

FML(R)

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Imported the data set from kaggle

```
make=read.csv("C:\\Users\\tiram\\Downloads\\archive\\Most Wickets in Test Cricket .csv")
make
```

##	Rank	Player	Country	Span	Matches	Innings	Balls	Runs
## 1	1	M Muralidaran	Sri Lanka	1992-2010	133	230	44039	18180
## 2	2	S Warne	Australia	1992-2007	145	273	40705	17995
## 3	3	JM Anderson	England	2003-2022	169	314	36396	17014
## 4	4	A Kumble	India	1990-2008	132	236	40850	18355
## 5	5	GD McGrath	Australia	1993-2007	124	243	29248	12186
## 6	6	SCJ Broad	England	2007-2022	152	280	30575	14932
## 7	7	CA Walsh	West Indies	1984-2001	132	242	30019	12688
## 8	8	R Ashwin	India	2011-2022	86	162	23089	10666
## 9	9	DW Steyn	South Africa	2004-2019	93	171	18608	10077
## 10	10	N Kapil Dev	India	1978-1994	131	227	27740	12867
## 11	11	HMRKB Herath	Sri Lanka	1999-2018	93	170	25993	12157
## 12	12	Sir RJ Hadlee	New Zealand	1973-1990	86	150	21918	9611
## 13	13	NM Lyon	Australia	2011-2022	108	204	27983	13732
## 14	14	SM Pollock	South Africa	1995-2008	108	202	24353	9733
## 15	15	Harbhajan Singh	India	1998-2015	103	190	28580	13537
## 16	16	Wasim Akram	Pakistan	1985-2002	104	181	22627	9779
## 17	17	CEL Ambrose	West Indies	1988-2000	98	179	22103	8501
## 18	18	M Ntini	South Africa	1998-2009	101	190	20834	11242
## 19	19	IT Botham	England	1977-1992	102	168	21815	10878
## 20	20	MD Marshall	West Indies	1978-1991	81	151	17584	7876
## 21	21	Waqar Younis	Pakistan	1989-2003	87	154	16224	8788
## 22	22	Imran Khan	Pakistan	1971-1992	88	142	19458	8258
## 23	23	DL Vettori	New Zealand	1997-2014	113	187	28814	12441
## 24	24	DK Lillee	Australia	1971-1984	70	132	18467	8493
## 25	25	WPUJC Vaas	Sri Lanka	1994-2009	111	194	23438	10501
## 26	26	TG Southee	New Zealand	2008-2022	85	160	19352	9530
## 27	27	AA Donald	South Africa	1992-2002	72	129	15519	7344
## 28	28	RGD Willis	England	1971-1984	90	165	17357	8190
## 29	29	MG Johnson	Australia	2007-2015	73	140	16001	8891
## 30	30	I Sharma	India	2007-2021	105	188	19160	10078
## 31	31	Z Khan	India	2000-2014	92	165	18785	10247
## 32	32	B Lee	Australia	1999-2008	76	150	16531	9554
## 33	33	M Morkel	South Africa	2006-2018	86	160	16498	8550

## 34	34	LR Gibbs	South Africa	1958-1976	79	148	27115	8989
## 35	35	FS Trueman	England	1952-1965	67	127	15178	6625
## 36	36	TA Boult	New Zealand	2011-2022	75	143	16689	8254
## 37	37	DL Underwood	England	1966-1982	86	151	21862	7674
## 38	38	JH Kallis	South Africa	1995-2013	166	272	20232	9535
## 39	39	CJ McDermott	Australia	1984-1996	71	124	16586	8332
## 40	40	MA Starc	Australia	2011-2022	69	133	14104	7786
## 41	41	BS Bedi	India	1966-1979	67	118	21364	7637
## 42	42	Danish Kaneria	Pakistan	2000-2010	61	112	17697	9082
## 43	43	J Garner	West Indies	1977-1987	58	111	13169	5433
## 44	44	JN Gillespie	Australia	1996-2006	71	137	14234	6770
## 45	45	GP Swann	England	2008-2013	60	109	15349	7642
## 46	46	JB Statham	England	1951-1965	70	129	16056	6261
## 47	47	MA Holding	West Indies	1975-1987	60	113	12680	5898
## 48	48	R Benaud	Australia	1952-1964	63	116	19108	6704
## 49	49	MJ Hoggard	England	2000-2008	67	122	13909	7564
## 50	50	GD McKenzie	Australia	1961-1971	60	113	17681	7328
## 51	51	N Wagner	New Zealand	2012-2022	58	110	12845	6464
## 52	52	K Rabada	South Africa	2015-2022	52	95	9908	5446
## 53	53	RA Jadeja	India	2012-2022	59	112	14627	5915
## 54	54	KAJ Roach	West Indies	2009-2022	71	128	12916	6578
## 55	55	BS Chandrasekhar	India	1964-1979	58	97	15963	7199
## 56	56	AV Bedser	England	1946-1955	51	92	15918	5876
## 57	57	J Srinath	India	1991-2002	67	121	15104	7196
## 58	58	Abdul Qadir	Pakistan	1977-1990	67	111	17126	7742
## 59	59	Yasir Shah	Pakistan	2014-2021	46	85	13697	7306
## 60	60	GS Sobers	West Indies	1954-1974	93	159	21599	7999
## 61	61	AR Caddick	England	1993-2003	62	105	13558	6999
## 62	62	CS Martin	New Zealand	2000-2013	71	126	14026	7878
## 63	63	D Gough	England	1994-2003	58	95	11821	6503
## 64	64	RR Lindwall	Australia	1946-1960	61	113	13650	5251
## 65	65	SJ Harmison	England	2002-2009	63	115	13375	7192
## 66	66	A Flintoff	England	1998-2009	79	137	14951	7410
## 67	67	VD Philander	South Africa	2011-2020	64	119	11391	5000
## 68	68	PM Siddle	Australia	2008-2019	67	126	13907	6777
## 69	69	CL Cairns	New Zealand	1989-2004	62	104	11698	6410
## 70	70	CV Grimmett	Australia	1925-1936	37	67	14513	5231
## 71	71	HH Streak	Zimbabwe	1993-2005	65	102	13559	6079
## 72	72	JR Hazlewood	Australia	2014-2022	57	107	12235	5573
## 73	73	Shakib Al Hasan	Bangladesh	2007-2022	59	99	13529	6731
## 74	74	Mohammed Shami	India	2013-2022	59	112	10605	5789
## 75	75	MG Hughes	Australia	1985-1994	53	97	12285	6017
## 76	76	SCG MacGill	Australia	1998-2008	44	85	11237	6038
## 77	77	Saqlain Mushtaq	Pakistan	1995-2004	49	86	14070	6206
## 78	78	AME Roberts	West Indies	1974-1983	47	90	11135	5174
## 79	79	JA Snow	England	1965-1976	49	93	12021	5387
## 80	80	JR Thomson	Australia	1972-1985	51	90	10535	5601
##		Wickets	Average	Econ	SR	X5	X10	
## 1	800	22.72	2.47	55.0	67	22		
## 2	708	25.41	2.65	57.4	37	10		
## 3	640	26.58	2.80	56.8	31	3		
## 4	619	29.65	2.69	65.9	35	8		
## 5	563	21.64	2.49	51.9	29	3		
## 6	537	27.80	2.93	56.9	19	3		

## 7	519	24.44	2.53	57.8	22	3
## 8	442	24.13	2.77	52.2	30	7
## 9	439	22.95	3.24	42.3	26	5
## 10	434	29.64	2.78	63.9	23	2
## 11	433	28.07	2.80	60.0	34	9
## 12	431	22.29	2.63	50.8	36	9
## 13	427	32.15	2.94	65.5	19	3
## 14	421	23.11	2.39	57.8	16	1
## 15	417	32.46	2.84	68.5	25	5
## 16	414	23.62	2.59	54.6	25	5
## 17	405	20.99	2.30	54.5	22	3
## 18	390	28.82	3.23	53.4	18	4
## 19	383	28.40	2.99	56.9	27	4
## 20	376	20.94	2.68	46.7	22	4
## 21	373	23.56	3.25	43.4	22	5
## 22	362	22.81	2.54	53.7	23	6
## 23	362	34.36	2.59	79.5	20	3
## 24	355	23.92	2.75	52.0	23	7
## 25	355	29.58	2.68	66.0	12	2
## 26	338	28.19	2.95	57.2	14	1
## 27	330	22.25	2.83	47.0	20	3
## 28	325	25.20	2.83	53.4	16	0
## 29	313	28.40	3.33	51.1	12	3
## 30	311	32.40	3.15	61.6	11	1
## 31	311	32.94	3.27	60.4	11	1
## 32	310	30.81	3.46	53.3	10	0
## 33	309	27.66	3.10	53.3	8	0
## 34	309	29.09	1.98	87.7	18	2
## 35	307	21.57	2.61	49.4	17	3
## 36	301	27.42	2.96	55.4	9	1
## 37	297	25.83	2.10	73.6	17	6
## 38	292	32.65	2.82	69.2	5	0
## 39	291	28.63	3.01	56.9	14	2
## 40	282	27.60	3.31	50.0	13	2
## 41	266	28.71	2.14	80.3	14	1
## 42	261	34.79	3.07	67.8	15	2
## 43	259	20.97	2.47	50.8	7	0
## 44	259	26.13	2.85	54.9	8	0
## 45	255	29.96	2.98	60.1	17	3
## 46	252	24.84	2.33	63.7	9	1
## 47	249	23.68	2.79	50.9	13	2
## 48	248	27.03	2.10	77.0	16	1
## 49	248	30.50	3.26	56.0	7	1
## 50	246	29.78	2.48	71.8	16	3
## 51	244	26.49	3.01	52.6	9	0
## 52	243	22.41	3.29	40.7	11	4
## 53	242	24.44	2.42	60.4	10	1
## 54	242	27.18	3.05	53.3	9	1
## 55	242	29.74	2.70	65.9	16	2
## 56	236	24.89	2.21	67.4	15	5
## 57	236	30.49	2.85	64.0	10	1
## 58	236	32.80	2.71	72.5	15	5
## 59	235	31.08	3.20	58.2	16	3
## 60	235	34.03	2.22	91.9	6	0

```
## 61      234      29.91 3.09 57.9 13      1
## 62      233      33.81 3.37 60.1 10      1
## 63      229      28.39 3.30 51.6   9      0
## 64      228      23.03 2.30 59.8 12      0
## 65      226      31.82 3.22 59.1   8      1
## 66      226      32.78 2.97 66.1   3      0
## 67      224      22.32 2.63 50.8 13      2
## 68      221      30.66 2.92 62.9   8      0
## 69      218      29.40 3.28 53.6 13      1
## 70      216      24.21 2.16 67.1 21      7
## 71      216      28.14 2.69 62.7   7      0
## 72      215      25.92 2.73 56.9   9      0
## 73      215      31.30 2.98 62.9 18      2
## 74      214      27.05 3.27 49.5   6      0
## 75      212      28.38 2.93 57.9   7      1
## 76      208      29.02 3.22 54.0 12      2
## 77      208      29.83 2.64 67.6 13      3
## 78      202      25.61 2.78 55.1 11      2
## 79      202      26.66 2.68 59.5   8      1
## 80      200      28.00 3.18 52.6   8      0
```

The below code shows descriptive statistics that includes qualitative and quantitative variables showing mean, median, mode and soon

```
summary(make)
```

```
##      Rank      Player      Country      Span
## Min.   : 1.00 Length:80      Length:80      Length:80
## 1st Qu.:20.75 Class :character Class :character Class :character
## Median :40.50 Mode  :character Mode  :character Mode  :character
## Mean   :40.50
## 3rd Qu.:60.25
## Max.   :80.00
##      Matches      Innings      Balls      Runs
## Min.   : 37.00 Min.   : 67.0 Min.   : 9908 Min.   : 5000
## 1st Qu.: 60.00 1st Qu.:111.0 1st Qu.:13685 1st Qu.: 6493
## Median : 71.00 Median :130.5 Median :16515 Median : 7764
## Mean   : 80.72 Mean   :146.1 Mean   :18719 Mean   : 8642
## 3rd Qu.: 93.00 3rd Qu.:168.5 3rd Qu.:21827 3rd Qu.: 9744
## Max.   :169.00 Max.   :314.0 Max.   :44039 Max.   :18355
##      Wickets      Average      Econ      SR
## Min.   :200.0 Min.   :20.94 Min.   :1.980 Min.   :40.70
## 1st Qu.:234.8 1st Qu.:24.38 1st Qu.:2.605 1st Qu.:53.30
## Median :274.0 Median :27.90 Median :2.810 Median :57.30
## Mean   :318.9 Mean   :27.46 Mean   :2.809 Mean   :59.13
## 3rd Qu.:373.8 3rd Qu.:29.85 3rd Qu.:3.075 3rd Qu.:63.92
## Max.   :800.0 Max.   :34.79 Max.   :3.460 Max.   :91.90
##      X5      X10
## Min.   : 3.00 Min.   : 0.000
```

```
## 1st Qu.: 9.75 1st Qu.: 1.000
## Median :14.00 Median : 2.000
## Mean :16.32 Mean : 2.763
## 3rd Qu.:20.25 3rd Qu.: 3.250
## Max. :67.00 Max. :22.000
```

```
# qualitative variables
summary(make$Player)
```

```
## Length Class Mode
##      80 character character
```

```
summary(make$Country)
```

```
## Length Class Mode
##      80 character character
```

```
# quantitative variables
summary(make$Rank)
```

```
## Min. 1st Qu. Median Mean 3rd Qu. Max.
## 1.00 20.75 40.50 40.50 60.25 80.00
```

```
summary(make$Span)
```

```
## Length Class Mode
##      80 character character
```

```
summary(make$Matches)
```

```
## Min. 1st Qu. Median Mean 3rd Qu. Max.
## 37.00 60.00 71.00 80.72 93.00 169.00
```

```
summary(make$Innings)
```

```
## Min. 1st Qu. Median Mean 3rd Qu. Max.
## 67.0 111.0 130.5 146.1 168.5 314.0
```

```
summary(make$Runs)
```

```
## Min. 1st Qu. Median Mean 3rd Qu. Max.
## 5000 6493 7764 8642 9744 18355
```

```
summary(make$Wickets)
```

```
## Min. 1st Qu. Median Mean 3rd Qu. Max.
## 200.0 234.8 274.0 318.9 373.8 800.0
```

```
summary(make$Average)
```

```
##      Min. 1st Qu.  Median      Mean 3rd Qu.      Max.
##  20.94   24.38   27.90   27.46   29.85   34.79
```

```
summary(make$Econ)
```

```
##      Min. 1st Qu.  Median      Mean 3rd Qu.      Max.
##   1.980   2.605   2.810   2.809   3.075   3.460
```

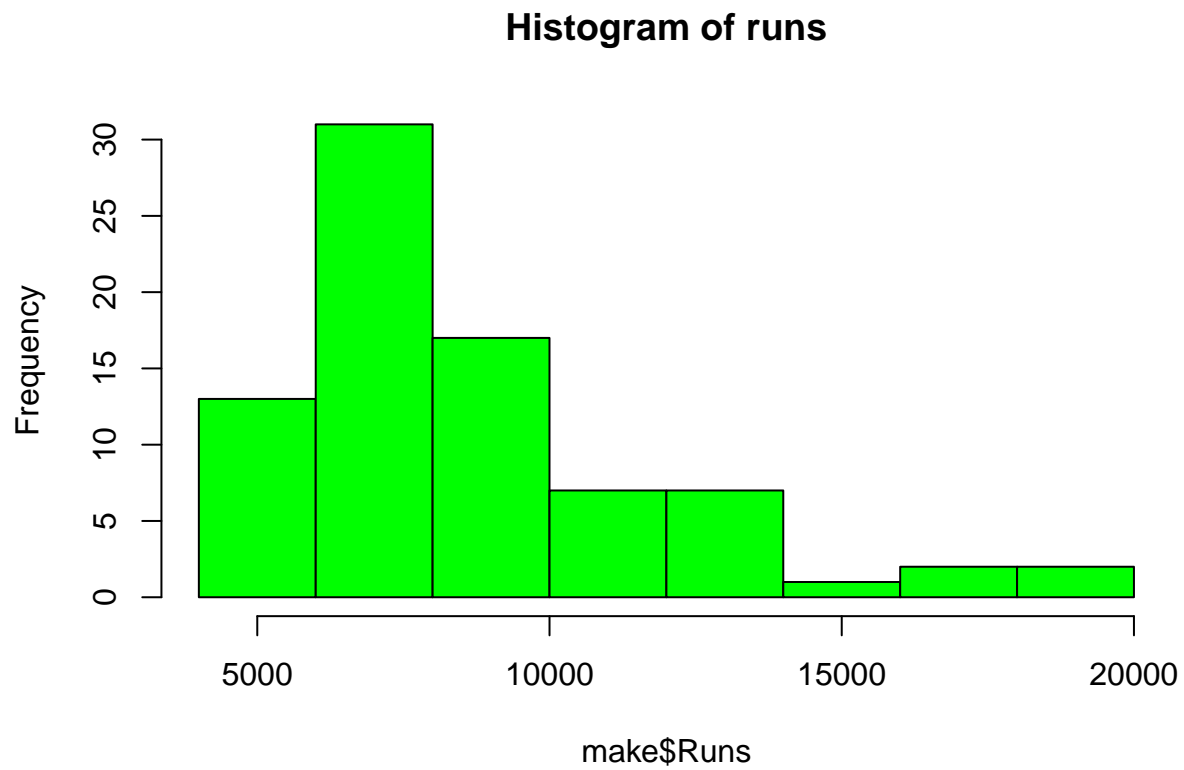
```
#Transforming a new variable
```

```
log_d= log(make$Wickets)
log_d
```

```
## [1] 6.684612 6.562444 6.461468 6.428105 6.333280 6.285998 6.251904 6.091310
## [9] 6.084499 6.073045 6.070738 6.066108 6.056784 6.042633 6.033086 6.025866
## [17] 6.003887 5.966147 5.948035 5.929589 5.921578 5.891644 5.891644 5.872118
## [25] 5.872118 5.823046 5.799093 5.783825 5.746203 5.739793 5.739793 5.736572
## [33] 5.733341 5.733341 5.726848 5.707110 5.693732 5.676754 5.673323 5.641907
## [41] 5.583496 5.564520 5.556828 5.556828 5.541264 5.529429 5.517453 5.513429
## [49] 5.513429 5.505332 5.497168 5.493061 5.488938 5.488938 5.488938 5.463832
## [57] 5.463832 5.463832 5.459586 5.459586 5.455321 5.451038 5.433722 5.429346
## [65] 5.420535 5.420535 5.411646 5.398163 5.384495 5.375278 5.375278 5.370638
## [73] 5.370638 5.365976 5.356586 5.337538 5.337538 5.308268 5.308268 5.298317
```

```
#I Plotted the graph with one quantitative variable in dataset of make and the variable is Runs.
```

```
hist(make$Runs,main="Histogram of runs",col="green",border="black")
```



Creating a scatter plot for the both quantitative and qualitative variable

```
x=make$Matches  
y=make$Runs  
plot(x,y)
```

