Monitoring Personal Golf Statistics to Improve Score at General Old Golf Course in Riverside, California

Purpose of the Project

The purpose of this project is to track and monitor my golf score at General Old Golf Course in Riverside, CA in order to identify areas in my performance that I need to improve to break a score of 100.

About the Project

Golf is a sport where the goal is to hit the ball into the hole using the least amount of strokes. A full round of golf consists of 18 holes, and the most common par being 72. Par is the number of strokes needed to complete a hole in a golf course. Hitting par would give you a score of 0. Hitting below par would give you a negative score, and hitting above par would give you a positive score.

I set a goal to break a score of 100, setting the maximum score to 99 in a round of golf. This requires me to shoot 9 bogeys (score that is 1 over par) and 9 double bogeys (score that is 2 over par), or an average of 1.5 over par per hole. This goal was set after researching what a major milestone was for amateur golfers. Therefore, by breaking down the types of strokes, mistakes, and performance per hole, I can discover why my score is high and what I need to practice in order to break 100.

In order to understand the data I am collecting, I built a fully automated dashboard, dynamic pivot table, and dynamic table to update as I input real-time data.
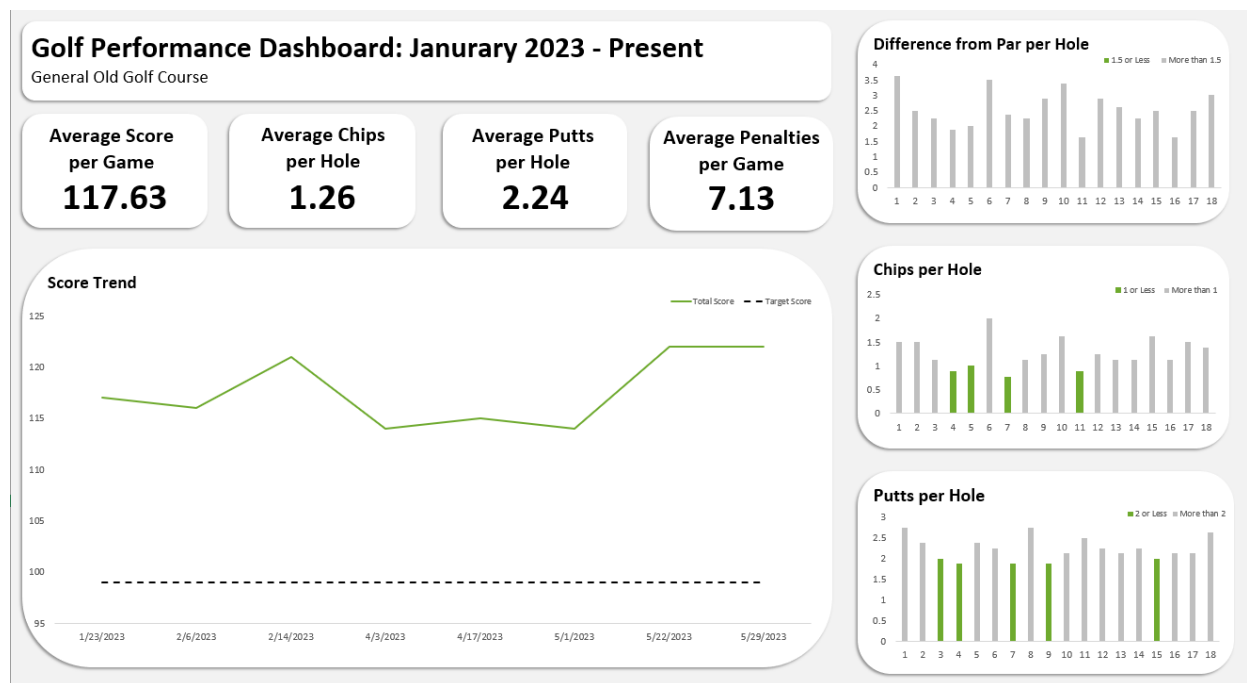
Analysis Summary

Currently, I am averaging 117.63 strokes per 18 holes. The goal is to break 100, meaning 9 bogeys (score that is 1 over par) and 9 double bogeys (score that is 2 over par) are necessary over the course of 18 holes, or an average of 1.5 over par per hole. However, from the data it shows that I am shooting over 1.5 over par per hole, on average, for all 18 holes. To understand why I am not averaging 1.5 over par per hole, I further analyzed the types of shots affecting my score.

From the data, I am averaging 1.26 chips per hole, 2.24 putts per hole, and incurring 7.13 stroke penalties per round of golf. Comparing these values to the average benchmarks, this adds, on average, a total of 20 strokes to my score.

Improving on these performances should allow me to reach my target score because it will decrease my average total score by 20 strokes, resulting in an average score of 97.63.

Furthermore, data suggests that the 1st, 6th, 10th, and 18th hole is the most difficult for me. More data regarding why these holes are most difficult for me can be gathered to discover more areas to improve upon. Possible data can include distance from the tee box to the hole, club choice, and terrain.

Golf Performance Dashboard: Janurary 2023 - Present
General Old Golf Course

Average Score per Game	Average Chips per Hole	Average Putts per Hole	Average Penalties per Game
117.63	**1.26**	**2.24**	**7.13**

Key Questions

1. What is my average score for a full round of golf?
2. How to hit under 100 strokes in a full round of golf?
3. What is the average number of chips I hit per hole?
4. What is the average number of putts I hit per hole?
5. How many penalties do I average per round of golf?
6. What do I need to work on to break 100?

Key Insights

1. My average score is 117.63.

2. Breaking a score of 100 requires 9 bogeys (score that is 1 over par) and 9 double bogeys (score that is 2 over par). This averages to 1.5 over par per hole.

3. Each hole, I average 1.26 chips.

4. I average 2.24 putts per hole.

5. I average 7.15 penalties per round of golf.

6. To break 100, I need to average 1.5 strokes above par per hole. This can be done by reducing the average number of chips, putts, and penalties. Data also suggests that the 1st, 6th, and 10th hole is the most difficult for me. More data regarding why these holes are most difficult for me can be gathered to discover more areas to improve upon. Possible data can include distance from the tee box to the hole, club choice, and terrain.

About the Data

The data was collected each time I went to play a full 18-hole round of golf at General Old Golf Course in Riverside, CA. There are a total of 12 columns.

1. Date = Date of play
2. Hole = Hole Number
3. Par= Par for the Hole
4. Strokes = Number of Strokes
5. Plus/Minus = Difference between Strokes and Par
6. D/H/I = Number of times the Driver, Hybrid, and Iron were hit
7. Mistakes (excluding OB) = Number of Mistakes (excluding out of bounds related mistakes)
8. OB Mistakes = Number of Out of Bounds related mistakes
9. Chips = Number of Chips
10. Putts = Number of Putts

In Depth Analysis

1. What is my average score for a full round of golf?

My average score is 117.63.

This was calculated by first creating a pivot table that included the dates and my total scores.

Row Labels	Total Score
1/23/2023	117
2/6/2023	116
2/14/2023	121
4/3/2023	114
4/17/2023	115
5/1/2023	114
5/22/2023	122
5/29/2023	122

Then, I used COUNT() over the "Row Label" in the pivot table to calculate the number of times I played on the course. I used SUM() over the "Total Score" column to find the total of the total score. Afterwards, I divided the total score by the number of times I played on the course to get my average score.

Number Times on Course	
	8
Total Score	
	941
Average Score	
	117.63

In order to compare my current performance to my goal, I subtracted my average score of 117.63 from my target score of 99 then divided it by the target score, resulting in me having a score that is 18.81% from my goal.

Number Times on Course	
	8
Total Score	
	941
Average Score	
	117.63
Target Score	
	99
Difference	
▼	18.81%

Next, I created a new column in the pivot table, "Target Score," to create a line graph that projects my current score trend to the target score.

Row Labels	Total Score	Target Score
1/23/2023	117	99
2/6/2023	116	99
2/14/2023	121	99
4/3/2023	114	99
4/17/2023	115	99
5/1/2023	114	99
5/22/2023	122	99
5/29/2023	122	99
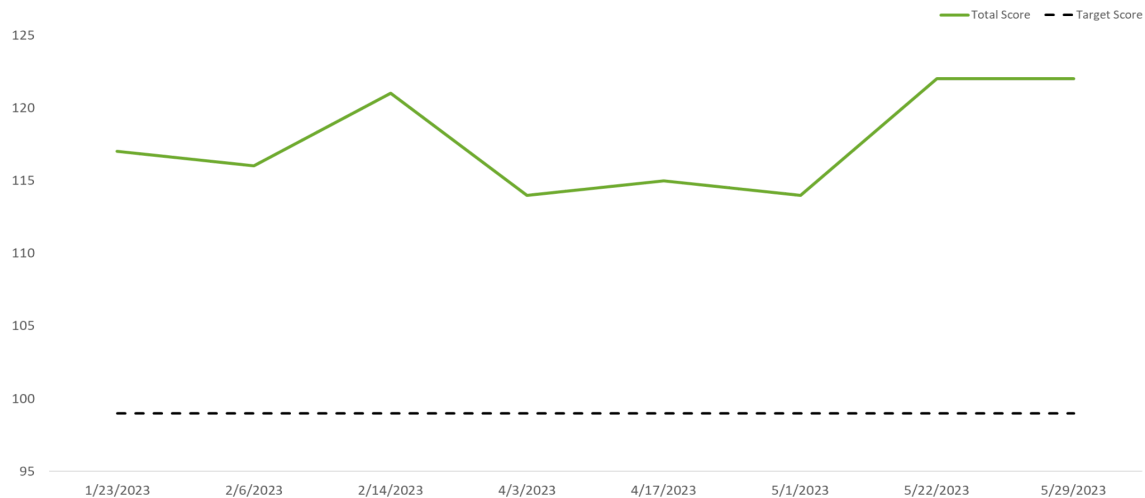
2. How to hit under 100 strokes in a full round of golf?

Breaking a score of 100 requires 9 bogeys (score that is 1 over par) and 9 double bogeys (score that is 2 over par). This averages to 1.5 over par per hole.

9 x 1 = 9 strokes
9 x 2 = 18 strokes
9 strokes + 18 strokes = 27 strokes

27 strokes / 18 holes =
1.5 over par

In order to uncover my averages over par per hole, I created a pivot table that averaged the total strokes per hole. Then, I used IF() to create a separate table that split the "Average Strokes" column based on the average value of 1.5 over par per hole.

Row Labels ⏷	Average Strokes	Par	Plus/Minus	Hole	1.5 or Less	More than 1.5
1	8.63	5.00	3.63	1		3.625
2	5.50	3.00	2.50	2		2.5
3	6.25	4.00	2.25	3		2.25
4	5.88	4.00	1.88	4		1.875
5	7.00	5.00	2.00	5		2
6	7.50	4.00	3.50	6		3.5
7	6.38	4.00	2.38	7		2.375
8	5.25	3.00	2.25	8		2.25
9	6.88	4.00	2.88	9		2.875
10	7.38	4.00	3.38	10		3.375
11	4.63	3.00	1.63	11		1.625
12	6.88	4.00	2.88	12		2.875
13	7.63	5.00	2.63	13		2.625
14	6.25	4.00	2.25	14		2.25
15	6.50	4.00	2.50	15		2.5
16	4.63	3.00	1.63	16		1.625
17	6.50	4.00	2.50	17		2.5
18	8.00	5.00	3.00	18		3

Currently, I am not averaging 1.5 over par for any of the holes.
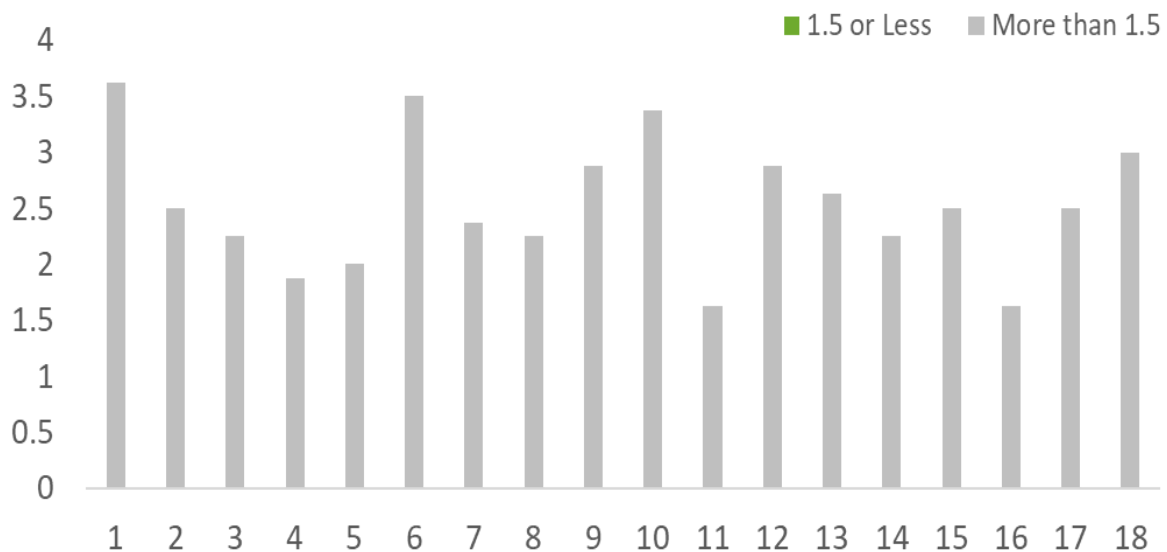
Also, from the graph, it shows that I am struggling the most on the 1st, 6th, 10th, and 18th hole.

3. What is the average number of chips I hit per hole?

Each hole, I average 1.26 chips.

Chipping is required to bring the ball onto the green when the ball is within 30 yards from the green, the area that is nearest to the hole. It should take, on average, 1 chipping attempt per hole to bring the ball onto the green. However, there are some holes where the distance is closer, making it possible for the ball to land on the green without chipping it. In a full 18-hole game, 4 of the holes offer this scenario. Therefore, assuming the ball lands on the green in 4 out of 18 holes, only a maximum of 14 chips would be required.Therefore, by calculating my average number of chips, I can compare it to the benchmark to discover if I need to work on my chipping.

This was calculated by first creating a pivot table to find the total number of chips I did.

Sum of Chips
182

Then, using COUNT() on the "Hole" column, I calculated the total number of holes in the golf course, and also used COUNT() on the previous pivot table to calculate the total number of times I played on the course. The total number of chips was divided by the number of holes and the total number of times I played on the course to find the average number of chips I played per hole.
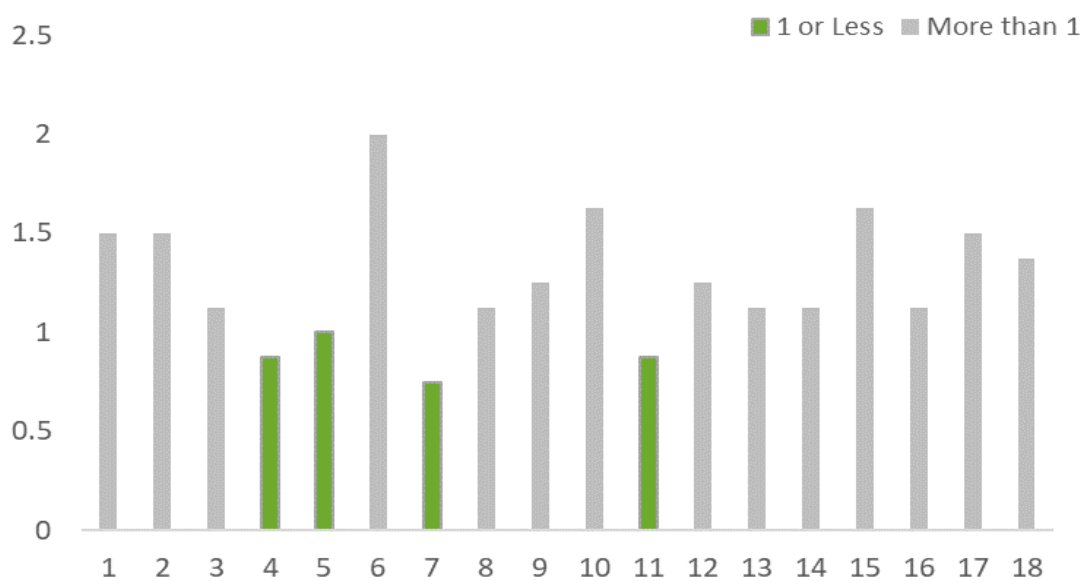
Number of Holes	
	18
Total Number of Times on Course	
	8
Total Chips	
	182
Average Number of Chips per Hole	
	1.26

In order to visualize my chipping performance per hole, I created another pivot table to calculate the average number of chips per hole.
Then, I created a separate table to identify the holes I average 1 or less chips and more than 1 chip by using IF() on the pivot table.

	fx	=IF(B5<=1,B5,"")

	A	B	C	D	E
	Hole	Average of Ch	Hole	1 or Less	More than 1
	1	1.50	1		1.5
	2	1.50	2		1.5
	3	1.13	3		1.125
	4	0.88	4	0.875	
	5	1.00	5	1	
	6	2.00	6		2
	7	0.75	7	0.75	
	8	1.13	8		1.125
	9	1.25	9		1.25
	10	1.63	10		1.625
	11	0.88	11	0.875	
	12	1.25	12		1.25
	13	1.13	13		1.125
	14	1.13	14		1.125
	15	1.63	15		1.625
	16	1.13	16		1.125
	17	1.50	17		1.5
	18	1.38	18		1.375

Finally, I created a bar graph that distinguished the average number of chips per hole.

Highlighted are the holes I average 1 or less chips. There are only 4 out of 18 holes where I average that. With my average chipping being 1.26, I am 26.00% above the benchmark of 1 chip per hole.

4. What is the average number of putts I hit per hole?

I average 2.24 putts per hole.

Putting is the final act of putting the golf ball into the hole. On average, it should take 2 putts to put the ball into the hole. By calculating the average putting attempts, I can discover if this is an area that I need to work on.

This was calculated the same was as the number of chips by first creating a pivot table to find the total number of putts.

Sum of Putts
322

Then, using COUNT() on the "Hole" column, I calculated the total number of holes in the golf course, and also used COUNT() on the pivot table containing the dates to calculate the total number of times I played on the course. The total number of chips was divided by the number of holes and the total number of times I played on the course to find the average number of putts I played per hole.

Number of Holes		
18		
Total Number of Times on Course		
8		
Total Putts		
322		
Average Number of Putts per Hole		
2.24		

In order to understand my putting performance per hole, I created another pivot table to calculate the average number of putts per hole.
Then, I created a separate table to identify the holes I average 2 or less putts and more than 2 putts by using IF() on the pivot table.

	4	⋮	✕	✓	*fx*	=IF(B4<=2,B4,"")

	A	B	C	D	E
	Hole ▾	Average of Putts	Hole	2 or Less	More than 2
	1	2.75	1		2.75
	2	2.38	2		2.375
	3	2.00	3	2	
	4	1.88	4	1.875	
	5	2.38	5		2.375
	6	2.25	6		2.25
	7	1.88	7	1.875	
	8	2.75	8		2.75
	9	1.88	9	1.875	
	10	2.13	10		2.125
	11	2.50	11		2.5
	12	2.25	12		2.25
	13	2.13	13		2.125
	14	2.25	14		2.25
	15	2.00	15	2	
	16	2.13	16		2.125
	17	2.13	17		2.125
	18	2.63	18		2.625

Finally, I created a bar graph that distinguished the average number of putts per hole.
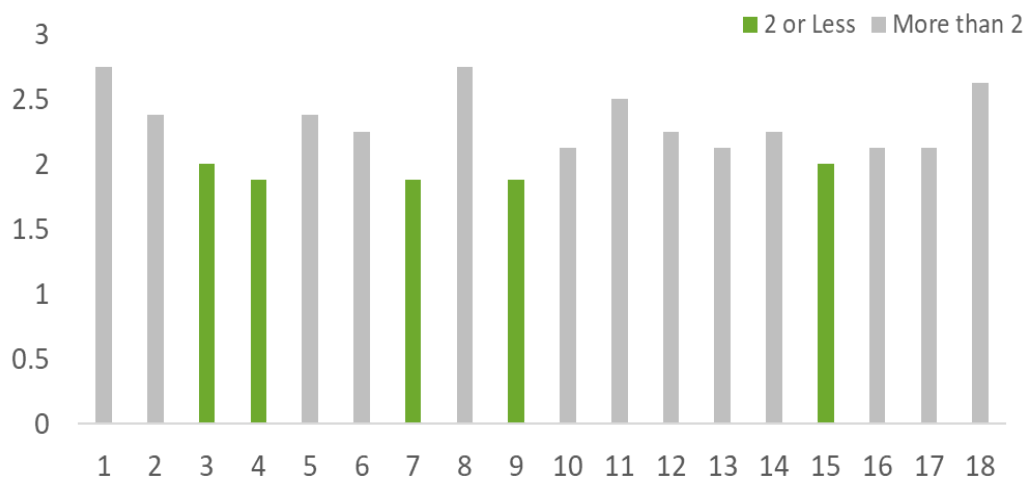
Highlighted are the holes where I successfully putt 2 or less times. Only at 5 out of 18 holes, or 27.78% of the time, am I able to putt 2 or less times.

5. How many penalties do I average per round of golf?

I average 7.15 penalties per round of golf.

Penalties are an important metric to track because they affect the overall score. Some penalties are more costly than others because they directly affect the score. For example, if the ball goes out of bounds, 2 strokes are added to your score. If a ball goes into the hazards, for example a lake, it's a 1 stroke penalty. There are some instances, such as hitting a tree or entering the bunker (sand), that are not considered penalties but because they are obstructions that affect the ball flight path, resulting in having to take an extra stroke to resume optimal play, I included them into the "penalty" category.

To calculate the average penalties I encounter per round of golf, first I had to differentiate the penalties based on the number of strokes it added. So, I created 2 columns that separate the 1 stroke and 2 stroke penalties.

Penalty (excluding OB)	OB Penalty
O	
H	
H	
H	
	OB
B	
H	
H	

In order to calculate the penalties, 2 additional columns were created.

Penalty (excluding OB)	Total Penalty (+1)	OB Penalty	Out of Bounds (+2)	
O	1			
H	1			
H	1			
H	1			
		OB	2	
B	1			
H	1			
H	1			

However, in some holes, more than 1 type of penalty was acquired. So, by using IF(), LEN(), TRIM(), and SUBSTITUTE(), a formula that would count characters grouped within a comma as a value of 1, and a comma as a value of 1 was created.

=IF(ISBLANK(G2),"",LEN(TRIM(G2))-LEN(SUBSTITUTE(TRIM(G2),",",""))+1)

For example, in the image below, the row containing "H, B" has a total penalty of 2 while the row containing only "B" has a total penalty of 1.

Penalty (excluding OB)	Total Penalty (+1)	
H, B	2	
B	1	

Below, is a more simplified version of the formula for the row containing "H, B":

$$\text{LEN(TRIM(G2))} = H + \text{" , "} + B = 3$$
$$\text{LEN(SUBSTITUTE(TRIM(G2),",",""))} = H + B = 2$$
$$+1 = 1$$

$$= 3 - 2 + 1 = 2$$

For 2 stroke penalties, the same formula was used except the "+1" was changed to "+2" to adjust severity.

$$=IF(ISBLANK(I140),"",LEN(TRIM(I140))-LEN(SUBSTITUTE(TRIM(I140),",","")))+2)$$

=IF(ISBLANK(I140),"",LEN(TRIM(I140))-LEN(SUBSTITUTE(TRIM(I140),",","")))+2)

Plus/Minus	D/H/I	Penalty (excluding OB)	Total Penalty (+1)	OB Penalty	Out of Bounds (+2)	C
3	3					
4	6			OB, OB,	4	

After all the penalties are given a quantitative value, a pivot table containing the dates and total penalties was created.

Row Labels	Sum of Out of Bounds (+2)	Sum of Total Penalty (+1)
1/23/2023	2	7
2/6/2023	0	5
2/14/2023	2	2
4/3/2023	0	10
4/17/2023	0	5
5/1/2023	0	4
5/22/2023	4	9
5/29/2023	4	3

To find the average penalties per round of golf, I used COUNT() on the "Row Label" column to calculate the total number of times I played on the course. Then, I used SUM() to add the "Sum of Out of Bounds(+2)" and "Sum of Total Penalty (+1)" to find the total penalties. Finally, I divided the total penalties by the total number of times I played on the course to calculate the average penalties I incur per game.

Total Number of Times on Course	
8	
Total Penalties	
57	
Average Penalties per Game	
7.13	

6. What do I need to work on to break 100?

As previously stated, breaking a score of 100 requires 9 bogeys (score that is 1 over par) and 9 double bogeys (score that is 2 over par). This averages to 1.5 over par per hole.

Currently, I am not averaging 1.5 over par for any of the holes.

From previously calculated data, I am averaging 1.26 chips per hole, 2.24 putts per hole, and incurring 7.13 stroke penalties per round of golf. In total, this adds a total of 20 strokes to my score (calculations below).

Personal Average Statistics

1.26 chips x 18 holes = 22.68
2.24 chips x 18 holes = 40.32
7.13 penalties

22.68 chips + 40.32 putts + 7.13 penalty=
70.17 total strokes

Average Benchmark

1 chip x 14 holes = 14 chips
2 putts x 18 holes 36 putts
0 penalties

14 chips + 36 putts + 0 penalties =
50 total strokes

Average Difference

70.17 - 50 strokes =
20.17 total strokes

By working on chipping, putting, and reducing the number of penalties can significantly lower my average total score by 20 strokes. Therefore, on average, this should lower the score difference from par, resulting in breaking 100 in a round of golf.

Furthermore, data suggests that the 1st, 6th, and 10th hole is the most difficult for me. More data regarding why these holes are most difficult for me can be gathered to discover more areas to improve upon. Possible data can include distance from the tee box to the hole, club choice, and terrain.

Golf Performance Dashboard: Janurary 2023 - Present
General Old Golf Course

Average Score per Game	Average Chips per Hole	Average Putts per Hole	Average Penalties per Game
117.63	**1.26**	**2.24**	**7.13**

Difference from Par per Hole

Score Trend

Chips per Hole

Putts per Hole