**HỌC VIỆN CÔNG NGHỆ BƯU CHÍNH VIỄN THÔNG**

**KHOA CƠ BẢN I**

**BỘ MÔN TIN HỌC CƠ SỞ**



****

**BÀI TẬP LỚN PYTHON**

|  |  |
| --- | --- |
| **Giảng viên hướng dẫn** | **: Kim Ngọc Bách** |
| **Họ và tên sinh viên** | **:Đinh Văn Khải** |
| **Mã sinh viên** | **:B22DCKH064** |
| **Lớp** | **:D22DCKH02-B** |
| **Nhóm** | **: 11** |

***Hà Nội – 2023***

**Câu 1:**

Player Information

* Nation
* Team
* Position
* Age

Playing Time

* Matches Played
* Starts
* Minutes

Performance

* Non-Penalty Goals
* Penalty Goals
* Assists
* Yellow Cards
* Red Cards

Expected

* xG (Expected Goals)
* npxG (Non-Penalty Expected Goals)
* xAG (Expected Assists from Goals)

Progression

* PrgC (Progressive Carries)
* PrgP (Progressive Passes)
* PrgR (Progressive Runs)

Per 90 Minutes

* Gls (Goals)
* Ast (Assists)
* G+A (Goals plus Assists)
* G-PK (Goals minus Penalty Kicks)
* G+A-PK (Goals plus Assists minus Penalty Kicks)
* xG (Expected Goals)
* xAG (Expected Assists from Goals)
* xG + xAG (Expected Goals plus Expected Assists from Goals)
* npxG (Non-Penalty Expected Goals)
* npxG + xAG (Non-Penalty Expected Goals plus Expected Assists from Goals)

Goalkeeping

Performance

* GA (Goals Against)
* GA90 (Goals Against per 90 minutes)
* SoTA (Shots on Target Against)
* Saves
* Save% (Save Percentage)
* W (Wins)
* D (Draws)
* L (Losses)
* CS (Clean Sheets)
* CS% (Clean Sheet Percentage)

Penalty Kicks

* PKatt (Penalty Kicks Attempted)
* PKA (Penalty Kicks Against)
* PKsv (Penalty Kicks Saved)
* PKm (Penalty Kicks Missed)
* Save% (Save Percentage for Penalty Kicks)

Shooting

Standard

* Gls (Goals)
* Sh (Shots)
* SoT (Shots on Target)
* SoT% (Shots on Target Percentage)
* Sh/90 (Shots per 90 minutes)
* SoT/90 (Shots on Target per 90 minutes)
* G/Sh (Goals per Shot)
* G/SoT (Goals per Shot on Target)
* Dist (Distance)
* FK (Free Kicks)
* PK (Penalty Kicks)
* PKatt (Penalty Kicks Attempted)

Expected

* xG (Expected Goals)
* npxG (Non-Penalty Expected Goals)
* npxG/Sh (Non-Penalty Expected Goals per Shot)
* G-xG (Goals minus Expected Goals)
* np:G-xG (Non-Penalty Goals minus Non-Penalty Expected Goals)

Passing

Total

* Cmp (Completed Passes)
* Att (Attempted Passes)
* Cmp% (Completion Percentage)
* TotDist (Total Distance of Passes)
* PrgDist (Progressive Distance of Passes)

Short

* Cmp (Completed Short Passes)
* Att (Attempted Short Passes)
* Cmp% (Completion Percentage of Short Passes)

Medium

* Cmp (Completed Medium Passes)
* Att (Attempted Medium Passes)
* Cmp% (Completion Percentage of Medium Passes)

Long

* Cmp (Completed Long Passes)
* Att (Attempted Long Passes)
* Cmp% (Completion Percentage of Long Passes)

Expected

* Ast (Assists)
* xAG (Expected Assists from Goals)
* xA (Expected Assists)
* A-xAG (Assists minus Expected Assists from Goals)
* KP (Key Passes)
* 1/3 (Passes into Final Third)
* PPA (Passes into Penalty Area)
* CrsPA (Crosses into Penalty Area)
* PrgP (Progressive Passes)

Pass Types

* Live (Live-ball Passes)
* Dead (Dead-ball Passes)
* FK (Free Kicks)
* TB (Through Balls)
* Sw (Switches)
* Crs (Crosses)
* TI (Throw-Ins)
* CK (Corner Kicks)

Corner Kicks

* In (Inswinging Corners)
* Out (Outswinging Corners)
* Str (Straight Corners)

Outcomes

* Cmp (Completed Actions)
* Off (Offsides)
* Blocks (Total Blocks)

Goal and Shot Creation

SCA

* SCA (Total Shot-Creating Actions)
* SCA90 (Shot-Creating Actions per 90 minutes)

SCA Types

* PassLive (Live-ball Passes)
* PassDead (Dead-ball Passes)
* TO (Take-Ons)
* Sh (Shots)
* Fld (Fouls Drawn)
* Def (Defensive Actions)

GCA

* GCA (Total Goal-Creating Actions)
* GCA90 (Goal-Creating Actions per 90 minutes)

GCA Types

* PassLive (Live-ball Passes)
* PassDead (Dead-ball Passes)
* TO (Take-Ons)
* Sh (Shots)
* Fld (Fouls Drawn)
* Def (Defensive Actions)

Defensive Actions

Tackles

* Tkl (Total Tackles)
* TklW (Tackles Won)
* Def\_3rd (Tackles in Defensive Third)
* Mid\_3rd (Tackles in Midfield Third)
* Att\_3rd (Tackles in Attacking Third)

Challenges

* Tkl (Tackles)
* Att (Tackles Attempted)
* Tkl% (Tackle Success Percentage)
* Lost (Challenges Lost)

Blocks

* Blocks (Total Blocks)
* Sh (Shots Blocked)
* Pass (Passes Blocked)
* Int (Interceptions)
* Tkl\_Int (Tackles + Interceptions)
* Clr (Clearances)
* Err (Errors)

Possession

Touches

* Touches (Total Touches)
* Def\_Pen (Touches in Defensive Penalty Area)
* Def\_3rd (Touches in Defensive Third)
* Mid\_3rd (Touches in Midfield Third)
* Att\_3rd (Touches in Attacking Third)
* Att\_Pen (Touches in Attacking Penalty Area)
* Live (Live-ball Touches)

Take-Ons

* Att (Take-Ons Attempted)
* Succ (Successful Take-Ons)
* Succ% (Success Percentage)
* Tkld (Times Tackled)
* Tkld% (Percentage of Times Tackled)

Carries

* Carries (Total Carries)
* TotDist (Total Distance)
* ProDist (Progressive Distance)
* ProgC (Progressive Carries)
* 1/3 (Carries into Final Third)
* CPA (Carries into Penalty Area)
* Mis (Miscontrols)
* Dis (Dispossessed)

Receiving

* Rec (Total Receives)
* PrgR (Progressive Receives)

Playing Time

Starts

* Starts (Number of Starts)
* Mn\_per\_Start (Minutes per Start)
* Compl (Completed Matches)

Subs

* Subs (Number of Substitutions)
* Mn\_per\_Sub (Minutes per Substitution)
* unSub (Unused Substitutes)

Team Success

* PPM (Points Per Match)
* onG (Goals Scored while on the field)
* onGA (Goals Against while on the field)

Team Success xG

* onxG (Expected Goals while on the field)
* onxGA (Expected Goals Against while on the field)

Miscellaneous Stats

Performance

* Fls (Fouls Committed)
* Fld (Fouls Drawn)
* Off (Offsides)
* Crs (Crosses)
* OG (Own Goals)
* Recov (Recoveries)

Aerial Duels

* Won (Aerial Duels Won)
* Lost (Aerial Duels Lost)
* Won% (Percentage of Aerial Duels Won)