Alfonso Herrada
QuickStart
Project 2 – Baseball Stats Analysis

MAXIMUM POINTS: 100 +(5) SECTION 1

1. Model the data to find all players who have played at least 50 games and are still active. Use the "finalGame" field from the "People" table to determine if the player is still active. What do you observe? Show steps and results.

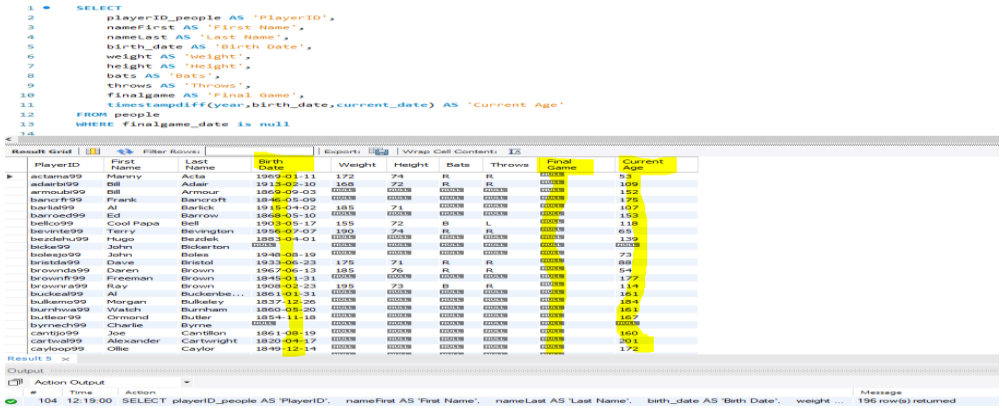
Data was modeled in SQL by joining the 'Peoples' table and subquery of the 'Appearance' table to identify players who have played more than 50 games and are still active. 'People_clean_active' SQL view was created from this query.

- Appearance table subquery
  - Used window function to get an aggregated list of the sum of Total Games played for each player and then filtered for Total Games >= 50
  -

- Joined the 'Peoples' table to the 'Appearance' table subquery and filtered for 'finalGame' is null. Per the Lehman documentation this would indicate that the player is still active. Using SQL Case statement created a 'Player Status' column that would state whether a player was active/inactive based on results in 'finalGame'. This query returned zero results.

```
debut          Date that player made first major league appearance
finalGame      Date that player made first major league appearance (blank
if still active)
```

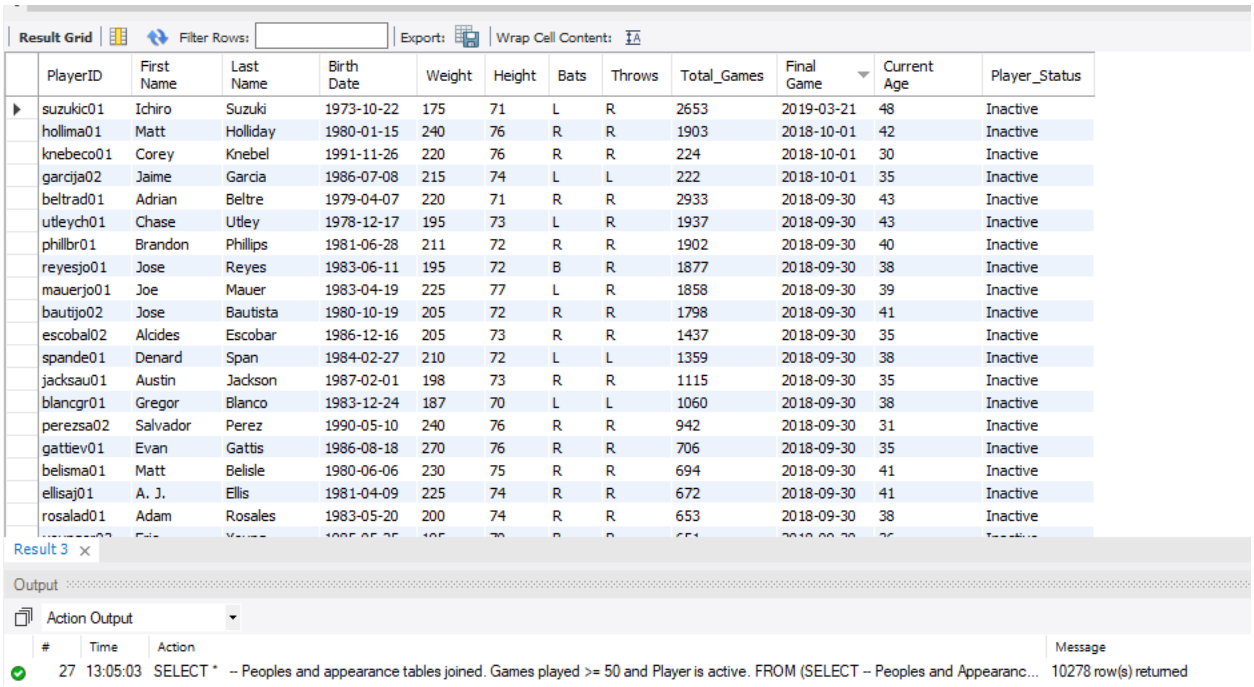
- Queried the 'Peoples' table alone and filtered for 'finalGame' is null. This produced 196 results. The results are mostly of very old players who would have played more than 80 years ago. I was able to conclude that the 'nulls' are null because there is no available data. The Nulls in 'finalGame' columns are not representative of a player's active/inactive status.



- The ‘finalGame’ column actually shows the date of the respective player's last appearance in a game. This column should be more appropriately named, lastGamePlayed.
- Therefore, in order to determine if a player is active or inactive. I used the beginning of the 2019 baseball season, 03/28/2019, as my line of demarcation.
    - Active players = finalGame >= 2019-03-28
    - Inactive players = finalGame < 2019-03-28
    - Using this logic we assume that a player who did not play in the 2019 season is considered inactive. A player could have been injured and not played the entire 2019 season but returned healthy for the 2020 season.
- This gave me a total of 1001 active players who played at least 50 games in their careers.

2. Model the data to find all players who have played at least 50 games and are inactive. Retrieve weights, throws, bats, all birth-related and name related columns from the “People” table and retrieve all columns from the batting table.

Data was modeled in SQL. I created a SQL view, ‘People_clean_all’, this is similar to ‘people_clean_active’ except that, ‘People_clean_all’, does not filter by ‘finalGame’ so active and inactive players are both included. This view was then filtered for Player_Status = Inactive



Result Grid | Filter Rows: | Export: | Wrap Cell Content:

PlayerID	First Name	Last Name	Birth Date	Weight	Height	Bats	Throws	Total_Games	Final Game	Current Age	Player_Status
suzukic01	Ichiro	Suzuki	1973-10-22	175	71	L	R	2653	2019-03-21	48	Inactive
hollima01	Matt	Holliday	1980-01-15	240	76	R	R	1903	2018-10-01	42	Inactive
knebeco01	Corey	Knebel	1991-11-26	220	76	R	R	224	2018-10-01	30	Inactive
garcija02	Jaime	Garcia	1986-07-08	215	74	L	L	222	2018-10-01	35	Inactive
beltrad01	Adrian	Beltre	1979-04-07	220	71	R	R	2933	2018-09-30	43	Inactive
utleych01	Chase	Utley	1978-12-17	195	73	L	R	1937	2018-09-30	43	Inactive
phillbr01	Brandon	Phillips	1981-06-28	211	72	R	R	1902	2018-09-30	40	Inactive
reyesjo01	Jose	Reyes	1983-06-11	195	72	B	R	1877	2018-09-30	38	Inactive
mauerjo01	Joe	Mauer	1983-04-19	225	77	L	R	1858	2018-09-30	39	Inactive
bautijo02	Jose	Bautista	1980-10-19	205	72	R	R	1798	2018-09-30	41	Inactive
escobal02	Alcides	Escobar	1986-12-16	205	73	R	R	1437	2018-09-30	35	Inactive
spande01	Denard	Span	1984-02-27	210	72	L	L	1359	2018-09-30	38	Inactive
jacksau01	Austin	Jackson	1987-02-01	198	73	R	R	1115	2018-09-30	35	Inactive
blancgr01	Gregor	Blanco	1983-12-24	187	70	L	L	1060	2018-09-30	38	Inactive
perezsa02	Salvador	Perez	1990-05-10	240	76	R	R	942	2018-09-30	31	Inactive
gattiev01	Evan	Gattis	1986-08-18	270	76	R	R	706	2018-09-30	35	Inactive
belisma01	Matt	Belisle	1980-06-06	230	75	R	R	694	2018-09-30	41	Inactive
ellisaj01	A. J.	Ellis	1981-04-09	225	74	R	R	672	2018-09-30	41	Inactive
rosalad01	Adam	Rosales	1983-05-20	200	74	R	R	653	2018-09-30	38	Inactive

Result 3

Output

Action Output

#	Time	Action	Message
27	13:05:03	SELECT * -- Peoples and appearance tables joined. Games played >= 50 and Player is active. FROM (SELECT -- Peoples and Appearanc...	10278 row(s) returned

3. From (2), add a calculated column with the players age and a calculated column with each player's first and last name concatenated.

Joined 'Batting' table with 'People_clean_all' SQL view. Created calculated columns in 'People_clean_all'

- Players Age -
  - CASE WHEN death_date IS NULL THEN timestampdiff(year, p.birth_date, CURRENT_DATE) ELSE 'Passed_Away' END AS 'Current_Age'
- First and Last Name-
  - concat(nameFirst," ",nameLast) AS 'Name'

4. Once the calculated columns are added, drop the other columns related to birth date and name.

Created SQL view, 'batting_people_clean'

```
32  FROM batting b
33  Join people_clean_all p
34  on b.playerID_batting = p.playerID
35
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content: | Fetch rows:

playerID_batting	Name	Current_Age	weight	height	bats	throws	Total_Games	finalgame	Player_Status	teamID_batting	Year	GA	AB	BA	RBI	HR	1B	2B	3B	Stolen Bases	Caught Stealing	Base on Balls	Strikeouts	Int Wa
aardsda01	David Aardsma	40	215	75	R	R	331	2015-08-23	Inactive	SFN	2004	11	0	0.000	0	0	0	0	0	0	0	0	0	0
aardsda01	David Aardsma	40	215	75	R	R	331	2015-08-23	Inactive	CHN	2006	45	2	0.000	0	0	0	0	0	0	0	0	0	0
aardsda01	David Aardsma	40	215	75	R	R	331	2015-08-23	Inactive	CHA	2007	25	0	0.000	0	0	0	0	0	0	0	0	0	0
aardsda01	David Aardsma	40	215	75	R	R	331	2015-08-23	Inactive	BOS	2008	47	1	0.000	0	0	0	0	0	0	0	0	1	0
aardsda01	David Aardsma	40	215	75	R	R	331	2015-08-23	Inactive	SEA	2009	73	0	0.000	0	0	0	0	0	0	0	0	0	0
aardsda01	David Aardsma	40	215	75	R	R	331	2015-08-23	Inactive	SEA	2010	53	0	0.000	0	0	0	0	0	0	0	0	0	0
aardsda01	David Aardsma	40	215	75	R	R	331	2015-08-23	Inactive	NYA	2012	1	0	0.000	0	0	0	0	0	0	0	0	0	0
aardsda01	David Aardsma	40	215	75	R	R	331	2015-08-23	Inactive	NYN	2013	43	0	0.000	0	0	0	0	0	0	0	0	0	0
aardsda01	David Aardsma	40	215	75	R	R	331	2015-08-23	Inactive	ATL	2015	33	1	0.000	0	0	0	0	0	0	0	0	1	0
aaronha01	Hank Aaron	88	180	72	R	R	3298	1976-10-03	Inactive	ML1	1954	122	468	0.280	69	13	85	27	6	2	2	28	39	N/A
aaronha01	Hank Aaron	88	180	72	R	R	3298	1976-10-03	Inactive	ML1	1955	153	602	0.314	106	27	116	37	9	3	1	49	61	5
aaronha01	Hank Aaron	88	180	72	R	R	3298	1976-10-03	Inactive	ML1	1956	153	609	0.328	92	26	126	34	14	2	4	37	54	6
aaronha01	Hank Aaron	88	180	72	R	R	3298	1976-10-03	Inactive	ML1	1957	151	615	0.322	132	44	121	27	6	1	1	57	58	15
aaronha01	Hank Aaron	88	180	72	R	R	3298	1976-10-03	Inactive	ML1	1958	153	601	0.326	95	30	128	34	4	4	1	59	49	16
aaronha01	Hank Aaron	88	180	72	R	R	3298	1976-10-03	Inactive	ML1	1959	154	629	0.355	123	39	131	46	7	8	0	51	54	17
aaronha01	Hank Aaron	88	180	72	R	R	3298	1976-10-03	Inactive	ML1	1960	153	590	0.292	126	40	101	20	11	16	7	60	63	13
aaronha01	Hank Aaron	88	180	72	R	R	3298	1976-10-03	Inactive	ML1	1961	155	603	0.327	120	34	114	39	10	21	9	56	64	20
aaronha01	Hank Aaron	88	180	72	R	R	3298	1976-10-03	Inactive	ML1	1962	156	592	0.323	128	45	112	28	6	15	7	66	73	14
aaronha01	Hank Aaron	88	180	72	R	R	3298	1976-10-03	Inactive	ML1	1963	161	631	0.319	130	44	124	29	4	31	5	78	94	18
aaronha01	Hank Aaron	88	180	72	R	R	3298	1976-10-03	Inactive	ML1	1964	145	570	0.328	95	24	131	30	2	22	4	62	46	9
aaronha01	Hank Aaron	88	180	72	R	R	3298	1976-10-03	Inactive	ML1	1965	150	570	0.318	89	32	108	40	1	24	4	60	81	10
aaronha01	Hank Aaron	88	180	72	R	R	3298	1976-10-03	Inactive	ATL	1966	158	603	0.279	127	44	100	23	1	21	3	76	96	15

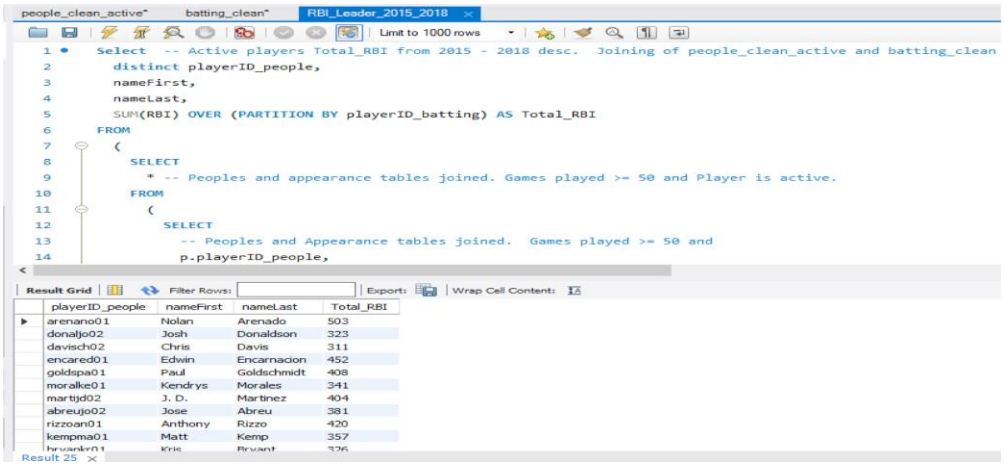
Result 18

SECTION 2

Answer the following questions:

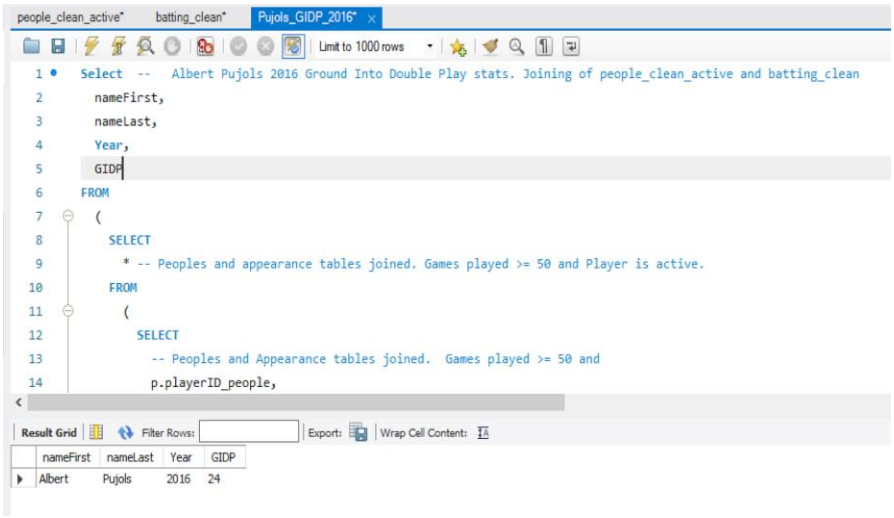
1. Which active player had the most runs batted in (RBI from the batting table) from 2015 to 2018?

Nolan Arenado 503 RBI's



2. How many double plays did Albert Pujols ground into ("GIDP" from Batting table) in 2016?

24



3. In which year were the highest number of Hall of Fame awards given?

In 2006 there were 18 people inducted into the Hall of Fame.

```sql
SELECT
distinct yearid,
count(inducted) over (partition by yearid order by yearid) AS HOF
FROM lahmansbaseballdb.halloffame
where inducted = 'y'
order by HOF desc
```

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

yearid	HOF
2006	18
1946	11
1939	10
1945	10
1937	8

4. **In what category were the highest number of Hall of Fame awards given?**

The Players category with 256 HOF inductees.

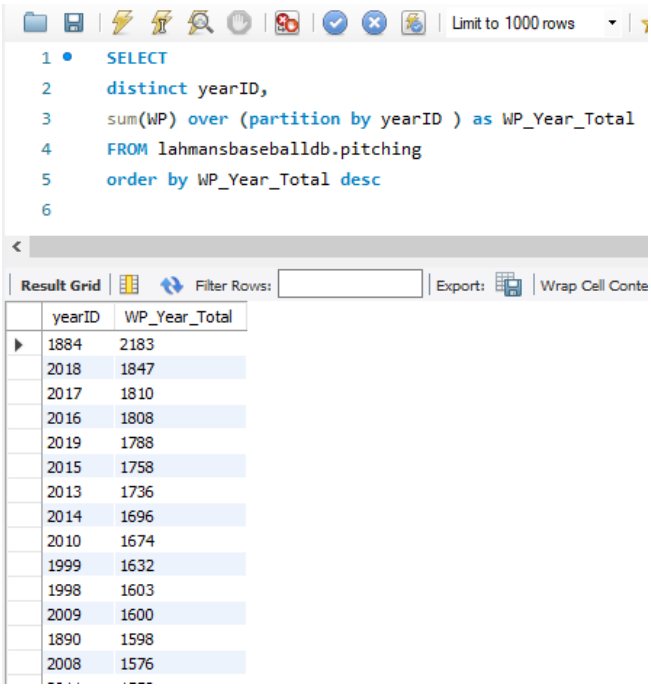
```sql
SELECT
distinct category,
count(category) over (partition by category) AS HOF
FROM lahmansbaseballdb.halloffame
where inducted = 'y'
order by HOF desc
```

Result Grid | Filter Rows: | Export: | Wrap Cell Conter

category	HOF
Player	256
Pioneer/Executive	34
Manager	23
Umpire	10

5. In which year were the highest number of Wild Pitches recorded?

In 1884 there were 2,183 wild pitches.



```
1  SELECT
2  distinct yearID,
3  sum(WP) over (partition by yearID ) as WP_Year_Total
4  FROM lahmansbaseballdb.pitching
5  order by WP_Year_Total desc
6
```

Result Grid | Filter Rows: | Export: | Wrap Cell Conte

yearID	WP_Year_Total
1884	2183
2018	1847
2017	1810
2016	1808
2019	1788
2015	1758
2013	1736
2014	1696
2010	1674
1999	1632
1998	1603
2009	1600
1890	1598
2008	1576

6. Name the player inducted in the hall of fame with the highest number of industry experience?

Pitchers do not pitch every game like players who play other positions would/could. Depending on the pitcher's role they generally appear in every 3-5 games. Therefore, I analyzed pitchers and non pitchers in separate groups.

Non- Pitchers

Max Experience - Carl Yastrazemski appeared in 3304 games

Min. Experience - Monte Irvin appeared in 764 games

Pitchers

Max Experience - Dennis Eckersley appeared in 1071 games

Min. Experience - Satchel Paige appeared in 179 games

SECTION 3

Create the following plots:

• A histogram of triples(3B) per year. What do you observe?

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- **Create a scatter plot relating triples (3B) and steals (SB). What do you observe? Now calculate the correlation between these two variables.**

  Used Power BI to plot and complete correlation analysis. Correlation coefficient was calculated using the Quick Measure feature. There is a low to mid correlation between 3B and SB overall. The dashboard also has a card illustrating the coefficient which updates as the dashboard is filtered.

SECTION 4 (Bonus) (5 Points)

Show four DAX Calculation in your data model. You can create measures of your choice as long as they relate to the data and provide valuable insights.