PROJECT REPORT

On

WORLD CUP

Submitted to Centurion University of Technology& Management
in partial fulfillment of the requirement for award of the degree of

B. TECH.

in

COMPUTER SCIENCE & ENGINEERING

Sub:- DATA ANALYSIS AN VISUALISATION USING PYTHON

Submitted By

Student-   Registration Num
Shubham Kumar – 210101120017
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Vikram Kumar - 210101120005

Under the Guidance of
Guide Name :- **Dr. Dhawaleswar rao**

DEPT. OF COMPUTER SCIENCE & ENGINEERING

SCHOOL OF ENGINEERING &TECHNOLOGY,
CUTM, Paralakhemundi-761200

C E R T I F I C A T E

This is to be certified that the minor project entitled "WORLD CUP" has been submitted for the Bachelor of Technology in Computer Science Engineering of School of Engineering & Technology, CUTM, Paralakhemundi during the academic year 2021-2022 is a persuasive piece of project work carried out by "SHUBHAM KUMAR, MANISH KUMAR, VIKRAM KUMAR" towards the partial fulfillment for award of the degree (B.Tech.) under the guidance of "Dr. Dhawaleswar raw" and no part there of has been submitted by them for any degree to the best of my knowledge.

Signature of HOD   Signature of Project Guide

Name of the HOD   Name of the Guide

Dr. Devandra Maharana   **Dr. Dhawaleswar rao**

EVALUATION SHEET

1. Title of the Project: WORLD CUP

2. Year of submission: 2022

3. Name of the degree: BTech

4. Date of Examination / Viva: 18th FEB 2022

5. Student Name with Regn No.:

> Shubham Kumar – 210101120017
> Manish Kumar – 210101120013
> Vikram Kumar - 210101120005

Name of the Guide: **Dr. Dhawaleswar raw**

Result: [APPROVED/REJECTED]

Signature of HOD   Signature of Project Guide

Name of the HOD   Name of the Guide

Dr. Devandra Maharana   **Dr. Dhawaleswar raw**

CANDIDATE'S DECLARATION

We " Shubham Kumar – 210101120017 , Manish Kumar-210101120013, Vikram Kumar - 210101120005" , B.Tech.in CSE (Semester- I) of School of Engineering &Technology, CUTM, Paralakhemundi, hereby declare that the Project Report entitled "WORLD CUP" is an original work and data provided in the study is authentic one. This report has not been submitted to any other Institute for the award of any other degree by me.

Signature of Student

Shubham Kumar

Manish Kumar

Vikram Kumar

ACKNOWLEDGEMENT

I would like to thank my teacher Dr.Dhawaleswar Rao who gave me this opportunity to work on this project. I got to learn a lot from this project about World Cup. I would also like to thank our Branch H.O.D Debendra Maharana

At last, I would like to extend my heartfelt thanks to my parents because without their help this project would not have been successful. Finally, I would like to thank my dear friends who have been with me all the time.
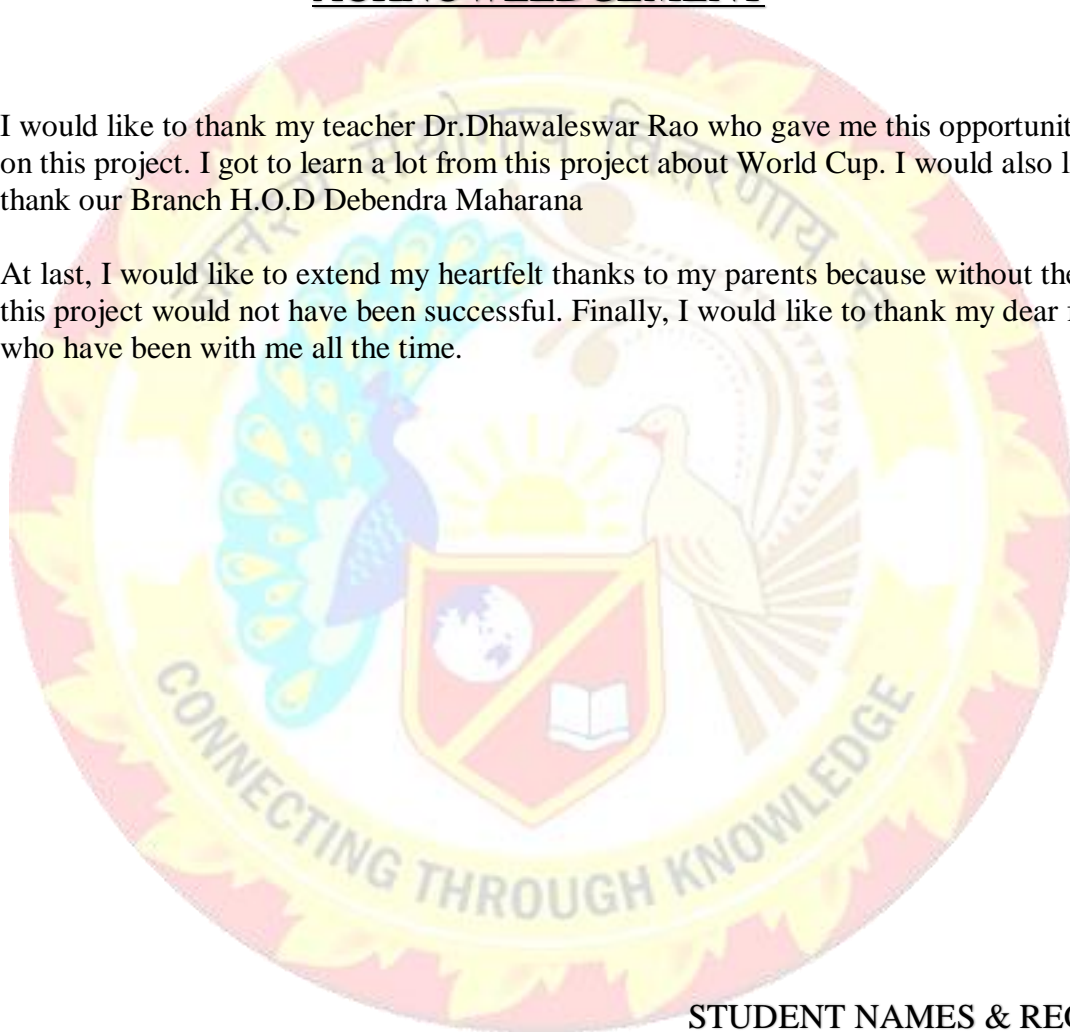
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WORLD
CUP

Abstract

Creat excel file data only

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What is cricket

Cricket is a bat-and-ball game played between two teams of eleven players on a field at the center of which is a 22-yard (20-meter) pitch with a wicket at each end, each comprising two bails balanced on three stumps. The
game proceeds when a player on the fielding team, called the bowler, "bowls" (propels) the ball from one end of the pitch towards the wicket at the other end. The batting side's players score runs by striking the
bowled ball with a bat and running between the wickets, while the bowling side tries to prevent this by keeping the ball within the field and getting it to either wicket, and dismiss each batter (so they are "out")

WORLD CUP

The first world cup was organized in England in June 1975, with the first ODI cricket match having been played only four years earlier. The international championship of one day international (ODI) cricket. The event is organized by the sport's governing body, the international cricket council (ICC), every four years, with preliminary qualification rounds leading up to a finals tournament. The tournament is one of the world's most viewed sporting events and is considered the "flagship event of the international cricket calendar" by the ICC.

Runs	Mins	BF	4s	6s	SR	Pos	Dismissal	Inns

THIS IS DATASET WHICH MAKE IN EXCEL SHEET BY OWN

WORLD CUP(Cricket) MATCHES DATA SET

Batsman	runs	Mins	BF	4s	6s	SR	POS	Dismissal	Inns
1	33	77	49	6	0	67.34	3	caught	4
1	215	503	346	25	1	62.13	3	lbw	1
1	58	67	48	9	0	120.83	3	bowled	3
1	7	26	18	1	0	38.88	3	caught	1
1	8	40	27	1	0	29.62	3	caught	3
1	6	2	3	1	0	200	3	caught	1
1	5	20	9	1	0	55.55	3	caught	3
1	143	387	252	17	2	56.74	3	bowled	1
1	48	98	78	8	0	61.53	4	bowled	1
1	1	8	2	0	0	50	4	caught	3
1	27	91	68	3	0	39.7	4	caught	1
1	138	272	185	18	0	74.59	3	caught	3
1	53	188	114	5	0	46.49	3	caught	2
1	14	35	24	2	0	58.33	3	lbw	4
1	10	41	32	1	0	31.25	3	caught	1
1	134	244	177	8	0	75.7	4	not out	1
1	70	93	70	5	0	100	4	not out	3
1	71	133	112	10	1	63.39	4	caught	2
1	138	350	241	17	0	57.26	4	caught	2
1	53	78	46	4	1	115.21	4	not out	4
1	30	65	53	3	0	56.6	4	stumped	2
1	55	151	125	1	0	44	4	lbw	4
1	5	9	10	1	0	50	4	bowled	2
1	30	57	58	3	0	51.72	5	caught	4
1	119	305	218	10	1	54.58	3	stumped	2
1	8	17	14	1	0	57.14	3	bowled	4
1	0	4	4	0	0	0	4	lbw	2
1	34	118	91	5	0	37.36	4	caught	4
1	48	137	80	5	0	60	4	not out	1

1	31	151	82	5	0	37.8	4	caught	3
1	59	159	113	8	1	52.21	4	run out	2
1	40	84	52	5	0	76.92	4	caught	4
1	130	312	222	19	0	58.55	4	caught	1
1	63	106	70	11	0	90	4	caught	3
1	165	412	246	13	1	67.07	4	not out	2
1	24	43	40	3	0	60	4	caught	1
1	59	72	43	8	1	137.2	3	caught	3
1	27	128	95	2	0	28.42	3	caught	1
1	109	256	202	11	0	53.96	3	lbw	3
1	8	81	52	0	0	15.38	3	caught	2
1	28	69	48	3	0	58.33	3	lbw	4
1	178	512	361	17	0	49.3	3	not out	1
1	21	98	68	2	0	30.88	4	bowled	3
1	111	224	173	14	0	64.16	3	caught	1
1	17	25	15	3	0	113.33	3	bowled	3
1	8	16	16	1	0	50	5	bowled	2
1	37	149	99	3	0	37.37	4	caught	4
1	58	107	94	8	0	61.7	3	bowled	2
1	16	24	9	3	0	177.77	3	caught	4
1	141	512	326	14	0	43.25	4	not out	2
1	40	119	90	3	0	44.44	4	bowled	1
1	6	25	12	1	0	50	4	lbw	3
1	239	578	399	30	1	59.89	4	lbw	2
1	76	211	156	8	0	48.71	4	bowled	1
1	102	438	275	6	0	37.09	4	not out	3
1	83	254	158	5	0	52.53	4	caught	2
2	103	266	191	11	0	53.92	4	lbw	2
2	3	14	10	0	0	30	5	caught	4
2	78	178	107	8	1	72.89	4	caught	1
2	10	33	19	0	0	52.63	4	lbw	3
2	18	96	60	3	0	30	4	caught	1
2	21	87	63	2	0	33.33	4	caught	3
2	1	5	4	0	0	25	4	caught	1
2	29	92	71	4	0	40.84	4	caught	3
2	22	73	55	2	0	40	4	caught	1
2	16	49	30	2	0	53.33	4	caught	3
2	44	74	62	7	0	70.96	4	caught	1
2	88	259	165	10	0	53.33	5	lbw	3
2	200	375	283	24	0	70.67	4	bowled	1
2	44	144	90	4	1	48.88	4	caught	2
2	3	17	8	0	0	37.5	3	caught	1
2	4	21	17	0	0	23.52	3	lbw	3
2	9	12	10	2	0	90	4	caught	1
2	18	45	40	3	0	45	4	caught	3
2	9	42	28	1	0	32.14	4	caught	1
2	45	82	65	7	0	69.23	4	lbw	3
2	211	536	366	20	0	57.65	4	lbw	1

2	17	36	28	1	0	60.71	4	lbw	3
2	40	135	95	5	0	42.1	4	hit wicket	2
2	49	129	98	6	0	50	4	not out	4
2	167	401	267	18	0	62.54	4	caught	1
2	81	172	109	8	0	74.31	4	caught	3
2	62	161	127	9	0	48.81	4	caught	2
2	6	11	11	0	0	54.54	4	not out	4
2	235	515	340	25	1	69.11	4	caught	2
2	15	44	29	1	0	51.72	4	caught	2
2	204	295	246	24	0	82.92	4	lbw	1
2	38	51	40	2	1	95	4	caught	3
2	0	2	2	0	0	0	4	caught	2
2	13	33	37	1	0	35.13	4	bowled	4
2	12	25	17	2	0	70.58	4	lbw	1
2	15	34	25	1	0	60	4	lbw	3
2	6	38	23	0	0	26.08	4	caught	2
2	3	15	8	0	0	37.5	4	caught	1
2	103	158	136	5	1	75.73	4	not out	3
2	13	31	29	2	0	44.82	4	caught	1
2	42	119	84	3	0	50	4	caught	1
2	0	18	11	0	0	0	4	lbw	1
2	104	208	119	12	2	87.39	4	not out	3
2	213	386	267	17	2	79.77	4	caught	2
2	243	447	287	25	0	84.66	4	lbw	1
2	50	89	58	3	0	86.2	5	caught	3
2	5	14	13	0	0	38.46	4	caught	2
2	28	62	40	4	0	70	4	lbw	4
2	153	379	217	15	0	70.5	4	caught	2
2	5	22	20	1	0	25	4	lbw	4
2	54	146	106	9	0	50.94	4	caught	1
2	41	131	79	6	0	51.89	5	bowled	3
3	134	247	166	17	0	80.72	5	caught	1
3	60	133	89	9	0	67.41	5	bowled	3
3	1	6	4	0	0	25	5	caught	2
3	17	84	44	2	0	38.63	5	bowled	4
3	63	113	75	9	1	84	4	caught	2
3	38	89	63	6	1	60.31	4	not out	4
3	130	246	176	19	1	73.86	4	caught	2
3	6	59	39	1	0	15.38	4	caught	2
3	11	52	30	1	0	36.66	4	caught	3
3	24	55	37	2	1	64.86	4	lbw	1
3	73	192	128	5	1	57.03	4	caught	3
3	50	113	79	5	0	63.29	4	caught	1
3	29	50	29	5	0	100	4	bowled	3
3	110	214	139	17	0	79.13	4	caught	2
3	4	16	13	0	0	30.76	4	not out	4
3	76	192	128	11	0	59.37	4	caught	2

3	20	70	56	3	0	35.71	4	caught	4
3	0	11	7	0	0	0	4	caught	1
3	80	153	119	5	0	67.22	4	caught	1
3	3	8	9	0	0	33.33	4	lbw	1
3	4	7	5	1	0	80	3	bowled	3
3	48	119	73	7	0	65.75	3	caught	2
3	9	50	30	2	0	30	3	caught	4
3	254	614	406	27	0	62.56	3	caught	1
3	71	59	48	10	0	147.91	3	not out	3
3	3	11	6	0	0	50	3	caught	1
3	62	165	123	8	0	50.4	3	caught	3
3	26	57	39	5	0	66.66	3	caught	1
3	39	82	46	4	0	84.78	3	lbw	3
3	40	97	49	5	0	81.63	3	caught	1
3	1	6	4	0	0	25	3	lbw	3
3	56	155	122	4	0	45.9	3	lbw	2
3	1	4	2	0	0	50	3	lbw	4
3	124	239	180	11	1	68.88	3	caught	1
3	4	10	5	0	0	80	3	caught	3
3	53	105	98	6	0	54.08	3	caught	2
3	25	123	107	3	0	23.36	3	lbw	4
3	15	21	13	3	0	115.38	3	lbw	1
3	78	251	179	6	0	43.57	2	caught	3
3	21	39	41	1	0	51.21	3	caught	1
3	77	127	112	11	0	68.75	3	lbw	3
3	88	187	144	10	0	61.11	3	caught	1
3	6	47	22	0	0	27.27	3	lbw	3
3	190	375	234	27	1	81.19	4	caught	1
3	5	20	13	1	0	38.46	4	bowled	3
3	78	117	76	12	0	102.63	4	caught	2
3	8	34	20	0	0	40	4	bowled	4
3	29	71	56	4	0	51.78	4	caught	1
3	50	131	94	6	0	53.19	4	caught	3
3	52	135	101	6	0	51.48	4	lbw	1
3	49	140	106	6	0	46.22	4	bowled	3
3	136	287	189	22	0	71.95	4	bowled	1
3	59	156	98	9	0	60.2	4	caught	1
3	72	187	111	15	0	64.86	4	caught	3
3	1	13	2	0	0	50	4	caught	2
3	15	79	50	1	0	30	4	lbw	1
3	51	159	104	5	0	49.03	4	lbw	3
3	9	23	10	1	0	90	4	caught	2
3	67	185	123	9	0	54.47	4	caught	4
3	20	36	23	4	0	86.95	4	caught	1
3	14	34	20	3	0	70	4	caught	3
3	61	193	133	7	0	45.86	4	caught	2
3	83	225	141	8	0	58.86	4	caught	1
3	58	236	167	1	0	34.73	4	not out	3

4	17	62	42	3	0	40.47	2	caught	2
4	52	118	86	6	1	60.46	2	lbw	4
4	38	70	42	7	0	90.47	2	caught	1
4	83	152	116	12	0	71.55	2	caught	3
4	2	12	6	0	0	33.33	2	lbw	1
4	77	138	62	11	0	124.19	2	caught	3
4	0	7	2	0	0	0	2	caught	1
4	64	115	74	9	2	86.48	2	caught	3
4	85	204	131	11	0	64.88	2	caught	1
4	163	312	224	19	1	72.76	2	caught	1
4	116	156	113	8	2	102.65	2	caught	3
4	253	409	286	24	2	88.46	2	caught	1
4	24	31	22	5	0	109.09	2	caught	3
4	1	13	11	0	0	9.09	2	caught	2
4	35	54	37	4	0	94.59	1	caught	4
4	64	117	61	11	0	104.91	2	caught	1
4	23	20	12	5	0	191.66	2	caught	1
4	17	50	22	1	0	77.27	2	caught	3
4	122	150	103	11	2	118.44	1	not out	2
4	5	14	7	0	0	71.42	2	caught	2
4	12	29	22	2	0	54.54	1	caught	2
4	22	54	33	3	0	66.66	2	caught	4
4	0	10	5	0	0	0	2	bowled	2
4	1	7	4	0	0	25	2	bowled	4
4	42	49	41	7	0	102.43	2	caught	2
4	41	46	31	7	0	132.25	1	lbw	4
4	11	13	9	1	1	122.22	1	caught	2
4	68	109	94	6	1	72.34	2	bowled	4
4	97	154	100	16	1	97	1	caught	2
4	35	52	33	6	0	106.06	2	run out	4
4	1	5	4	0	0	25	1	caught	1
4	45	96	78	4	0	57.69	2	bowled	3
4	11	27	25	0	0	44	3	caught	2
4	47	78	51	7	0	92.15	2	run out	4
4	32	96	70	2	0	45.71	2	lbw	1
4	12	10	8	2	0	150	1	caught	3
4	144	234	143	17	1	100.69	2	caught	2
4	113	141	95	17	0	118.94	2	caught	1
4	55	42	27	8	3	203.7	1	bowled	3
4	38	99	77	6	0	49.35	2	bowled	1
4	10	4	6	2	0	166.66	1	lbw	3
4	33	87	67	3	0	49.25	1	bowled	2
4	17	46	25	0	1	68	1	lbw	4
4	19	45	26	2	0	73.07	2	caught	1
4	14	16	16	3	0	87.5	1	bowled	3
4	56	135	87	8	1	64.36	1	caught	1
4	6	17	5	1	0	120	2	caught	3
4	8	20	15	1	0	53.33	1	lbw	2

4	112	164	135	16	1	82.96	1	lbw	4
4	123	362	234	7	0	52.56	2	caught	2
4	8	20	13	1	0	61.53	2	caught	4
4	26	84	43	2	0	60.46	2	caught	2
4	87	209	119	10	0	73.1	2	not out	4
4	47	137	102	5	0	46.07	2	caught	1
4	14	89	60	1	0	23.33	2	caught	3
4	22	61	36	1	0	61.11	2	caught	2
4	103	216	151	13	1	68.21	2	caught	1
4	86	305	227	8	0	37.88	2	caught	3
4	56	122	104	6	0	53.84	2	caught	2
5	140	292	178	24	0	78.65	3	caught	2
5	59	127	74	5	0	79.72	3	lbw	4
5	166	384	250	24	0	66.4	3	caught	2
5	32	73	58	3	0	55.17	3	not out	4
5	22	85	58	2	0	37.93	3	lbw	1
5	9	34	24	1	0	37.5	3	caught	3
5	88	171	123	12	0	71.54	3	caught	1
5	71	145	115	7	0	61.73	3	bowled	3
5	1	7	4	0	0	25	3	caught	2
5	108	245	164	12	1	65.85	3	not out	4
5	16	24	18	4	0	88.88	3	caught	1
5	22	72	44	3	0	50	3	caught	3
5	7	98	69	0	0	10.14	3	caught	1
5	97	340	210	8	0	46.19	3	bowled	3
5	91	242	179	9	0	50.83	3	caught	2
5	113	202	151	10	0	74.83	3	caught	1
5	68	130	103	6	0	66.01	3	not out	3
5	2	29	16	0	0	12.5	3	not out	2
5	77	284	133	8	1	57.89	3	caught	2
5	5	27	11	0	0	45.45	3	caught	4
5	75	197	137	7	0	54.74	3	bowled	2
5	25	61	59	3	0	42.37	3	lbw	4
5	8	33	25	1	0	32	3	bowled	2
5	27	40	33	5	0	81.81	3	lbw	4
5	4	21	15	0	0	26.66	3	caught	2
5	61	85	77	4	1	79.22	3	caught	4
5	13	63	42	2	0	30.95	3	caught	1
5	42	138	88	7	0	47.72	3	caught	3
5	53	85	55	8	0	96.36	3	caught	2
5	104	144	90	15	0	115.55	3	not out	4
5	2	4	2	0	0	100	3	caught	2
5	130	380	241	18	0	53.94	3	caught	2
5	2	15	10	0	0	20	3	lbw	1
5	1	12	6	0	0	16.66	3	caught	3
5	176	453	285	16	3	61.75	3	caught	2
5	1	16	10	0	0	10	3	caught	2
5	43	126	96	5	0	44.79	3	caught	1

5	54	98	64	8	0	84.37	3	bowled	3
6	57	236	129	3	0	44.18	1	bowled	2
6	6	19	15	1	0	40	1	caught	1
6	78	221	179	7	0	43.57	1	caught	2
6	9	36	33	0	0	27.27	1	caught	4
6	104	174	147	12	0	70.74	1	lbw	1
6	40	47	47	7	0	85.1	1	caught	3
6	56	67	50	11	0	112	1	lbw	1
6	25	62	44	2	0	56.81	1	bowled	3
6	5	13	17	1	0	29.41	1	caught	1
6	8	23	19	1	0	42.1	1	caught	3
6	24	74	53	3	0	45.28	1	run out	2
6	3	20	11	0	0	27.27	1	caught	4
6	57	140	112	6	0	50.89	1	run out	2
6	19	94	55	1	0	34.54	1	caught	4
6	49	106	91	6	0	53.84	1	lbw	2
6	82	137	125	7	1	65.6	1	caught	4
6	71	192	144	5	3	49.3	1	caught	1
6	78	216	155	8	0	50.32	1	caught	3
6	9	39	34	0	0	26.47	1	lbw	1
6	12	51	38	2	0	31.57	1	stumped	3
6	39	87	67	6	1	58.2	5	caught	2
6	0	2	4	0	0	0	1	bowled	4
6	52		53	6	1	98.11	1	bowled	1
6	41		62	6	0	66.12	1	caught	3
6	4		3	1	0	133.33	1	caught	2
6	2		7	0	0	28.57	1	lbw	4

NOW VISUALISE THESE DATA SET IN JUPYTER NOTEBOOK

```python
[1]:
import numpy as np # linear algebra
import pandas as pd # data processing, CSV file I/O (e.g. pd.read_csv)
%matplotlib inline
import matplotlib.pyplot as plt
import seaborn as sns

import warnings
#warnings.simplefilter(action = "ignore", category = FutureWarning)
```

```python
[2]:
matches = pd.read_csv('../input/dataset1_test.csv')
```

```python
matches.head()
```

[3]:	Batsman	Runs	Mins	BF	4s	6s	SR	Pos	Dismissal	Inns
0	1	33	78.0	56	5	0	58.92	3	caught	2
1	1	33	77.0	49	6	0	67.34	3	caught	4
2	1	215	503.0	346	25	1	62.13	3	lbw	1
3	1	58	67.0	48	9	0	120.83	3	bowled	3
4	1	7	26.0	18	1	0	38.88	3	caught	1

```
Records=pd.DataFrame(matches)
Records.columns=['Batsman','Runs','Minute','Ballfaced','fours','sixes','StrikeRate','Position','DismissalAt','Innings']
#Records.head(10)
```

+ Code   + Markdown

```
]:
# split individual player records

batsman1 = Records[(Records.Batsman==1)]
batsman2 = Records[(Records.Batsman==2)]
batsman3 = Records[(Records.Batsman==3)]
batsman4 = Records[(Records.Batsman==4)]
batsman5 = Records[(Records.Batsman==5)]
batsman6 = Records[(Records.Batsman==6)]
```

```
]:
### average run of each player

avgOfPlayersGrpBy= Records[['Batsman','Runs']].groupby('Batsman').mean()
print(avgOfPlayersGrpBy)

avgOfPlayersGrpByPlot=avgOfPlayersGrpBy.sum(axis = 1).sort_values(ascending = False)
plt.ylabel('Average Runs',fontsize=15, fontweight='bold')
plt.rcParams["figure.figsize"] = [7,4]
avgOfPlayersGrpByPlot.plot(kind ='bar',color='green' ,title = " Average run of Batsman")
```

```
### average run of each player

avgOfPlayersGrpBy= Records[['Batsman','Runs']].groupby('Batsman').mean()
print(avgOfPlayersGrpBy)

avgOfPlayersGrpByPlot=avgOfPlayersGrpBy.sum(axis = 1).sort_values(ascending = False)
plt.ylabel('Average Runs',fontsize=15, fontweight='bold')
plt.rcParams["figure.figsize"] = [7,4]
avgOfPlayersGrpByPlot.plot(kind ='bar',color='green' ,title = " Average run of Batsman")
```

```
            Runs
Batsman
1       60.877193
2       57.557692
3       49.078125
4       49.406780
5       53.026316
6       35.769231
```

: <matplotlib.axes._subplots.AxesSubplot at 0x7fc87b9f9320>
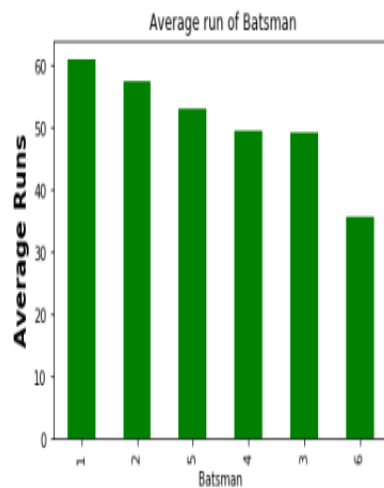
```
[7]:   #batsman run by four sixes comparison

       runBysixFour= Records[['Batsman','fours','sixes','Runs']].groupby('Batsman').sum() #run from boundary from each batsman
       runBysixFour['totalRunFromBoundary']=runBysixFour['fours']*4+runBysixFour['sixes']*6
       runBysixFour['runByFour']=runBysixFour['fours']*4
       runBysixFour['runBysix']=runBysixFour['sixes']*6
       runBysixFour['totalRunFromBoundary']
       print(runBysixFour)

       plt.rcParams["figure.figsize"] = [10,7]
       plt.show(runBysixFour.plot.bar())
```

```
         fours  sixes  Runs  totalRunFromBoundary  runByFour  runBysix
Batsman
1          382    10   3470                  1588       1528        60
2          315     9   2993                  1314       1260        54
3          388     7   3141                  1594       1552        42
4          348    21   2915                  1518       1392       126
5          237     6   2015                   984        948        36
6          102     6    930                   444        408        36
```
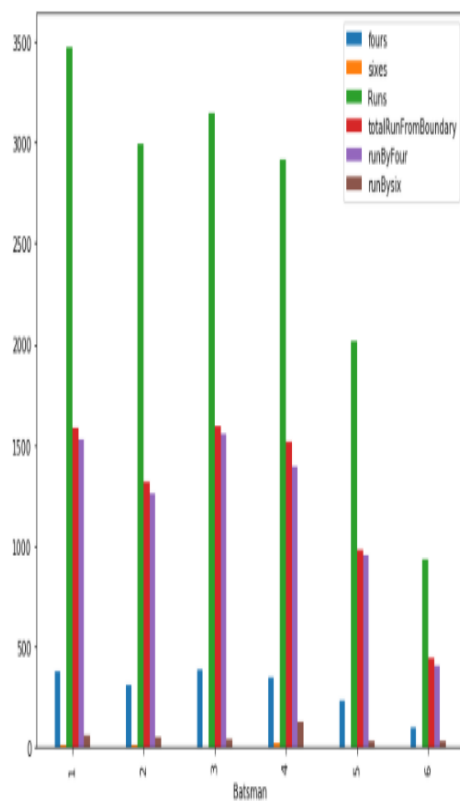
```
[9]:  batsman1_run=batsman1['Runs'] #batsman 1 runs
      print(('Average of Batsman 1: '),  batsman1_run.mean())
      print(('Maximum of Batsman 1 in a Match: '),  batsman1_run.max())

      batsman1_run.plot(color='red')

      p1=[batsman1_run.count(),0]    #x1,x2
      p2=[batsman1_run.mean(),batsman1_run.mean()]    #y1,y2
      plt.rcParams["figure.figsize"] = [10,7]
      plt.plot(p1,p2)
      plt.xlabel('No Of Matches',fontsize=15)
      plt.ylabel('Runs',fontsize=15)
      plt.rcParams["figure.figsize"] = [12,7]
      plt.show()
      plt.gcf().clear()
      plt.clf()
      plt.cla()
      plt.close()
```

Average of Batsman 1: 60.87719298245614
Maximum of Batsman 1 in a Match: 239
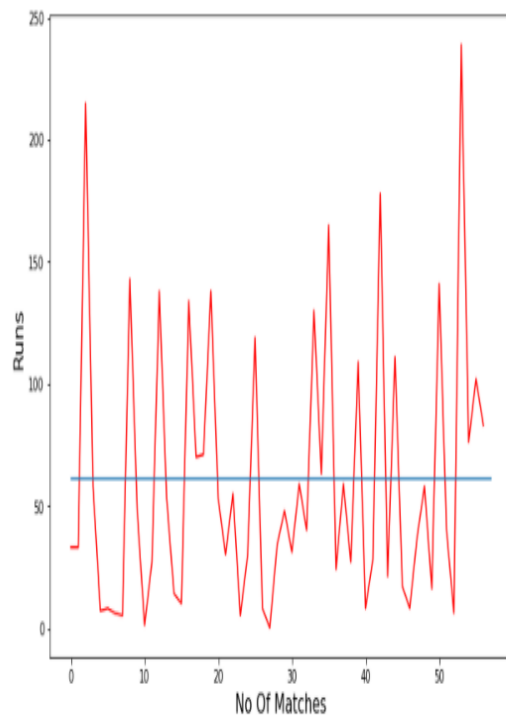
```
[10]:   #calculation of batsman1 average run of each consecutive match
        batsman1_avg = []
        i=0
        for row in batsman1_run:

            if i==0:
                batsman1_avg.append(row)

            else :
                value= (batsman1_avg[i-1]+i+row)/(i+1)
                batsman1_avg.append(value)

            i += 1

        batsman1['avgRunPerMatch'] = batsman1_avg
```

```
/opt/conda/lib/python3.6/site-packages/ipykernel_launcher.py:15: SettingWithCopyWarning:
A value is trying to be set on a copy of a slice from a DataFrame.
Try using .loc[row_indexer,col_indexer] = value instead

See the caveats in the documentation: http://pandas.pydata.org/pandas-docs/stable/indexing.html#indexing-view-versus-copy
  from ipykernel import kernelapp as app
```

```
[11]:    #batsman 1 runs
        batsman1_avg_run=batsman1['avgRunPerMatch']       #batsman 1 average runs concecutive matches
        print(('Average of Batsman 1: '),  batsman1_run.mean())
        print(('Maximum of Batsman 1 in a Match: '),  batsman1_run.max())

        batsman1_run.plot(color='red')
        batsman1_avg_run.plot(color='blue')
        p1=[batsman1_run.count(),0]    #x1,x2
        p2=[batsman1_run.mean(),batsman1_run.mean()]   #y1,y2
        plt.rcParams["figure.figsize"] = [10,7]
        plt.plot(p1,p2)
        plt.xlabel('No Of Matches',fontsize=15)
        plt.ylabel('Runs',fontsize=15)
        plt.rcParams["figure.figsize"] = [12,7]
        plt.show()
        plt.gcf().clear()
        plt.clf()
        plt.cla()
        plt.close()
```

```
Average of Batsman 1:  60.87719298245614
Maximum of Batsman 1 in a Match:  239
```
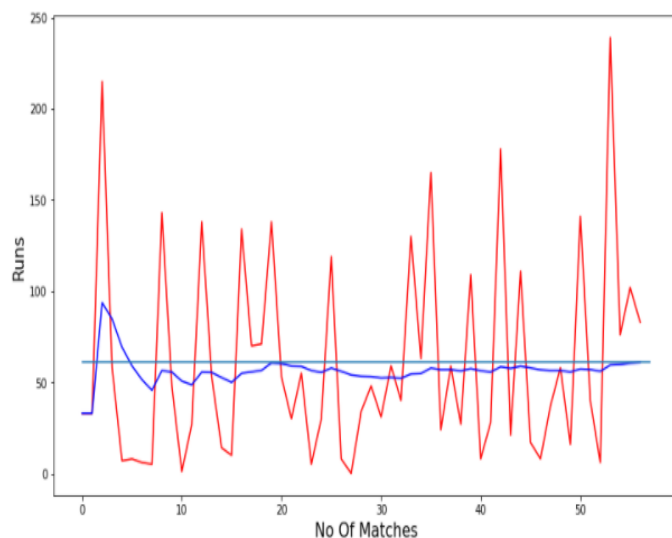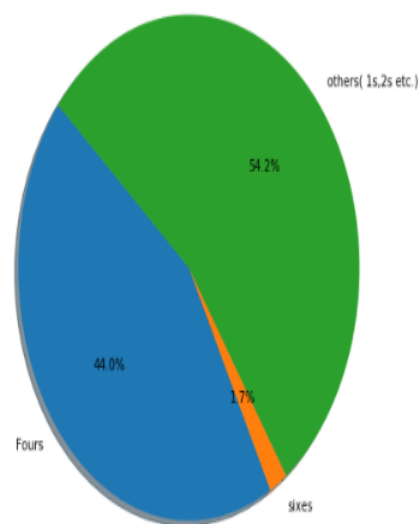
```
# Data to plot
labels = 'Fours', 'sixes', 'others( 1s,2s etc.)'
sizes = [batsman1['fours'].sum()*4,batsman1['sixes'].sum()*6,batsman1['Runs'].sum()-(batsman1['fours'].sum()*4+batsman1['sixes'].sum()*6)]

plt.pie(sizes,  labels=labels,
        autopct='%1.1f%%', shadow=True, startangle=140)

plt.axis('equal')
plt.show()
```

```
[13]:   #print(batsman1)
        batsman1_Dismissal_lbw =len( batsman1[(batsman1.DismissalAt=='lbw')])
        batsman1_Dismissal_bowled =len( batsman1[(batsman1.DismissalAt=='bowled')])
        batsman1_Dismissal_runout =len( batsman1[(batsman1.DismissalAt=='run out')])
        batsman1_Dismissal_caught =len( batsman1[(batsman1.DismissalAt=='caught')])
        batsman1_Dismissal_notout=len( batsman1[(batsman1.DismissalAt=='not out')])
        batsman1_Dismissal_stumped =len( batsman1[(batsman1.DismissalAt=='stumped')])

        labels = 'lbw', 'bowled', 'run out','caught','stumped','not out'
        sizes = [batsman1_Dismissal_lbw,batsman1_Dismissal_bowled,batsman1_Dismissal_runout,
                 batsman1_Dismissal_caught,batsman1_Dismissal_stumped,batsman1_Dismissal_notout]

        plt.pie(sizes,  labels=labels,
                autopct='%1.1f%%', shadow=True, startangle=140)

        plt.axis('equal')
        plt.show()
```
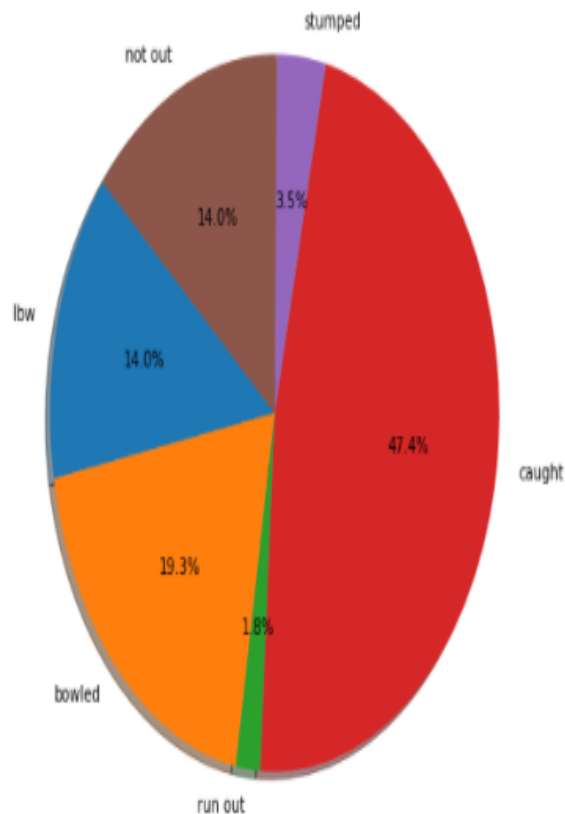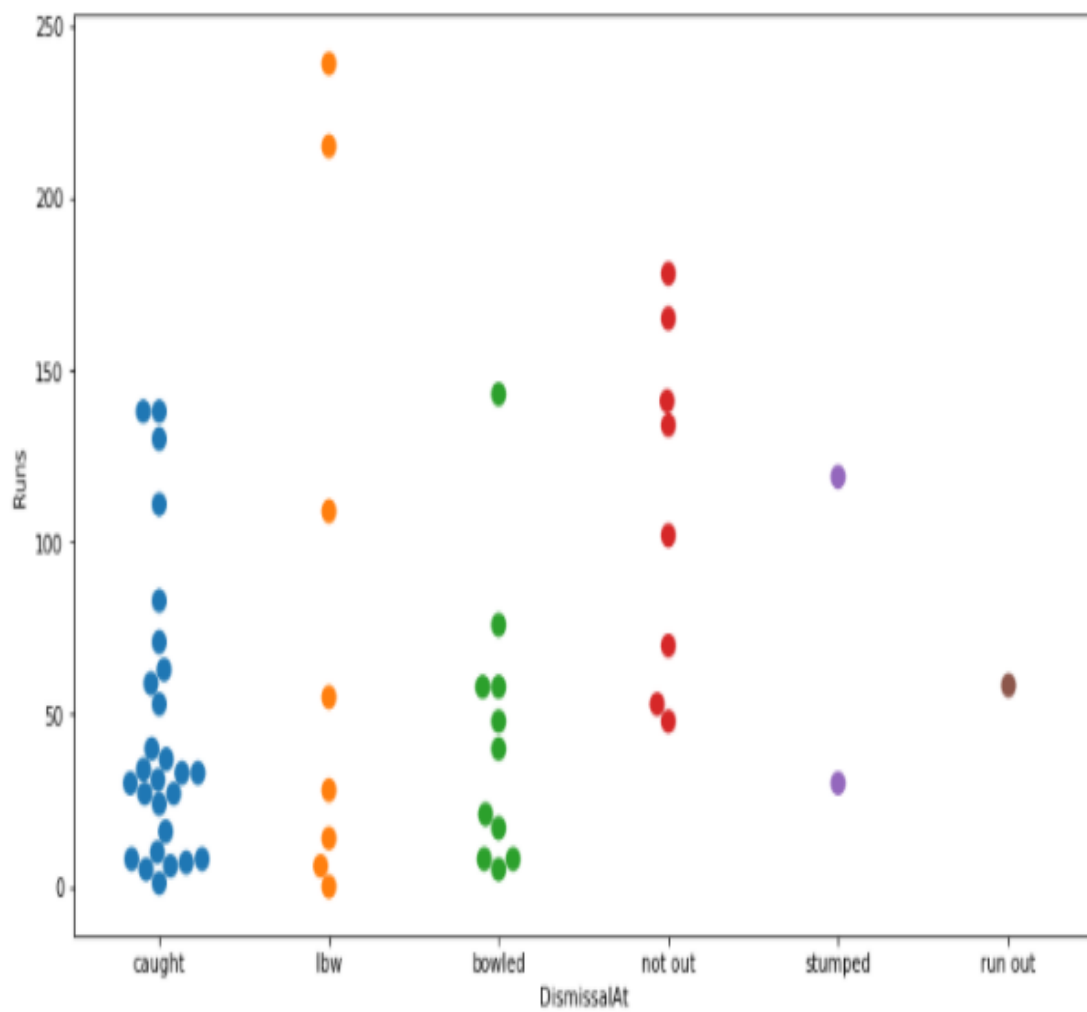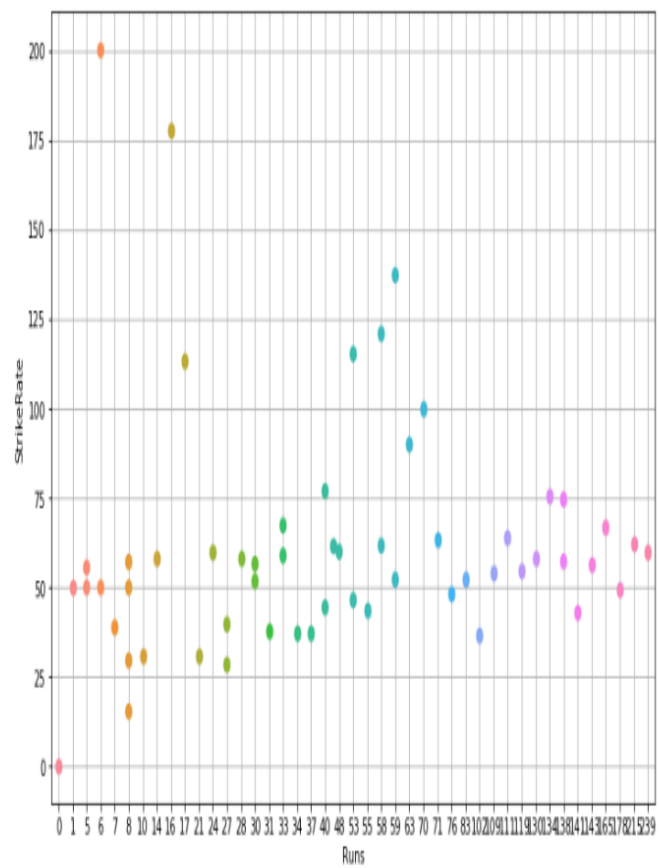
[15]:
```
ax=sns.swarmplot(y="Runs", x="DismissalAt",size=10, data=batsman1)
```

```python
ax=sns.swarmplot(y="StrikeRate", x="Runs",size=8,data=batsman1)

ax.grid(True)
#ax=sns.swarmplot(y="StrikeRate", x="Runs",size=8, data=batsman1[(batsman1.Position==3) | (batsman1.Position==4)])
```