 4) added to priority queue.
VIP Lara (ID: 4) assigned to VIP seat 25.
Influencer Renee (ID: 5) added to priority queue.
No available influencer seats for Renee (ID: 5).
General spectator Danny (ID: 6) added to general queue.
General spectator Danny (ID: 6) assigned to seat 22.
General spectator Mina (ID: 7) added to general queue.
General spectator Mina (ID: 7) assigned to seat 23.
General spectator Paul (ID: 8) added to general queue.
General spectator Paul (ID: 8) assigned to seat 24.
General spectator Ellie (ID: 9) added to general queue.
General spectator Ellie (ID: 9) assigned to seat 25.
General spectator Nabil (ID: 10) added to general queue.
General spectator Nabil (ID: 10) assigned to seat 26.
Influencer Yuki (ID: 11) added to priority queue.
No available influencer seats for Yuki (ID: 11).
Influencer Zhen (ID: 12) added to priority queue.
No available influencer seats for Zhen (ID: 12).
General spectator Nick (ID: 13) added to general queue.
General spectator Nick (ID: 13) assigned to seat 27.
Streamer Ben (ID: 14) added to streamer queue.
Streamer Ben (ID: 14) assigned to streaming slot 4, seat 5.
Streamer Tariq (ID: 15) added to streamer queue.
Streamer Tariq (ID: 15) assigned to streaming slot 2, seat 4.
VIP Zaki (ID: 16) added to priority queue.
VIP Zaki (ID: 16) assigned to VIP seat 26.
Influencer Felix (ID: 17) added to priority queue.
No available influencer seats for Felix (ID: 17).
```

Shows the registration and seating process of various spectators—VIPs, influencers, general spectators, and streamers—where general and VIP spectators were successfully assigned available seats, streamers were allocated specific streaming slots and seats, while several influencers were added to the priority queue but could not be seated due to a lack of available influencer seats.

```
----------------------------------------
VIP Seats (30):
Seat 1: Ricky (ID: 2) | Seat 2: Lara (ID: 4) | Seat 3: Zaki (ID: 16) | Seat 4: Lina (ID: 19) | Seat 5: J
ia (ID: 20) | Seat 6: Zul (ID: 29) | Seat 7: Zain (ID: 40) | Seat 8: Amal (ID: 41) | Seat 9: ChunWei (ID
: 42) | Seat 10: Yan (ID: 43) | Seat 11: Isa (ID: 48) | Seat 12: Azri (ID: 56) | Seat 13: Eddy (ID: 58)
| Seat 14: Hasni (ID: 60) | Seat 15: Haris (ID: 62) | Seat 16: Ray (ID: 72) | Seat 17: Hafiz (ID: 81) |
Seat 18: Ken (ID: 87) | Seat 19: Adib (ID: 89) | Seat 20: Huda (ID: 94) | Seat 21: EASEAN (ID: 100) | Se
at 22: ovuvuevuevue (ID: 102) | Seat 23: Empty | Seat 24: Empty | Seat 25: Empty | Seat 26: Empty | Seat
 27: Empty | Seat 28: Empty | Seat 29: Empty | Seat 30: Empty |
----------------------------------------------------------------------------------------------------

Influencer Seats (10):
Seat 1: Khalid (ID: 1) | Seat 2: Renee (ID: 5) | Seat 3: Yuki (ID: 11) | Seat 4: Zhen (ID: 12) | Seat 5:
 Felix (ID: 17) | Seat 6: Amirah (ID: 22) | Seat 7: Yen (ID: 24) | Seat 8: Nurul (ID: 26) | Seat 9: Hana
 (ID: 28) | Seat 10: Gerald (ID: 33) |
----------------------------------------------------------------------------------------------------

General Seats (60):
Seat 1: Tanaka (ID: 0) | Seat 2: Danny (ID: 6) | Seat 3: Mina (ID: 7) | Seat 4: Paul (ID: 8) | Seat 5: E
llie (ID: 9) | Seat 6: Nabil (ID: 10) | Seat 7: Nick (ID: 13) | Seat 8: Hasan (ID: 18) | Seat 9: Emma (I
D: 30) | Seat 10: Noor (ID: 37) | Seat 11: Aliya (ID: 44) | Seat 12: Irfan (ID: 46) | Seat 13: Isaac (ID
: 52) | Seat 14: Amir (ID: 57) | Seat 15: John (ID: 63) | Seat 16: Fahmi (ID: 65) | Seat 17: Bryan (ID:
69) | Seat 18: Lucas (ID: 98) | Seat 19: JJBB (ID: 101) | Seat 20: yuio (ID: 104) | Seat 21: Empty | Sea
t 22: Empty | Seat 23: Empty | Seat 24: Empty | Seat 25: Empty | Seat 26: Empty | Seat 27: Empty | Seat
28: Empty | Seat 29: Empty | Seat 30: Empty | Seat 31: Empty | Seat 32: Empty | Seat 33: Empty | Seat 34
: Empty | Seat 35: Empty | Seat 36: Empty | Seat 37: Empty | Seat 38: Empty | Seat 39: Empty | Seat 40:
Empty | Seat 41: Empty | Seat 42: Empty | Seat 43: Empty | Seat 44: Empty | Seat 45: Empty | Seat 46: Em
pty | Seat 47: Empty | Seat 48: Empty | Seat 49: Empty | Seat 50: Empty | Seat 51: Empty | Seat 52: Empt
y | Seat 53: Empty | Seat 54: Empty | Seat 55: Empty | Seat 56: Empty | Seat 57: Empty | Seat 58: Empty
| Seat 59: Empty | Seat 60: Empty |

Streamer Slots (5 slots, 5 seats each):
  Slot 1: Seat 1: Rey (ID: 27) | Seat 2: Arjun (ID: 31) | Seat 3: Faizal (ID: 32) | Seat 4: Wei (ID: 36)
 | Seat 5: Kenji (ID: 54) |
  Slot 2: Seat 1: Tariq (ID: 15) | Seat 2: Yan (ID: 21) | Seat 3: Chris (ID: 68) | Seat 4: Empty | Seat
5: Empty |
  Slot 3: Seat 1: Harith (ID: 23) | Seat 2: Alia (ID: 34) | Seat 3: Razif (ID: 51) | Seat 4: Empty | Sea
t 5: Empty |
  Slot 4: Seat 1: Shin (ID: 3) | Seat 2: Ben (ID: 14) | Seat 3: Aqil (ID: 49) | Seat 4: Empty | Seat 5:
Empty |
  Slot 5: Seat 1: Ming (ID: 25) | Seat 2: Kai (ID: 39) | Seat 3: ghgh (ID: 105) | Seat 4: Empty | Seat 5
: Empty |
```

TASK 4: GAME RESULT LOGGING & PERFORMANCE HISTORY

NANG ZHEN NING TP069063

```
Enter choice: 7
MatchID   Player1ID   Player2ID   WinnerID   Round Winner Kills   Winner Deaths   Loser Kills   Loser Deaths
match5    38          10          38         1     5              0               0             5
match4    1           45          45         1     3              2               2             3
match2    29          19          29         1     6              2               2             6
match1    13          11          11         1     7              3               3             7
match6    38          45          38         2     5              0               0             5
match3    29          11          11         2     3              1               1             3
match7    38          11          38         3     2              1               1             2
```

Match the summary table showing the details of each tournament match, including match ID, player IDs, winner ID, round number, and the kills and deaths of both the winner and loser, illustrating the progression and outcomes of all rounds leading to the final victory by player 38.

```
Player Performance
PlayerID  Name      Rank      Win       Lose      WinsRate  Kill      Death
--------------------------------------------------------------------------------
38        Isa       1         18        0         100.0     87        8
1         Ming      2         2         6         25.0      11        28
29        Shawn     3         10        6         62.5      74        43
13        Aiden     4         3         6         33.3      30        35
11        Jasper    5         5         6         45.5      30        46
19        Darren    7         0         6         0.0       19        50
45        Kevin     10        4         6         40.0      24        35
10        Tan       11        0         6         0.0       0         30
```

```
--------------------------------------------------
✅ Player Isa is on a win streak 18 !
🏆 Player Isa has a perfect win rate!
⚔️ Player Isa has over 50 kills!
⚔️ Player Shawn has over 50 kills!
❌ Player Darren is on a losing streak 6 !
💀 Player Darren has over 50 deaths!
❌ Player Tan is on a losing streak 6 !
--------------------------------------------------
```

Summarizes each player's tournament performance—including ID, name, rank, wins, losses, win rate, kills, and deaths—highlighting Isa's perfect win rate and dominant kill stats, Shawn's strong kill count, and the ongoing losing streaks and high death counts of Darren and Tan.

FLOWCHART

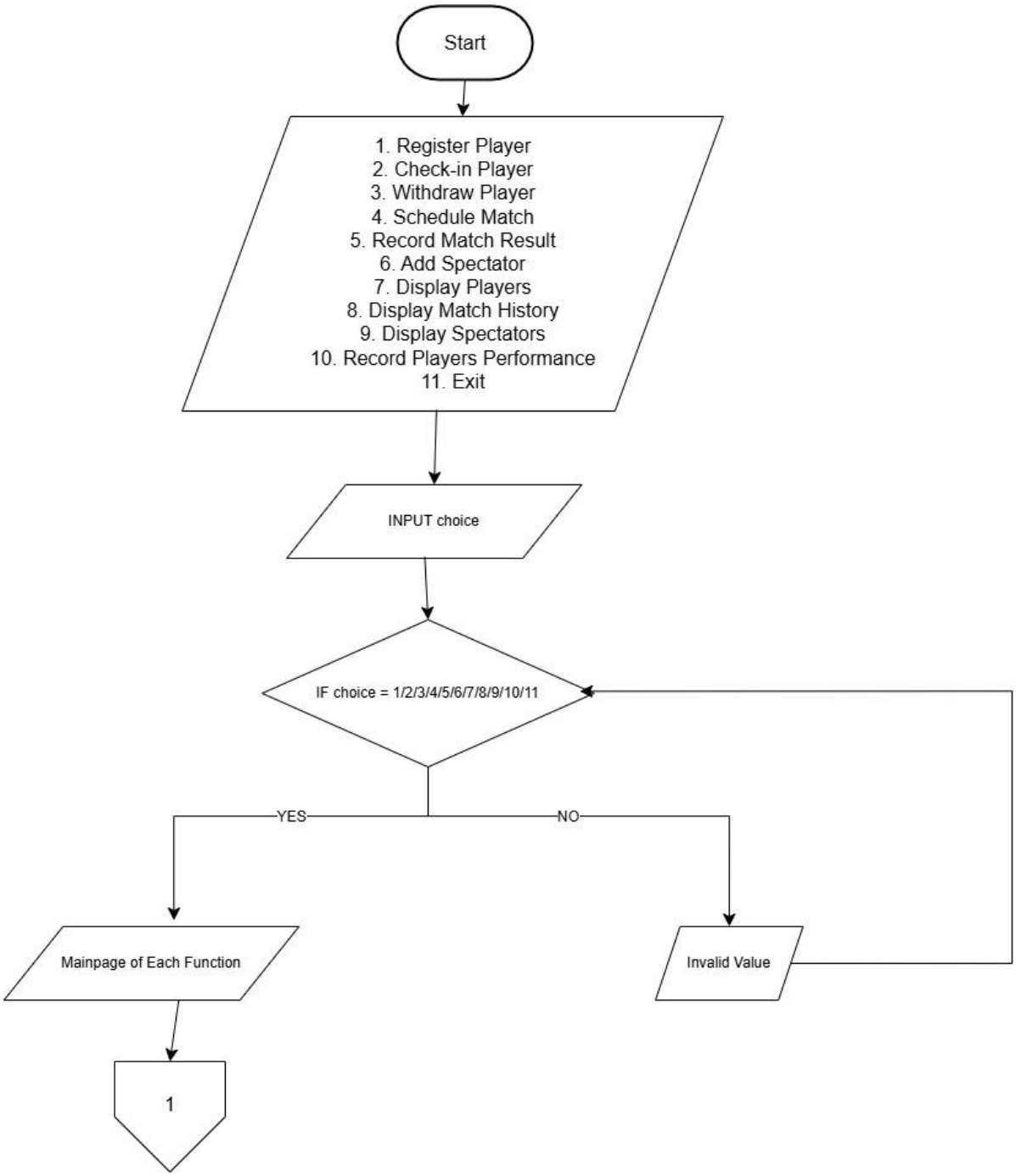

Figure 1MainPage

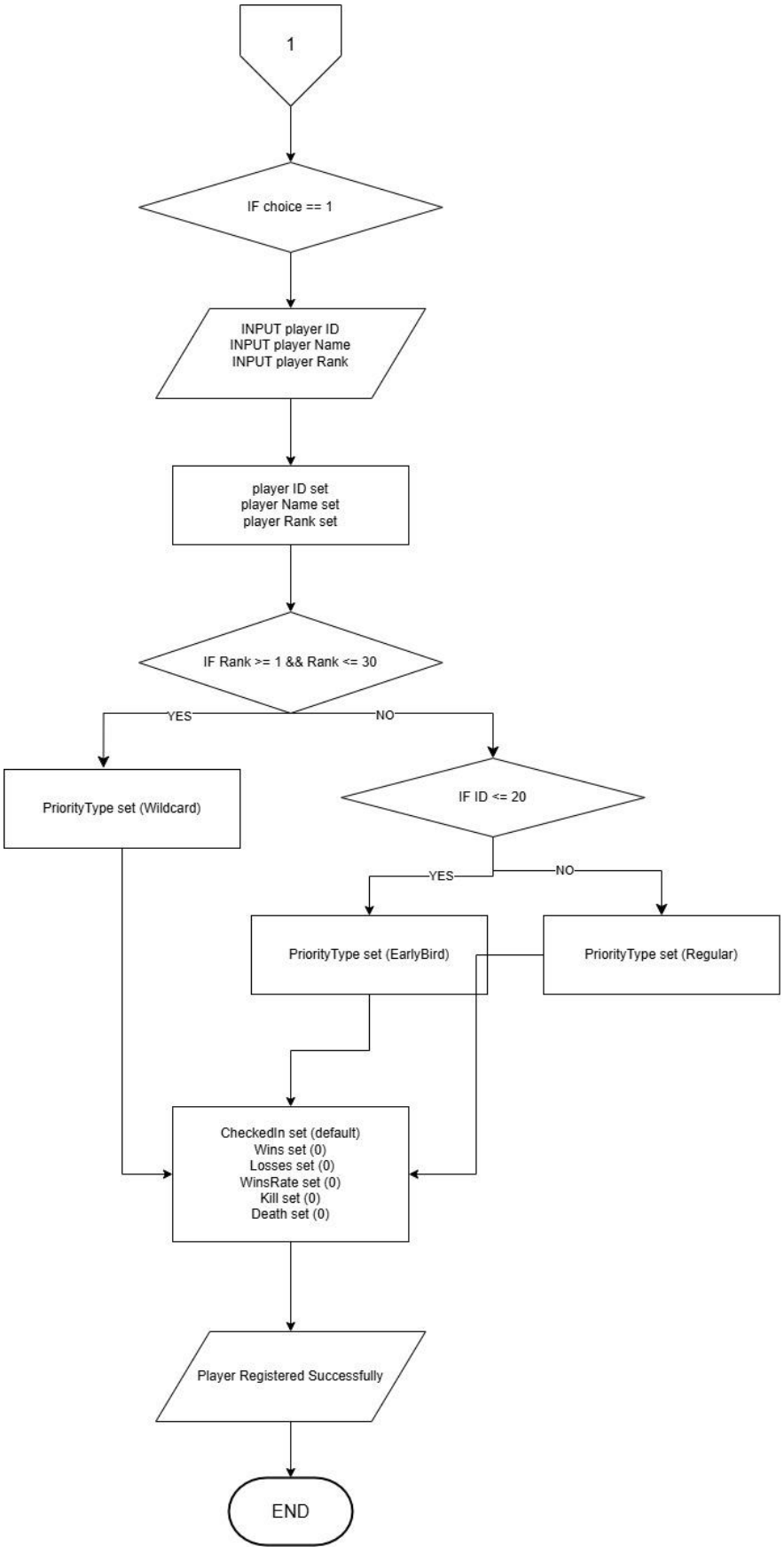

Figure 2 RegisterPlayer

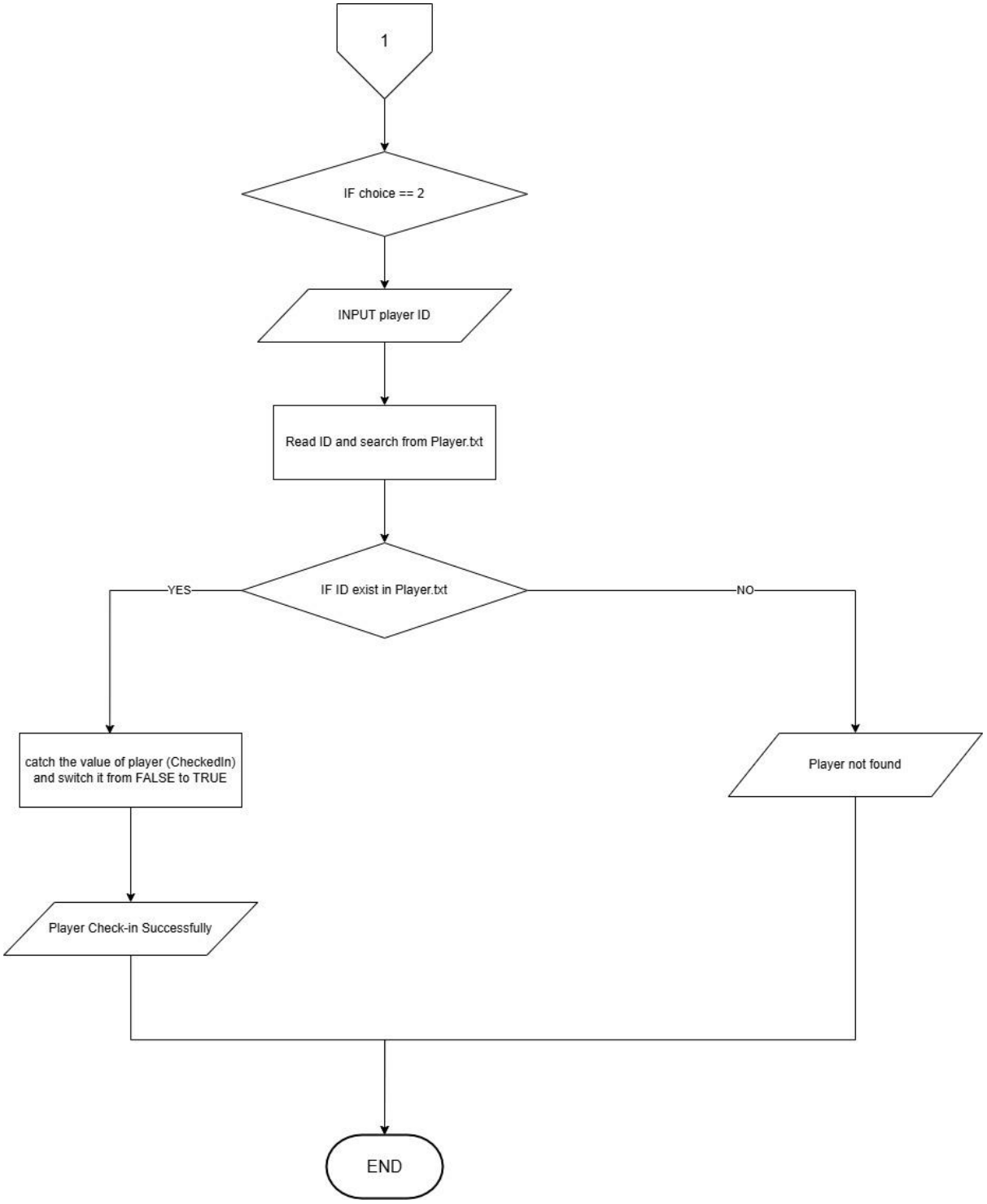

Figure 3 CheckedInPlayer

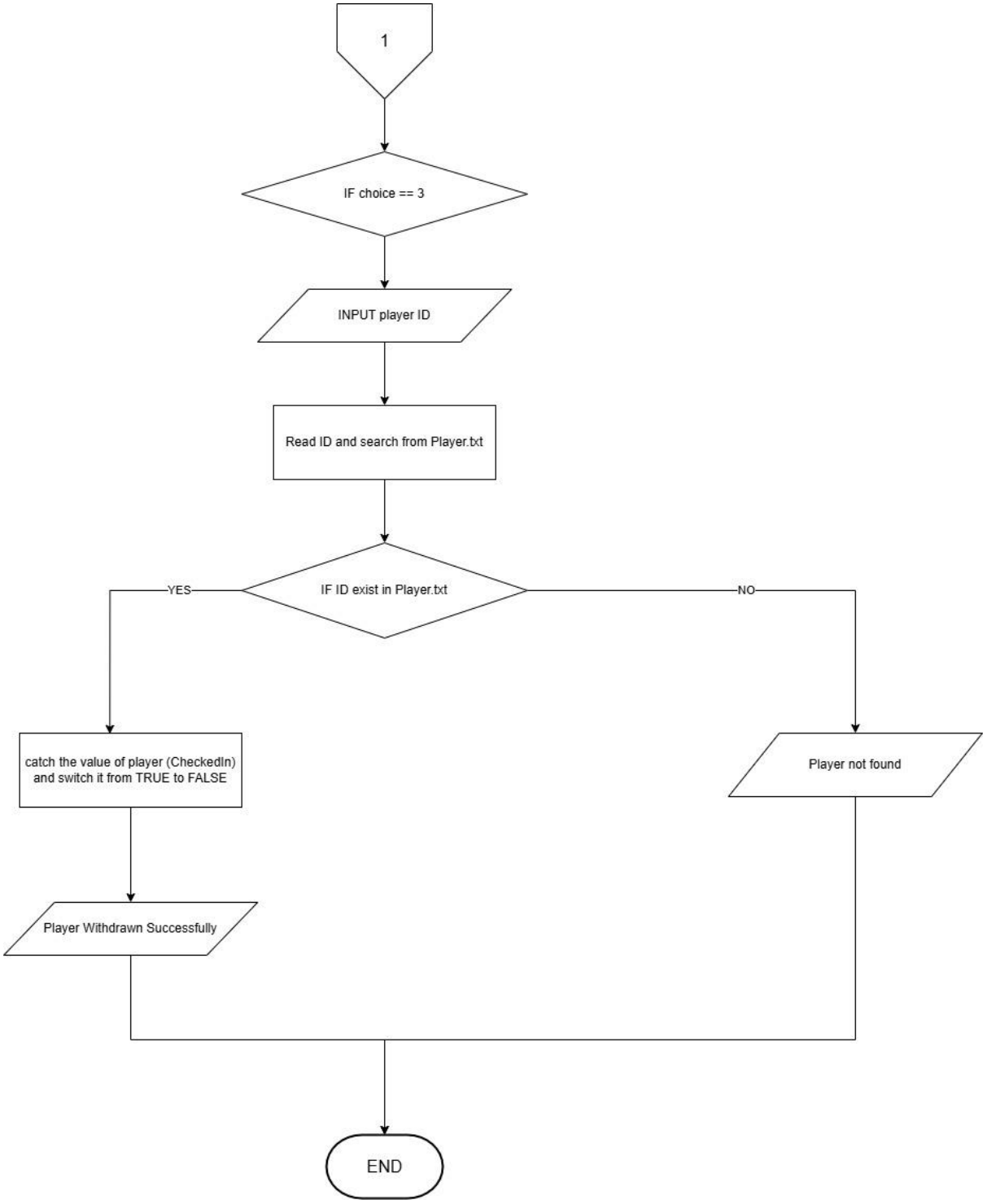

Figure 4 WithdrawPlayer

Figure 5 ScheduleMatch

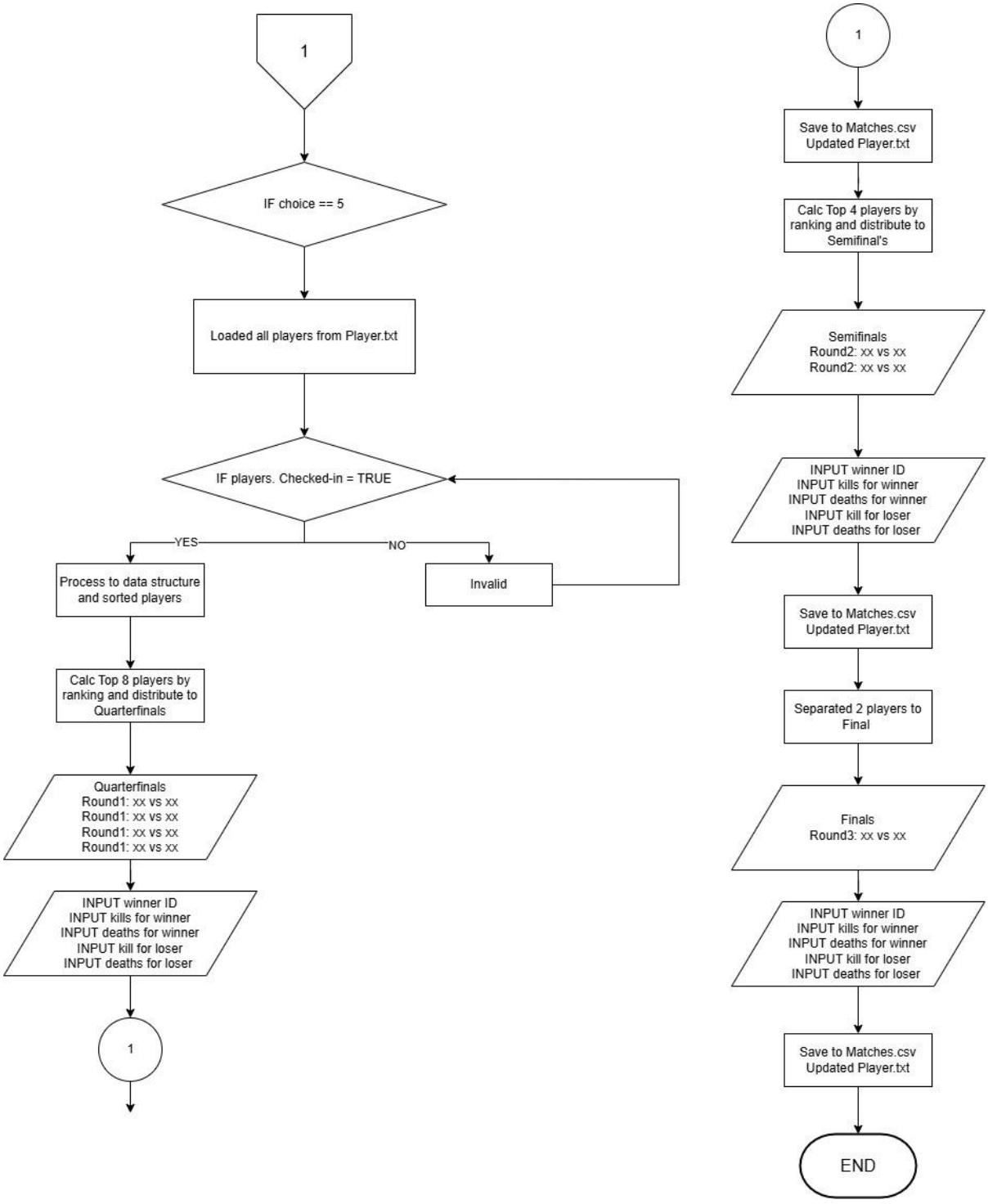

Figure 6 GameMatch

Figure 7 AddSpectator

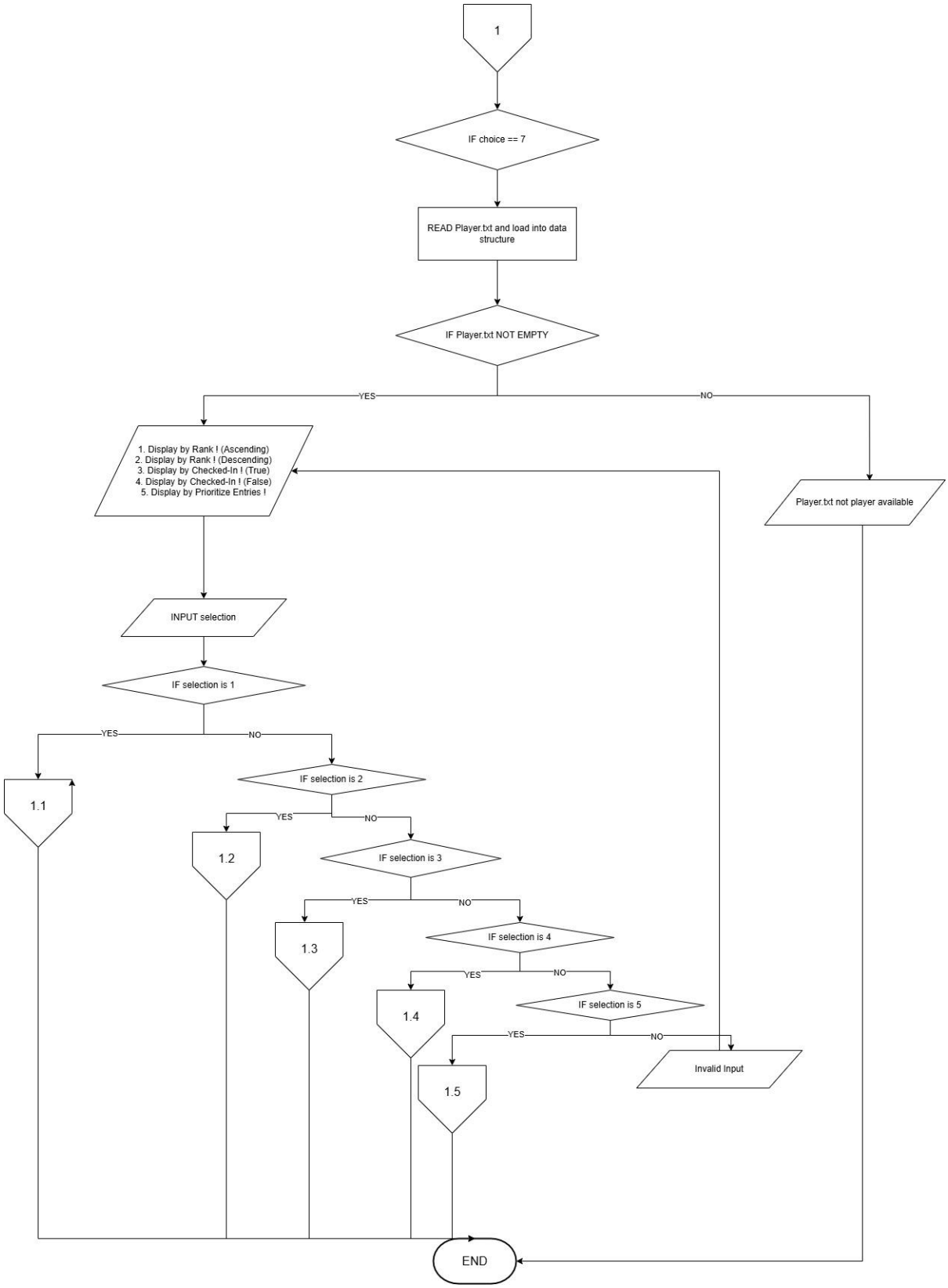

Figure 8 DisplayPlayers

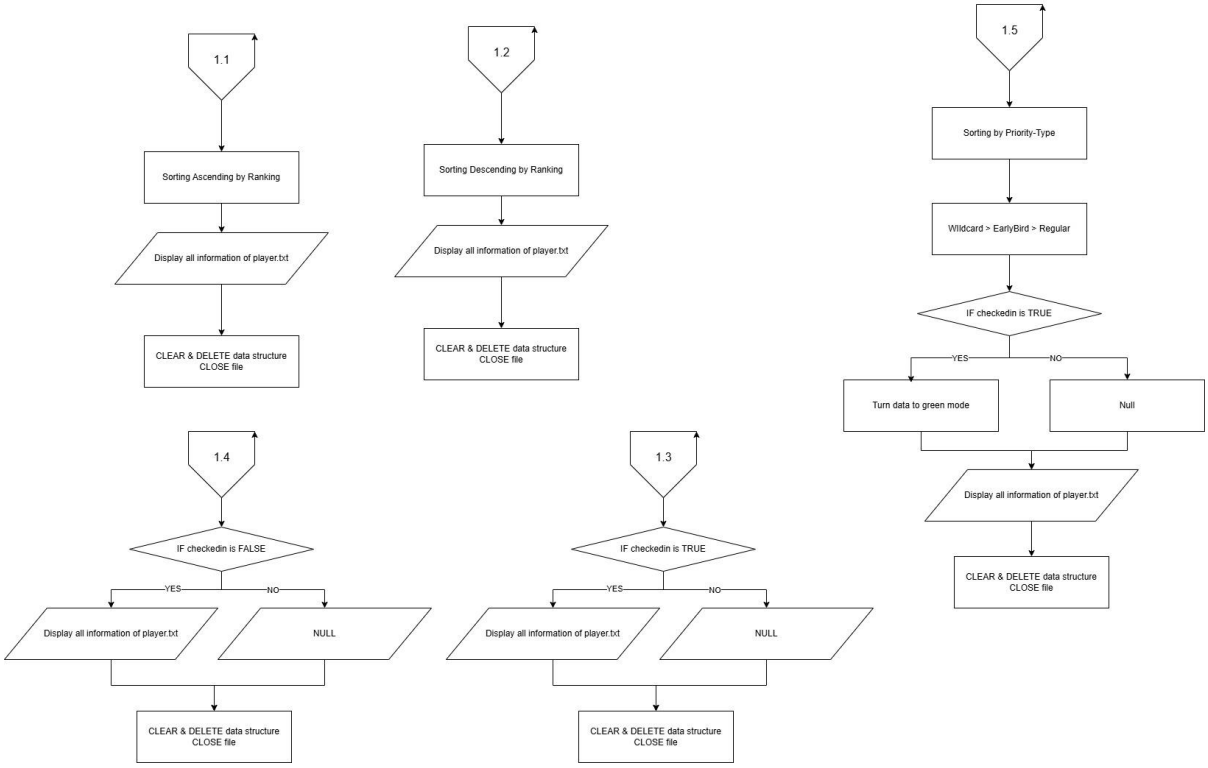

Figure 9 ExtendsOfDisplayPlayers

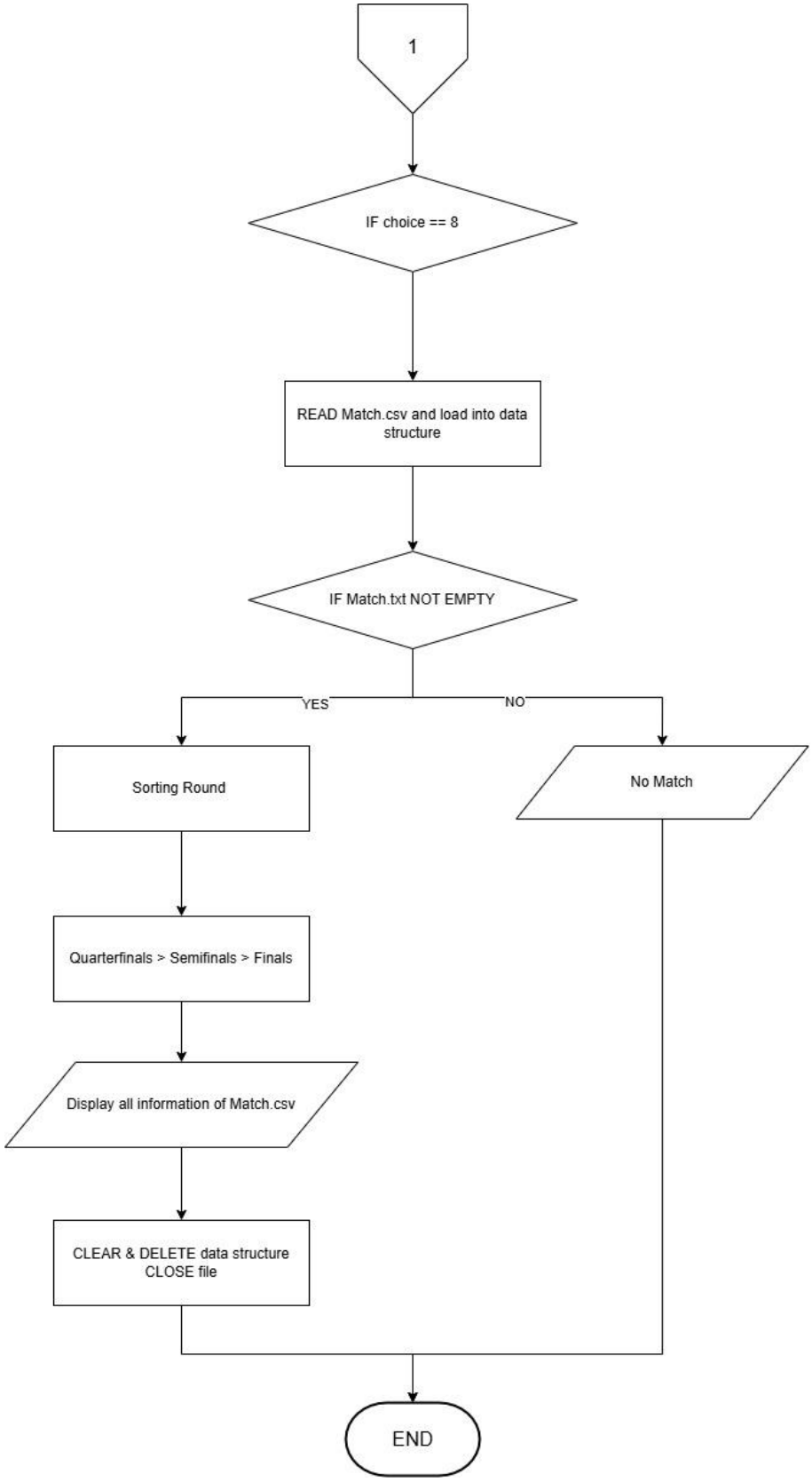

Figure 10 DisplayMatchHistory

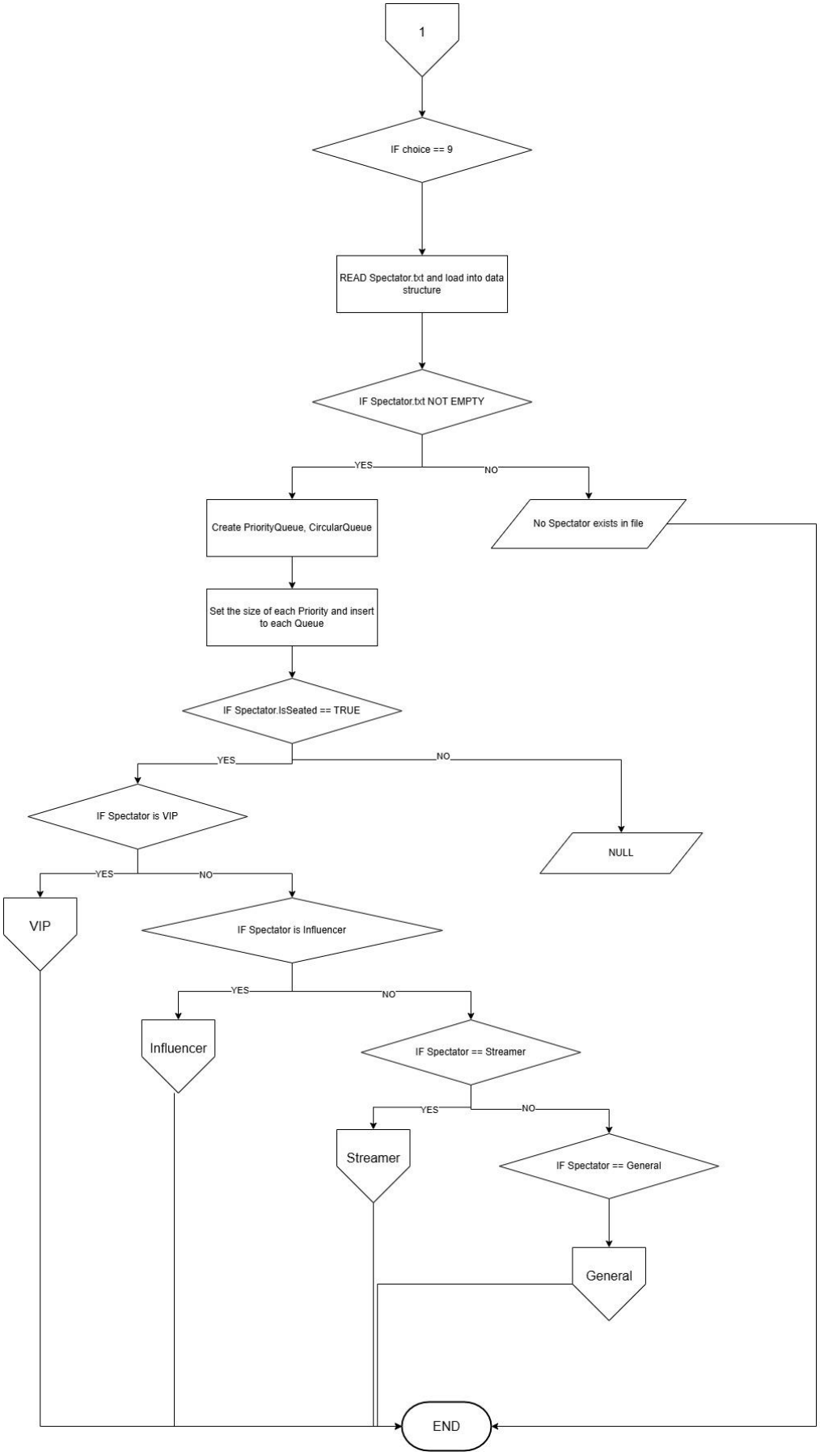

Figure 11 DisplaySpectator

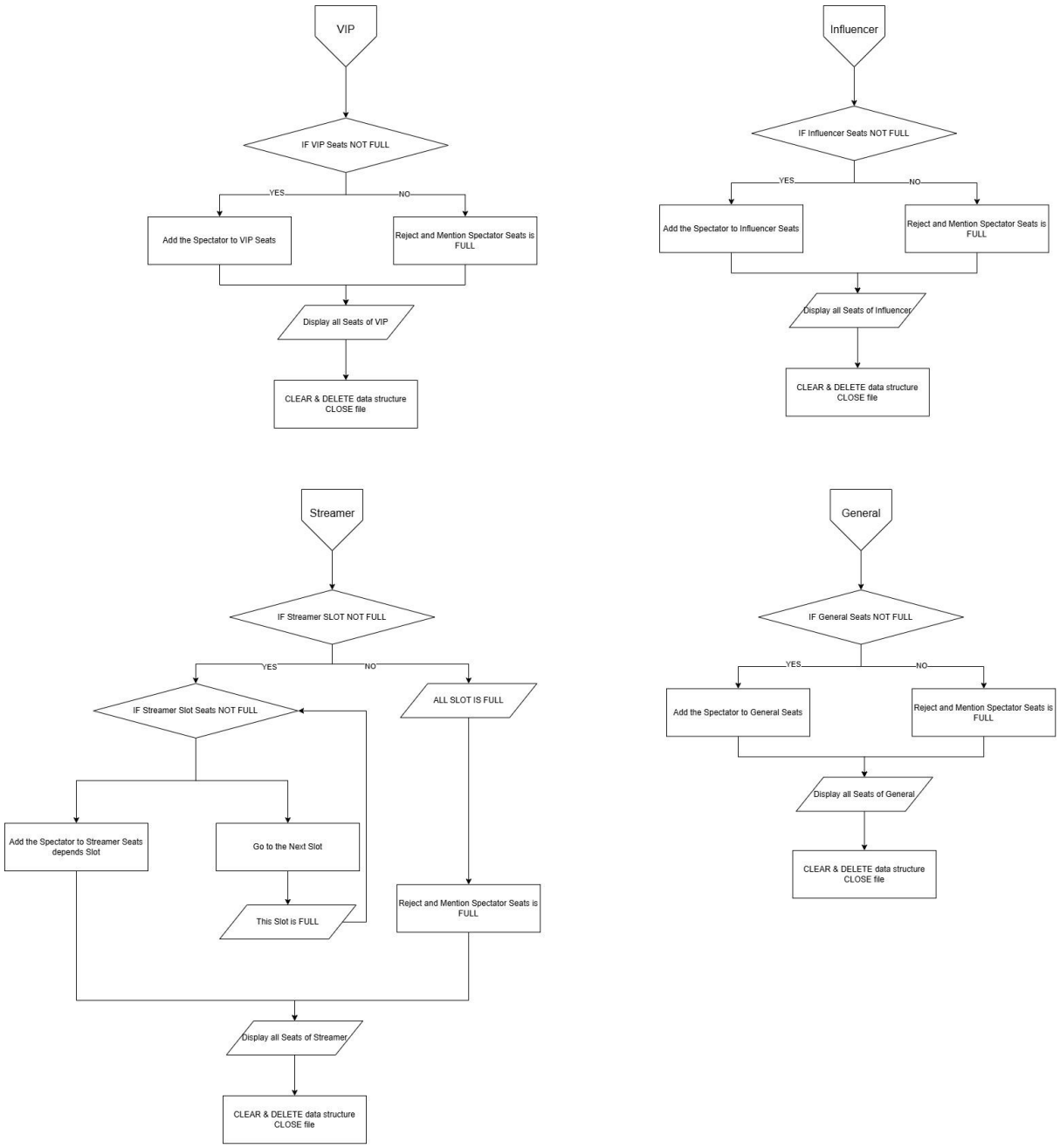

Figure 12 ExtendsOfDisplaySpectator

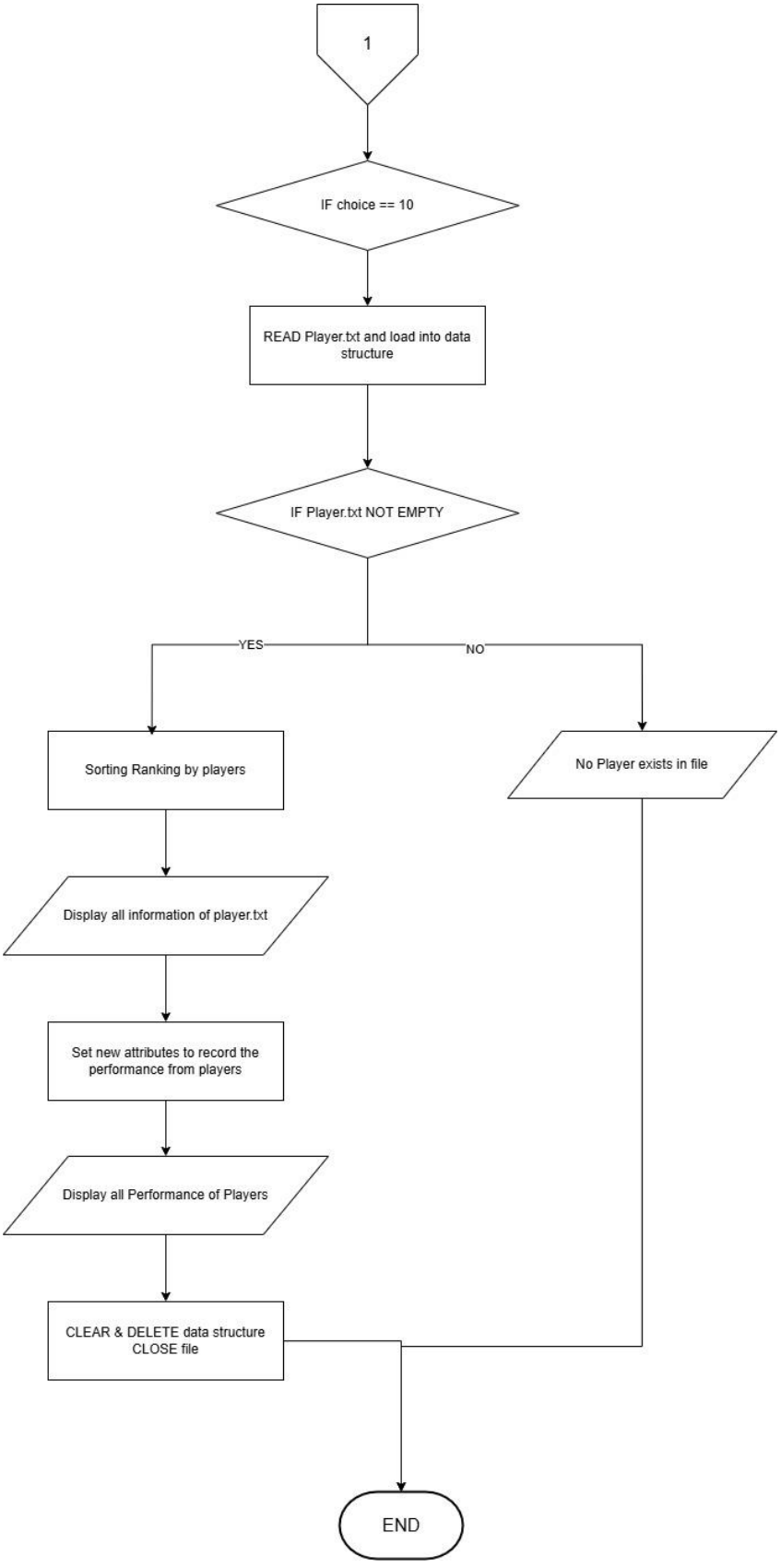

Figure 13 RecordPlayerPerformance