

In [15]:

```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import matplotlib.figure
import seaborn as sns
```

In [16]:

```
df = pd.read_csv('world_cup_2019_batting_raw.csv')
df
```

Out[16]:

	Player	Mat	Inns	NO	Runs	HS	Ave	BF	SR	100	50	0	4s	6
0	RG Sharma (INDIA)	9	9	1	648	140	81.00	659	98.33	5	1	0	67	1
1	DA Warner (AUS)	10	10	1	647	166	71.88	724	89.36	3	3	0	66	
2	Shakib Al Hasan (BDESH)	8	8	1	606	124*	86.57	631	96.03	2	5	0	60	
3	KS Williamson (NZ)	10	9	2	578	148	82.57	771	74.96	2	2	0	50	
4	JE Root (ENG)	11	11	2	556	107	61.77	621	89.53	2	3	0	48	
5	JM Bairstow (ENG)	11	11	0	532	111	48.36	573	92.84	2	2	2	67	1
6	AJ Finch (AUS)	10	10	0	507	153	50.70	497	102.01	2	3	1	47	1
7	Babar Azam (PAK)	8	8	1	474	101*	67.71	540	87.77	1	3	0	50	
8	BA Stokes (ENG)	11	10	3	465	89	66.42	499	93.18	0	5	0	38	1
9	JJ Roy (ENG)	8	7	0	443	153	63.28	384	115.36	1	4	0	51	1
10	V Kohli (INDIA)	9	9	1	443	82	55.37	471	94.05	0	5	0	38	
11	F du Plessis (SA)	9	8	2	387	100	64.50	432	89.58	1	3	0	36	
12	SPD Smith (AUS)	10	10	0	379	85	37.90	441	85.94	0	4	0	33	
13	AT Carey (AUS)	10	9	3	375	85	62.50	360	104.16	0	3	0	46	
14	EJG Morgan (ENG)	11	10	1	371	148	41.22	334	111.07	1	1	0	26	2
15	Mushfiqu Rahim (BDESH)	8	8	1	367	102*	52.42	396	92.67	1	2	0	30	
16	N Pooran (WI)	9	8	1	367	118	52.42	366	100.27	1	2	0	33	1
17	KL Rahul (INDIA)	9	9	1	361	111	45.12	466	77.46	1	2	1	31	
18	LRPL Taylor (NZ)	10	9	0	350	82	38.88	465	75.26	0	3	0	29	

	Player	Mat	Inns	NO	Runs	HS	Ave	BF	SR	100	50	0	4s	6
19	UT Khawaja (AUS)	9	9	0	316	89	35.11	358	88.26	0	2	0	30	
20	JC Buttler (ENG)	11	9	0	312	103	34.66	254	122.83	1	2	0	22	
21	HE van der Dussen (SA)	9	6	1	311	95	62.20	344	90.40	0	3	0	14	1
22	Imam-ul-Haq (PAK)	8	8	0	305	100	38.12	400	76.25	1	1	0	31	
23	Q de Kock (SA)	9	9	1	305	68	38.12	351	86.89	0	3	0	34	
24	SD Hope (WI)	9	8	0	274	96	34.25	389	70.43	0	3	0	21	
25	MDKJ Perera (SL)	7	7	0	273	78	39.00	246	110.97	0	3	0	32	
26	MS Dhoni (INDIA)	9	8	2	273	56*	45.50	311	87.78	0	2	0	20	
27	SO Hetmyer (WI)	9	8	1	257	54	36.71	253	101.58	0	2	0	25	
28	Rahmat Shah (AFG)	9	9	0	254	62	28.22	390	65.12	0	1	1	31	
29	Mohammad Hafeez (PAK)	8	8	0	253	84	31.62	285	88.77	0	1	0	22	
30	AD Mathews (SL)	7	7	1	244	113	40.66	314	77.70	1	1	2	20	
31	CH Gayle (WI)	9	8	0	242	87	30.25	274	88.32	0	2	1	26	1
32	Tamim Iqbal (BDESH)	8	8	0	235	62	29.37	328	71.64	0	1	0	25	
33	JDS Neesham (NZ)	10	8	1	232	97*	33.14	294	78.91	0	1	0	16	
34	Najibullah Zadran (AFG)	8	8	0	230	51	28.75	259	88.80	0	1	0	25	
35	HH Pandya (INDIA)	9	9	2	226	48	32.28	201	112.43	0	0	1	21	
36	FDM Karunaratne (SL)	7	7	1	222	97	37.00	311	71.38	0	2	1	22	
37	Mahmudullah (BDESH)	7	6	1	219	69	43.80	244	89.75	0	1	0	14	
38	WIA Fernando (SL)	4	4	0	203	104	50.75	192	105.72	1	0	0	23	
39	HM Amla (SA)	7	7	2	203	80*	40.60	313	64.85	0	2	0	16	
40	Haris Sohail (PAK)	5	5	0	198	89	39.60	209	94.73	0	2	0	18	

	Player	Mat	Inns	NO	Runs	HS	Ave	BF	SR	100	50	0	4s	6
41	Hashmatullah Shahidi (AFG)	8	8	0	197	76	24.62	349	56.44	0	2	1	20	
42	Gulbadin Naib (AFG)	9	9	0	194	47	21.55	243	79.83	0	0	0	20	
43	C de Grandhomme (NZ)	10	8	0	190	64	23.75	189	100.52	0	2	1	16	
44	Fakhar Zaman (PAK)	8	8	0	186	62	23.25	227	81.93	0	1	2	24	
45	MJ Guptill (NZ)	10	10	1	186	73*	20.66	221	84.16	0	1	2	22	
46	Liton Das (BDESH)	5	5	1	184	94*	46.00	167	110.17	0	1	0	16	
47	GJ Maxwell (AUS)	10	10	2	177	46*	22.12	118	150.00	0	0	1	19	
48	JO Holder (WI)	9	7	0	170	51	24.28	156	108.97	0	1	1	16	
49	Soumya Sarkar (BDESH)	8	8	0	166	42	20.75	164	101.21	0	0	0	24	

In [17]:

df.head()

Out[17]:

	Player	Mat	Inns	NO	Runs	HS	Ave	BF	SR	100	50	0	4s	6s
0	RG Sharma (INDIA)	9	9	1	648	140	81.00	659	98.33	5	1	0	67	14
1	DA Warner (AUS)	10	10	1	647	166	71.88	724	89.36	3	3	0	66	8
2	Shakib Al Hasan (BDESH)	8	8	1	606	124*	86.57	631	96.03	2	5	0	60	2
3	KS Williamson (NZ)	10	9	2	578	148	82.57	771	74.96	2	2	0	50	3
4	JE Root (ENG)	11	11	2	556	107	61.77	621	89.53	2	3	0	48	2

In [18]:

```
df.tail()
```

Out[18]:

	Player	Mat	Inns	NO	Runs	HS	Ave	BF	SR	100	50	0	4s	6s
45	MJ Guptill (NZ)	10	10	1	186	73*	20.66	221	84.16	0	1	2	22	4
46	Liton Das (BDESH)	5	5	1	184	94*	46.00	167	110.17	0	1	0	16	5
47	GJ Maxwell (AUS)	10	10	2	177	46*	22.12	118	150.00	0	0	1	19	7
48	JO Holder (WI)	9	7	0	170	51	24.28	156	108.97	0	1	1	16	8
49	Soumya Sarkar (BDESH)	8	8	0	166	42	20.75	164	101.21	0	0	0	24	2

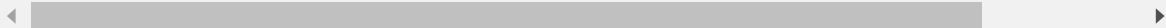
In [19]:

df.isnull()

Out[19]:

	Player	Mat	Inns	NO	Runs	HS	Ave	BF	SR	100	50	0
0	False	False	False	False	False	False	False	False	False	False	False	False
1	False	False	False	False	False	False	False	False	False	False	False	False
2	False	False	False	False	False	False	False	False	False	False	False	False
3	False	False	False	False	False	False	False	False	False	False	False	False
4	False	False	False	False	False	False	False	False	False	False	False	False
5	False	False	False	False	False	False	False	False	False	False	False	False
6	False	False	False	False	False	False	False	False	False	False	False	False
7	False	False	False	False	False	False	False	False	False	False	False	False
8	False	False	False	False	False	False	False	False	False	False	False	False
9	False	False	False	False	False	False	False	False	False	False	False	False
10	False	False	False	False	False	False	False	False	False	False	False	False
11	False	False	False	False	False	False	False	False	False	False	False	False
12	False	False	False	False	False	False	False	False	False	False	False	False
13	False	False	False	False	False	False	False	False	False	False	False	False
14	False	False	False	False	False	False	False	False	False	False	False	False
15	False	False	False	False	False	False	False	False	False	False	False	False
16	False	False	False	False	False	False	False	False	False	False	False	False
17	False	False	False	False	False	False	False	False	False	False	False	False
18	False	False	False	False	False	False	False	False	False	False	False	False
19	False	False	False	False	False	False	False	False	False	False	False	False
20	False	False	False	False	False	False	False	False	False	False	False	False
21	False	False	False	False	False	False	False	False	False	False	False	False
22	False	False	False	False	False	False	False	False	False	False	False	False
23	False	False	False	False	False	False	False	False	False	False	False	False
24	False	False	False	False	False	False	False	False	False	False	False	False
25	False	False	False	False	False	False	False	False	False	False	False	False
26	False	False	False	False	False	False	False	False	False	False	False	False
27	False	False	False	False	False	False	False	False	False	False	False	False
28	False	False	False	False	False	False	False	False	False	False	False	False
29	False	False	False	False	False	False	False	False	False	False	False	False
30	False	False	False	False	False	False	False	False	False	False	False	False

	Player	Mat	Inns	NO	Runs	HS	Ave	BF	SR	100	50	0
31	False	False	False	False	False	False	False	False	False	False	False	False
32	False	False	False	False	False	False	False	False	False	False	False	False
33	False	False	False	False	False	False	False	False	False	False	False	False
34	False	False	False	False	False	False	False	False	False	False	False	False
35	False	False	False	False	False	False	False	False	False	False	False	False
36	False	False	False	False	False	False	False	False	False	False	False	False
37	False	False	False	False	False	False	False	False	False	False	False	False
38	False	False	False	False	False	False	False	False	False	False	False	False
39	False	False	False	False	False	False	False	False	False	False	False	False
40	False	False	False	False	False	False	False	False	False	False	False	False
41	False	False	False	False	False	False	False	False	False	False	False	False
42	False	False	False	False	False	False	False	False	False	False	False	False
43	False	False	False	False	False	False	False	False	False	False	False	False
44	False	False	False	False	False	False	False	False	False	False	False	False
45	False	False	False	False	False	False	False	False	False	False	False	False
46	False	False	False	False	False	False	False	False	False	False	False	False
47	False	False	False	False	False	False	False	False	False	False	False	False
48	False	False	False	False	False	False	False	False	False	False	False	False
49	False	False	False	False	False	False	False	False	False	False	False	False



In [20]:

```
df.notnull().sum()
```

Out[20]:

Player	50
Mat	50
Inns	50
NO	50
Runs	50
HS	50
Ave	50
BF	50
SR	50
100	50
50	50
0	50
4s	50
6s	50
dtype: int64	

In [21]:

df.value_counts()

Out[21]:

Player	Mat	Inns	NO	Runs	HS	Ave	BF	S
R 100 50 0 4s 6s								
AD Mathews (SL)	7	7	1	244	113	40.66	314	7
7.70 1 1 2 20 4	1							
Najibullah Zadran (AFG)	8	8	0	230	51	28.75	259	8
8.80 0 1 0 25 4	1							
KS Williamson (NZ)	10	9	2	578	148	82.57	771	7
4.96 2 2 0 50 3	1							
LRPL Taylor (NZ)	10	9	0	350	82	38.88	465	7
5.26 0 3 0 29 2	1							
Liton Das (BDESH)	5	5	1	184	94*	46.00	167	1
10.17 0 1 0 16 5	1							
MDKJ Perera (SL)	7	7	0	273	78	39.00	246	1
10.97 0 3 0 32 1	1							
MJ Guptill (NZ)	10	10	1	186	73*	20.66	221	8
4.16 0 1 2 22 4	1							
MS Dhoni (INDIA)	9	8	2	273	56*	45.50	311	8
7.78 0 2 0 20 5	1							
Mahmudullah (BDESH)	7	6	1	219	69	43.80	244	8
9.75 0 1 0 14 5	1							
Mohammad Hafeez (PAK)	8	8	0	253	84	31.62	285	8
8.77 0 1 0 22 5	1							
Mushfiqur Rahim (BDESH)	8	8	1	367	102*	52.42	396	9
2.67 1 2 0 30 2	1							
N Pooran (WI)	9	8	1	367	118	52.42	366	1
00.27 1 2 0 33 10	1							
Q de Kock (SA)	9	9	1	305	68	38.12	351	8
6.89 0 3 0 34 4	1							
AJ Finch (AUS)	10	10	0	507	153	50.70	497	1
02.01 2 3 1 47 18	1							
RG Sharma (INDIA)	9	9	1	648	140	81.00	659	9
8.33 5 1 0 67 14	1							
Rahmat Shah (AFG)	9	9	0	254	62	28.22	390	6
5.12 0 1 1 31 1	1							
SD Hope (WI)	9	8	0	274	96	34.25	389	7
0.43 0 3 0 21 3	1							
SO Hetmyer (WI)	9	8	1	257	54	36.71	253	1
01.58 0 2 0 25 6	1							
SPD Smith (AUS)	10	10	0	379	85	37.90	441	8
5.94 0 4 0 33 2	1							
Shakib Al Hasan (BDESH)	8	8	1	606	124*	86.57	631	9
6.03 2 5 0 60 2	1							
Soumya Sarkar (BDESH)	8	8	0	166	42	20.75	164	1
01.21 0 0 0 24 2	1							
Tamim Iqbal (BDESH)	8	8	0	235	62	29.37	328	7
1.64 0 1 0 25 0	1							
UT Khawaja (AUS)	9	9	0	316	89	35.11	358	8
8.26 0 2 0 30 1	1							
V Kohli (INDIA)	9	9	1	443	82	55.37	471	9
4.05 0 5 0 38 2	1							

```

KL Rahul (INDIA)          9   9   1  361  111  45.12  466  7
7.46  1   2   1  31  5   1
JO Holder (WI)           9   7   0  170  51  24.28  156  1
08.97 0   1   1  16  8   1
JM Bairstow (ENG)       11  11   0  532  111  48.36  573  9
2.84  2   2   2  67  11  1
JJ Roy (ENG)            8   7   0  443  153  63.28  384  1
15.36 1   4   0  51  12  1
AT Carey (AUS)          10  9   3  375  85  62.50  360  1
04.16 0   3   0  46  2   1
BA Stokes (ENG)         11  10   3  465  89  66.42  499  9
3.18  0   5   0  38  11  1
Babar Azam (PAK)        8   8   1  474  101* 67.71  540  8
7.77  1   3   0  50  2   1
C de Grandhomme (NZ)    10  8   0  190  64  23.75  189  1
00.52 0   2   1  16  4   1
CH Gayle (WI)           9   8   0  242  87  30.25  274  8
8.32  0   2   1  26  12  1
DA Warner (AUS)         10  10   1  647  166  71.88  724  8
9.36  3   3   0  66  8   1
EJG Morgan (ENG)        11  10   1  371  148  41.22  334  1
11.07 1   1   0  26  22  1
F du Plessis (SA)       9   8   2  387  100  64.50  432  8
9.58  1   3   0  36  4   1
FDM Karunaratne (SL)    7   7   1  222  97  37.00  311  7
1.38  0   2   1  22  0   1
Fakhar Zaman (PAK)      8   8   0  186  62  23.25  227  8
1.93  0   1   2  24  3   1
GJ Maxwell (AUS)        10  10   2  177  46*  22.12  118  1
50.00 0   0   1  19  7   1
Gulbadin Naib (AFG)     9   9   0  194  47  21.55  243  7
9.83  0   0   0  20  2   1
HE van der Dussen (SA)  9   6   1  311  95  62.20  344  9
0.40  0   3   0  14  10  1
HH Pandya (INDIA)       9   9   2  226  48  32.28  201  1
12.43 0   0   1  21  4   1
HM Amla (SA)            7   7   2  203  80*  40.60  313  6
4.85  0   2   0  16  0   1
Haris Sohail (PAK)      5   5   0  198  89  39.60  209  9
4.73  0   2   0  18  5   1
Hashmatullah Shahidi (AFG) 8   8   0  197  76  24.62  349  5
6.44  0   2   1  20  2   1
Imam-ul-Haq (PAK)      8   8   0  305  100  38.12  400  7
6.25  1   1   0  31  1   1
JC Buttler (ENG)        11  9   0  312  103  34.66  254  1
22.83 1   2   0  22  8   1
JDS Neesham (NZ)       10  8   1  232  97*  33.14  294  7
8.91  0   1   0  16  5   1
JE Root (ENG)           11  11   2  556  107  61.77  621  8
9.53  2   3   0  48  2   1
WIA Fernando (SL)       4   4   0  203  104  50.75  192  1
05.72 1   0   0  23  4   1
dtype: int64

```

In [24]:

```

x = df['Player']
y1 = df['Mat']
y2 = df['Runs']
y3 = df['Ave']
y4 = df['SR']

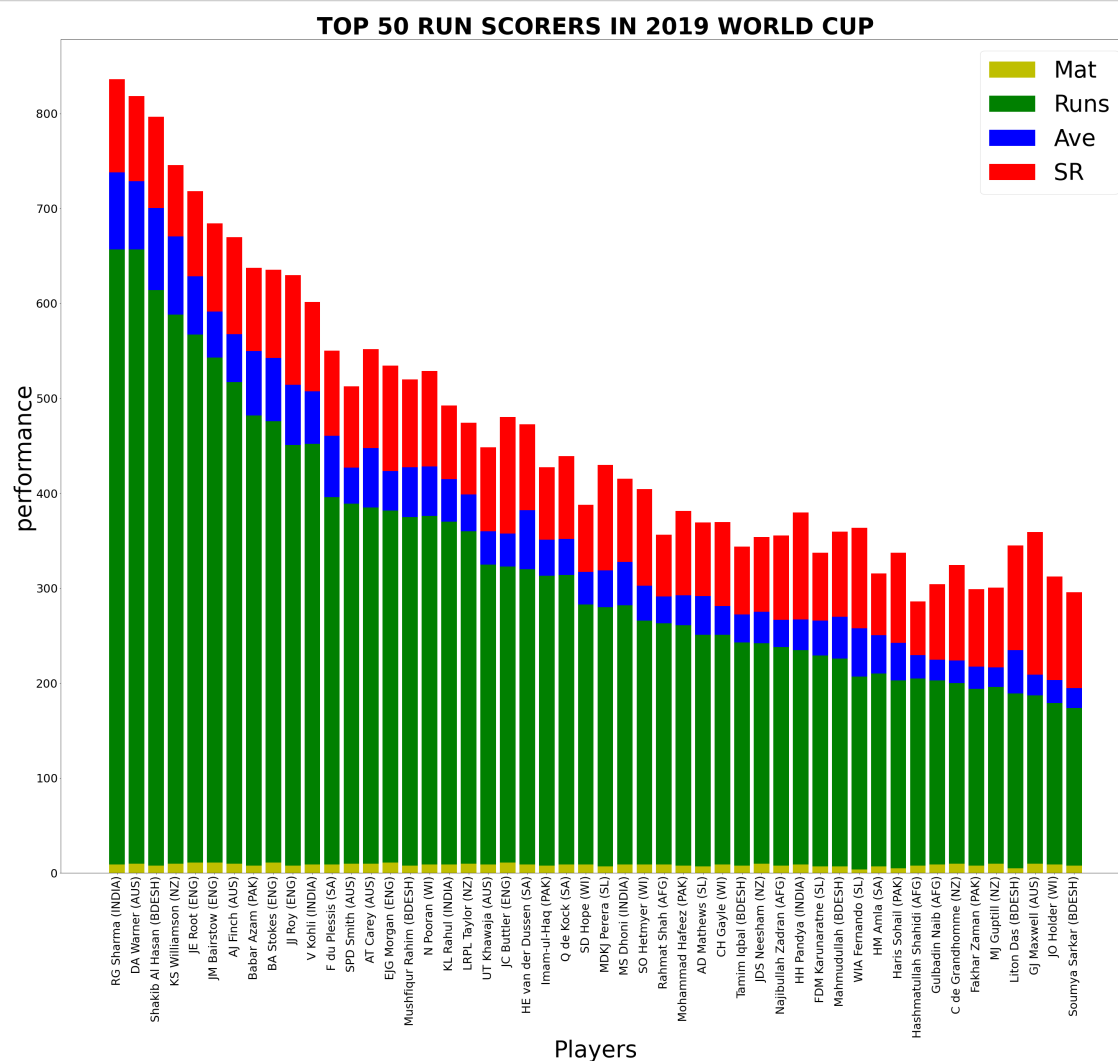
plt.figure(figsize=(50,40))
plt.xticks(fontsize=30)
plt.yticks(fontsize=30)

plt.xlabel('xlabel',fontsize=60)
plt.ylabel('ylabel',fontsize=60)

plt.bar(x, y1, color='y')
plt.bar(x, y2, bottom=y1, color='g')
plt.bar(x, y3, bottom=y1+y2, color='b')
plt.bar(x, y4, bottom=y1+y2+y3, color='r')

plt.xticks(rotation=90)
plt.xlabel("Players")
plt.ylabel("performance")
plt.legend(["Mat", "Runs", "Ave", "SR"],fontsize=60)
plt.title("TOP 50 RUN SCORERS IN 2019 WORLD CUP", fontsize=60, fontweight='bold')
plt.show()

```

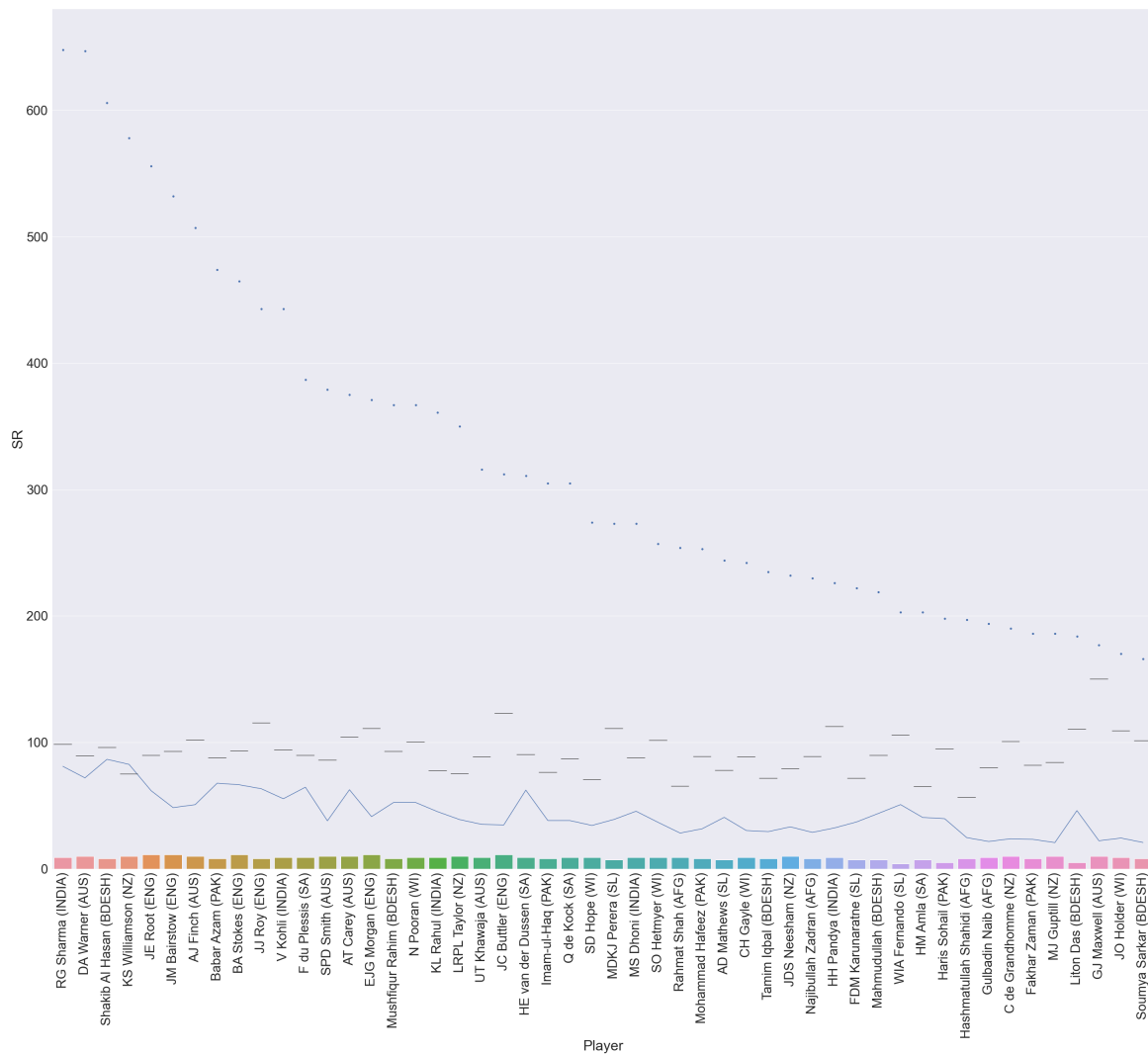


In [31]:

```
plt.figure(figsize=(50,40))
sns.set(font_scale=3)
plt.xticks(rotation=90)
sns.scatterplot(x='Player',y='Runs',data=df)
sns.lineplot(x='Player',y='Ave',data=df)
sns.barplot(x='Player',y='Mat',data=df)
sns.violinplot(x='Player',y='SR',data=df)
```

Out[31]:

<AxesSubplot:xlabel='Player', ylabel='SR'>



In [38]:

```
x=df.groupby('Player').sum()[['Mat','Runs','Ave','SR']].sort_values('Runs',ascending=False)
```

Out[38]:

	Player	Mat	Runs	Ave	SR
0	RG Sharma (INDIA)	9	648	81.00	98.33
1	DA Warner (AUS)	10	647	71.88	89.36
2	Shakib Al Hasan (BDESH)	8	606	86.57	96.03
3	KS Williamson (NZ)	10	578	82.57	74.96
4	JE Root (ENG)	11	556	61.77	89.53
5	JM Bairstow (ENG)	11	532	48.36	92.84
6	AJ Finch (AUS)	10	507	50.70	102.01
7	Babar Azam (PAK)	8	474	67.71	87.77
8	BA Stokes (ENG)	11	465	66.42	93.18
9	JJ Roy (ENG)	8	443	63.28	115.36
10	V Kohli (INDIA)	9	443	55.37	94.05
11	F du Plessis (SA)	9	387	64.50	89.58
12	SPD Smith (AUS)	10	379	37.90	85.94
13	AT Carey (AUS)	10	375	62.50	104.16
14	EJG Morgan (ENG)	11	371	41.22	111.07
15	Mushfiquir Rahim (BDESH)	8	367	52.42	92.67
16	N Pooran (WI)	9	367	52.42	100.27
17	KL Rahul (INDIA)	9	361	45.12	77.46
18	LRPL Taylor (NZ)	10	350	38.88	75.26
19	UT Khawaja (AUS)	9	316	35.11	88.26
20	JC Buttler (ENG)	11	312	34.66	122.83
21	HE van der Dussen (SA)	9	311	62.20	90.40
22	Q de Kock (SA)	9	305	38.12	86.89
23	Imam-ul-Haq (PAK)	8	305	38.12	76.25
24	SD Hope (WI)	9	274	34.25	70.43
25	MS Dhoni (INDIA)	9	273	45.50	87.78
26	MDKJ Perera (SL)	7	273	39.00	110.97
27	SO Hetmyer (WI)	9	257	36.71	101.58
28	Rahmat Shah (AFG)	9	254	28.22	65.12
29	Mohammad Hafeez (PAK)	8	253	31.62	88.77

	Player	Mat	Runs	Ave	SR
30	AD Mathews (SL)	7	244	40.66	77.70
31	CH Gayle (WI)	9	242	30.25	88.32
32	Tamim Iqbal (BDESH)	8	235	29.37	71.64
33	JDS Neesham (NZ)	10	232	33.14	78.91
34	Najibullah Zadran (AFG)	8	230	28.75	88.80
35	HH Pandya (INDIA)	9	226	32.28	112.43
36	FDM Karunaratne (SL)	7	222	37.00	71.38
37	Mahmudullah (BDESH)	7	219	43.80	89.75
38	WIA Fernando (SL)	4	203	50.75	105.72
39	HM Amla (SA)	7	203	40.60	64.85
40	Haris Sohail (PAK)	5	198	39.60	94.73
41	Hashmatullah Shahidi (AFG)	8	197	24.62	56.44
42	Gulbadin Naib (AFG)	9	194	21.55	79.83
43	C de Grandhomme (NZ)	10	190	23.75	100.52
44	MJ Guptill (NZ)	10	186	20.66	84.16
45	Fakhar Zaman (PAK)	8	186	23.25	81.93
46	Liton Das (BDESH)	5	184	46.00	110.17
47	GJ Maxwell (AUS)	10	177	22.12	150.00
48	JO Holder (WI)	9	170	24.28	108.97
49	Soumya Sarkar (BDESH)	8	166	20.75	101.21

In [33]:

```
inp = input('Enter Player name :')
m = df.groupby(['Player'])
imp = m.get_group(inp)
imp
```

Enter Player name :KS Williamson (NZ)

Out[33]:

	Player	Mat	Inns	NO	Runs	HS	Ave	BF	SR	100	50	0	4s	6s
3	KS Williamson (NZ)	10	9	2	578	148	82.57	771	74.96	2	2	0	50	3

In [50]:

```
DataFrame = pd.DataFrame(data=m.get_group(inp))  
DataFrame.plot.bar()
```

Out[50]:

<AxesSubplot:>

