Name : **Amal Sunil Pillai**
Prn: **19030121009**

Principal Amt in INR :	10,000	25,000	40,000	55,000	70,000	85,000	100,000	115,000	130,000	145,000	160,000
Interest Rate :	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.25%	5.25%	5.25%	5.25%	5.25%
Number of years :	5	5	5	5	5	5	5	5	5	5	5
Maturity Amount :	12762.82	31907.04	51051.26	70195.49	89339.71	108483.93	129154.79	148528.01	167901.23	187274.45	206647.67
For other interest rates :											
6%	13382.26	33455.64	53529.02	73602.41	93675.79	113749.17	133822.56	153895.94	173969.33	194042.71	214116.09
7%	14025.52	35063.79	56102.07	77140.35	98178.62	119216.90	140255.17	161293.45	182331.72	203370.00	224408.28
8%	14693.28	36733.20	58773.12	80813.04	102852.97	124892.89	146932.81	168972.73	191012.65	213052.57	235092.49
9%	15386.24	38465.60	61544.96	84624.32	107703.68	130783.04	153862.40	176941.75	200021.11	223100.47	246179.83
10%	16105.10	40262.75	64420.40	88578.05	112735.70	136893.35	161051.00	185208.65	209366.30	233523.95	257681.60
Interest Per Year :											
5%	553	1381	2210	3039	3868	4697	5831	6706	7580	8455	9330
6%	676	1691	2706	3720	4735	5750	6765	7779	8794	9809	10823
7%	805	2013	3220	4428	5636	6843	8051	9259	10466	11674	12882
8%	939	2347	3755	5163	6571	7979	9387	10795	12203	13611	15018
9%	1077	2693	4309	5925	7541	9157	10772	12388	14004	15620	17236
10%	1221	3053	4884	6716	8547	10379	12210	14042	15873	17705	19536

Interest per year values that doesn't include tax
Interest per year values that includes tax

Formulae used :
Maturity Amount = Principal Amount * (1 + Interest Rate) ^ Number of years
Interest Per Year = (Maturity Amount – Principal Amount)/Number of years
Taxation : if the interest per year >= 15000, it's applicable to tax.

Part 2 of assignment

Sales Men	Month of August Data	
	Sales(Units)	Number Of Calls
SalesMan1	176	256
SalesMan2	289	442
SalesMan3	178	336
SalesMan4	275	311
SalesMan5	216	274
SalesMan6	160	235
SalesMan7	158	219
SalesMan8	51	100
SalesMan9	237	477
SalesMan10	241	250
SalesMan11	275	396
SalesMan12	92	200
SalesMan13	147	174
SalesMan14	265	304
SalesMan15	95	226
SalesMan16	135	428
SalesMan17	73	105
SalesMan18	213	296
SalesMan19	134	238
SalesMan20	112	281
SalesMan21	209	356
SalesMan22	**113**	150
SalesMan23	**138**	200
SalesMan24	**89**	100

Formulae used :

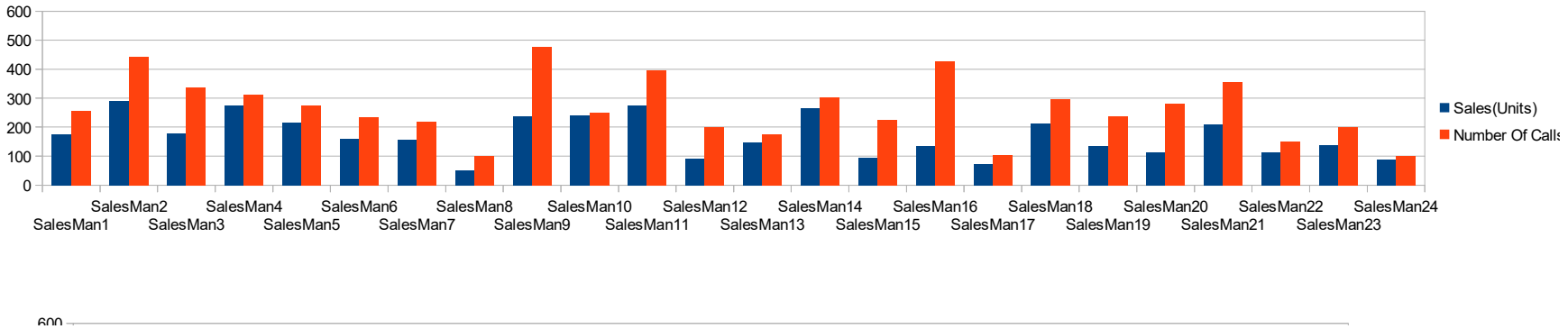
Linear regression : y= m*x + c , where 'y' is the dependent variable and 'x' independent variable.
'm' is the slope and 'c' is the y-intercept

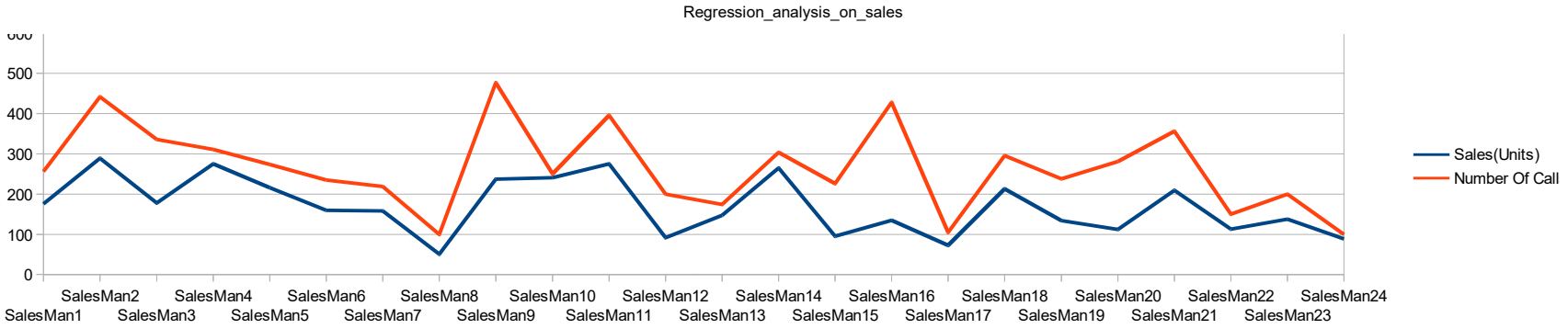
The values for 'm' and 'c' can be found by using optimization algos like Gradient descent to find the parameters for the best fit line for the data set, in other words to find the line that gives the least sum of square errors w.r.t . the dataset.

Sales = Slope * Number of calls + intercept

Predicted Values(Using y= m*x + c)

Relation between Sales(Dependent Variable) and Number of calls made	
Slope =	0.49
Y- intercept =	39.45
Correlation =	0.70




Regression_analysis_on_sales
500
400
300
200
100
0
SalesMan1
SalesMan2
SalesMan3
SalesMan4
SalesMan5
SalesMan6
SalesMan7
SalesMan8
SalesMan9
SalesMan10
SalesMan11
SalesMan12
SalesMan13
SalesMan14
SalesMan15
SalesMan16
SalesMan17
SalesMan18
SalesMan19
SalesMan20
SalesMan21
SalesMan22
SalesMan23
SalesMan24
Sales(Units)
Number Of Call

s

s