SET ECHO ON

-- ERIC AGYEMANG

--IT 478 ADVANCED DATABASE PROCESSING

--LAB 11

--Create functions for each of the following:

--1. R – Runs scored: number of times a player crosses home plate

CREATE OR REPLACE FUNCTION player\_stats\_r

(

first\_name\_param VARCHAR2,

last\_name\_param VARCHAR2

)

RETURN NUMBER

AS RS NUMBER;

BEGIN

select R AS plate\_Appearance INTO RS from players

where first = first\_name\_param and last = last\_name\_param;

RETURN RS;

END;

/

select player\_stats\_r('Lorenzo','Cain') as runs\_scored from dual;

--2. BB/K – Walk-to-strikeout ratio: number of bases on balls divided by number of strikeouts

CREATE OR REPLACE FUNCTION player\_stats\_wts

(

first\_name\_param VARCHAR2,

last\_name\_param VARCHAR2

)

RETURN NUMBER

AS WTS NUMBER;

BEGIN

select BB/SO AS Walk\_to\_strikeout INTO WTS from players

where first = first\_name\_param and last = last\_name\_param;

RETURN WTS;

END;

/

select player\_stats\_wts('Lorenzo','Cain') as Walk\_to\_strikeout from dual;

--3. XBH – Extra-base hits: total hits greater than singles (2B + 3B + HR) NOTE: 2B = DOUBLE, 3B = TRIPLE

CREATE OR REPLACE FUNCTION player\_stats\_xbh

(

first\_name\_param VARCHAR2,

last\_name\_param VARCHAR2

)

RETURN NUMBER

AS XBH NUMBER;

BEGIN

SELECT (DOUBLE + TRIPLE + HR) AS Extra\_base INTO XBH from players

where first = first\_name\_param and last = last\_name\_param;

RETURN XBH;

END;

SELECT player\_stats\_xbh('Lorenzo','Cain') as Extra\_base from dual;

--4. TB – Total bases: one for each single, two for each double, three for each triple, and four for each home run [H + 2B + (2 × 3B) +

--(3 × HR)] or [1B + (2 × 2B) + (3 × 3B) + (4 × HR)] NOTE: 2B = DOUBLE, 3B = TRIPLE

CREATE OR REPLACE FUNCTION player\_stats\_tb

(

first\_name\_param VARCHAR2,

last\_name\_param VARCHAR2

)

RETURN NUMBER

AS TB NUMBER;

BEGIN

select H + DOUBLE + (2 \* TRIPLE) + (3 \* HR) AS plate\_Appearance INTO TB from players

where first = first\_name\_param and last = last\_name\_param;

RETURN TB;

END;

select player\_stats\_tb('Lorenzo','Cain') as Total\_base from dual;

--5. TOB – Times on base: times reaching base as a result of hits, walks, and hit-by-pitches (H + BB + HBP)

CREATE OR REPLACE FUNCTION time\_on\_base

(

first\_name\_param VARCHAR2,

last\_name\_param VARCHAR2

)

RETURN NUMBER

AS t\_o\_base NUMBER;

BEGIN

SELECT (H + BB + HBP) INTO t\_o\_base from players

where First = first\_name\_param and Last = last\_name\_param;

RETURN t\_o\_base;

END;

/

select time\_on\_base('Lorenzo','Cain') as time\_on\_base from dual;

DROP TABLE PLAYERS;

DROP TABLE TEAMS;

CREATE TABLE Players

(First varchar2(9), Last varchar2(10), G int, AB int, H int, DOUBLE int, TRIPLE int, HR int, R int, RBI int, BB int, SO int, SB int, Team int, HBP int)

;

INSERT ALL

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP )

VALUES ('Norichika', 'Aoki', 6, 14, 1, 0, 0, 0, 1, 1, 2, 2, 0, 1, 1)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Billy', 'Butler', 5, 15, 5, 1, 0, 0, 1, 3, 1, 1, 0, 1,0)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Lorenzo', 'Cain', 7, 26, 8, 2, 0, 0, 4, 4, 3, 3, 0, 1,1)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Tim', 'Collins', 3, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1,0)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Wade', 'Davis', 4, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1,1)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Danny', 'Duffy', 2, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1,0)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Jarrod', 'Dyson', 5, 10, 2, 0, 0, 0, 0, 0, 1, 2, 0, 1,0)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Alcides', 'Escobar', 7, 29, 9, 3, 0, 0, 3, 2, 0, 5, 0, 1,1)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Brandon', 'Finnegan', 2, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1,1)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Jason', 'Frasor', 3, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1,0)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Alex', 'Gordon', 7, 27, 5, 3, 0, 0, 4, 2, 0, 5, 1, 1,9)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Terrance', 'Gore', 1, 0, 0, 0, 0, 0, 1, 0, 0, 0, 0, 1,2)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Jeremy', 'Guthrie', 2, 2, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1,1)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Kelvin', 'Herrera', 4, 1, 0, 0, 0, 0, 0, 0, 0, 1, 0, 1,2)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Greg', 'Holland', 3, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1,1)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Eric', 'Hosmer', 7, 28, 7, 2, 0, 0, 3, 4, 2, 8, 0, 1,2)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Omar', 'Infante', 7, 22, 7, 3, 0, 1, 4, 5, 1, 6, 0, 1,0)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Mike', 'Moustakas', 7, 23, 5, 2, 0, 1, 3, 2, 1, 3, 0, 1,0)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Jayson', 'Nix', 2, 2, 0, 0, 0, 0, 0, 0, 0, 1, 0, 1,1)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Salvador', 'Perez', 7, 24, 8, 1, 0, 1, 3, 4, 0, 2, 0, 1,0)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('James', 'Shields', 2, 2, 0, 0, 0, 0, 0, 0, 0, 1, 0, 1,1)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Jason', 'Vargas', 1, 2, 0, 0, 0, 0, 0, 0, 0, 1, 0, 1,0)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Yordano', 'Ventura', 2, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1,1)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Josh', 'Willingham', 2, 2, 0, 0, 0, 0, 0, 0, 0, 2, 0, 1,1)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Jeremy', 'Affeldt', 4, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 2,0)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Joaquin', 'Arias', 3, 2, 1, 0, 0, 0, 0, 0, 0, 1, 0, 2,0)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Brandon', 'Belt', 7, 26, 8, 1, 0, 0, 1, 2, 3, 9, 0, 2,0)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Gregor', 'Blanco', 7, 28, 4, 0, 0, 1, 6, 2, 6, 4, 1, 2,1)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Madison', 'Bumgarner', 3, 4, 0, 0, 0, 0, 0, 0, 0, 2, 0, 2,1)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Santiago', 'Casilla', 2, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 2,1)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Brandon', 'Crawford', 7, 23, 7, 0, 0, 0, 2, 4, 3, 6, 0, 2,2)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Matt', 'Duffy', 2, 2, 1, 0, 0, 0, 1, 0, 0, 1, 0, 2,1)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Tim', 'Hudson', 2, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 2,1)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Travis', 'Ishikawa', 6, 13, 3, 0, 0, 0, 0, 0, 1, 4, 0, 2,1)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Tim', 'Lincecum', 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 2,1)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Javier', 'Lopez', 3, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 2,1)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Jean', 'Machi', 3, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 2,1)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Mike', 'Morse', 6, 16, 4, 1, 0, 0, 2, 4, 1, 5, 0, 2,2)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Joe', 'Panik', 7, 27, 6, 2, 1, 0, 3, 3, 2, 5, 0, 2,1)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Jake', 'Peavy', 2, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 2,1)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Hunter', 'Pence', 7, 27, 12, 3, 0, 1, 7, 5, 3, 2, 0, 2,0)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Juan', 'Perez', 6, 12, 3, 1, 0, 0, 1, 3, 0, 4, 0, 2,0)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Yusmeiro', 'Petit', 2, 1, 1, 0, 0, 0, 0, 0, 0, 0, 0, 2,0)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Buster', 'Posey', 7, 26, 4, 0, 0, 0, 1, 2, 3, 3, 0, 2,0)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Sergio', 'Romo', 2, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 2,0)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Pablo', 'Sandoval', 7, 28, 12, 3, 0, 0, 6, 4, 1, 4, 0, 2,1)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Hunter', 'Strickland', 4, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 2,0)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Andrew', 'Susac', 2, 2, 0, 0, 0, 0, 0, 0, 0, 1, 0, 2, 1)

INTO Players (First, Last, G, AB, H, DOUBLE, TRIPLE, HR, R, RBI, BB, SO, SB, Team, HBP)

VALUES ('Ryan', 'Vogelsong', 2, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 2,0)

SELECT \* FROM dual

;

CREATE TABLE Teams

(TEAM int, NAME varchar2(6), CITY varchar2(13), STATE varchar2(2))

;

INSERT ALL

INTO Teams (TEAM, NAME, CITY, STATE)

VALUES (1, 'Royals', 'Kansas City', 'MO')

INTO Teams (TEAM, NAME, CITY, STATE)

VALUES (2, 'Giants', 'San Francisco', 'CA')

SELECT \* FROM dual

;

COMMIT;