

MODUL 12

REGRESI LINIER SEDERHANA

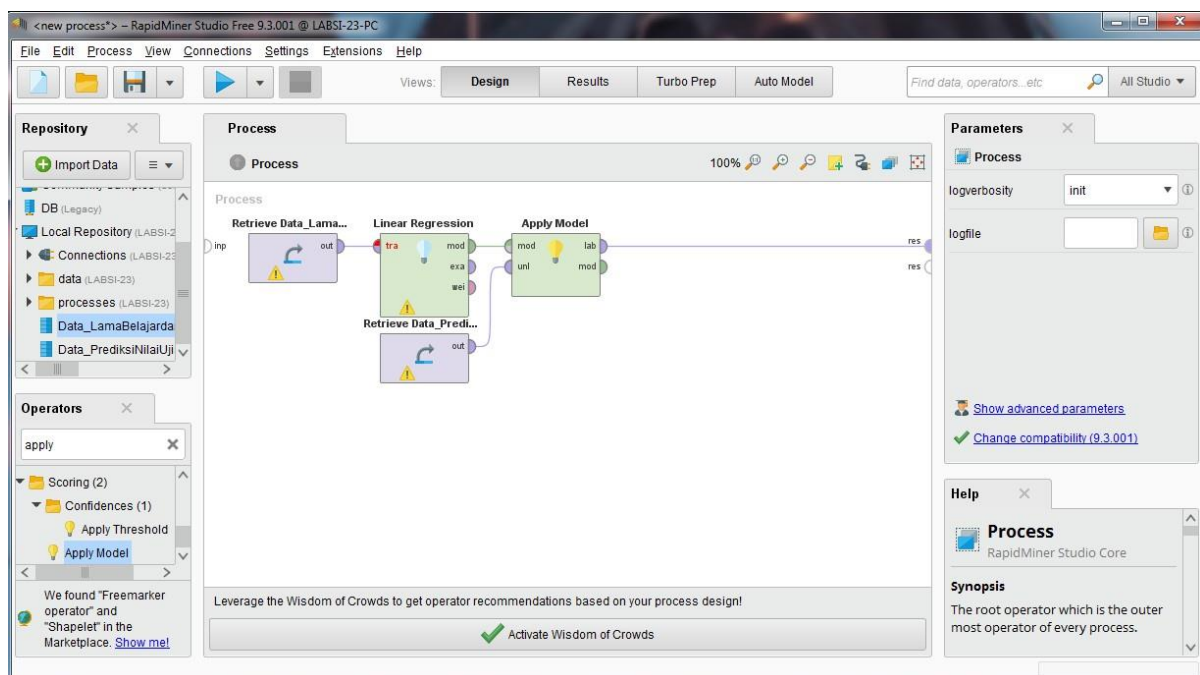
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 NIM : L200170035
 KELAS : B

Langkah-langkah Praktikum :

Mencari Nilai t-hitung dan Model Regresi Linier

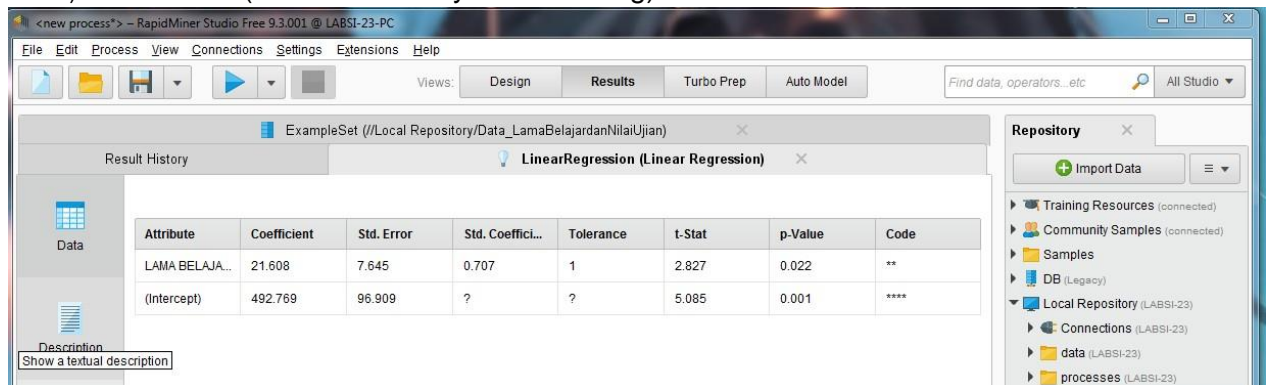
Table Data Siswa :

	A	B	C	D	E	F
1	NO_SISWA	NAMA	LAMA BELAJAR(JAM)	NILAI		
2	S_101	JOKO	15	783		
3	S_102	AGUS	18	877		
4	S_103	SUSI	7	505		
5	S_104	DYAH	9	860		
6	S_105	WATI	15	968		
7	S_106	IKA	17	793		
8	S_107	EKO	10	752		
9	S_108	YANTO	5	571		
10	S_109	WAWAN	8	667		
11	S_110	MAHMUD	15	723		



Berikut hasil proses regresi linier :

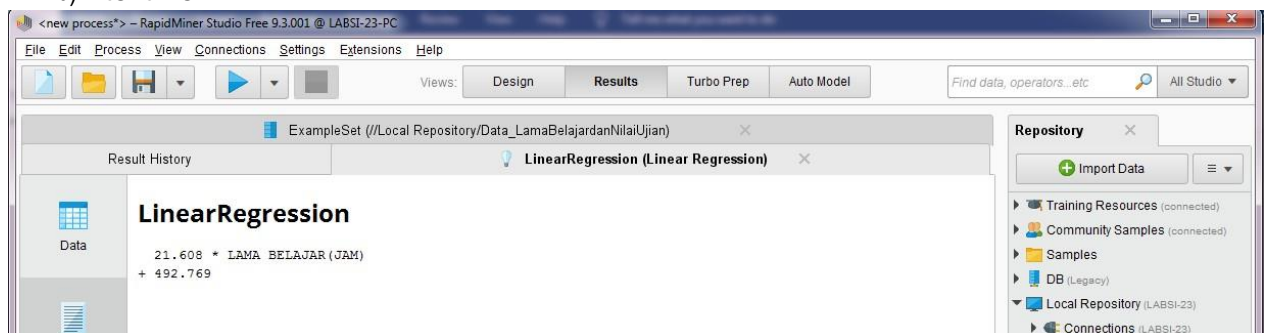
a) Tabel view(mencari besarnya nilai t-hitung)



The screenshot shows the 'Results' tab in RapidMiner Studio. The main window displays a table for 'LinearRegression (Linear Regression)'. The table has columns: Attribute, Coefficient, Std. Error, Std. Coeffi..., Tolerance, t-Stat, p-Value, and Code. The data rows are for 'LAMA BELAJA...' and '(Intercept)'. The right sidebar shows the 'Repository' with various data sources.

Attribute	Coefficient	Std. Error	Std. Coeffi...	Tolerance	t-Stat	p-Value	Code
LAMA BELAJA...	21.608	7.645	0.707	1	2.827	0.022	**
(Intercept)	492.769	96.909	?	?	5.085	0.001	****

b) text view



The screenshot shows the 'Results' tab in RapidMiner Studio. The main window displays the text output for 'LinearRegression'. The text shows the equation: $21.608 * LAMA BELAJAR (JAM) + 492.769$. The right sidebar shows the 'Repository' with various data sources.

LinearRegression

21.608 * LAMA BELAJAR (JAM)
+ 492.769

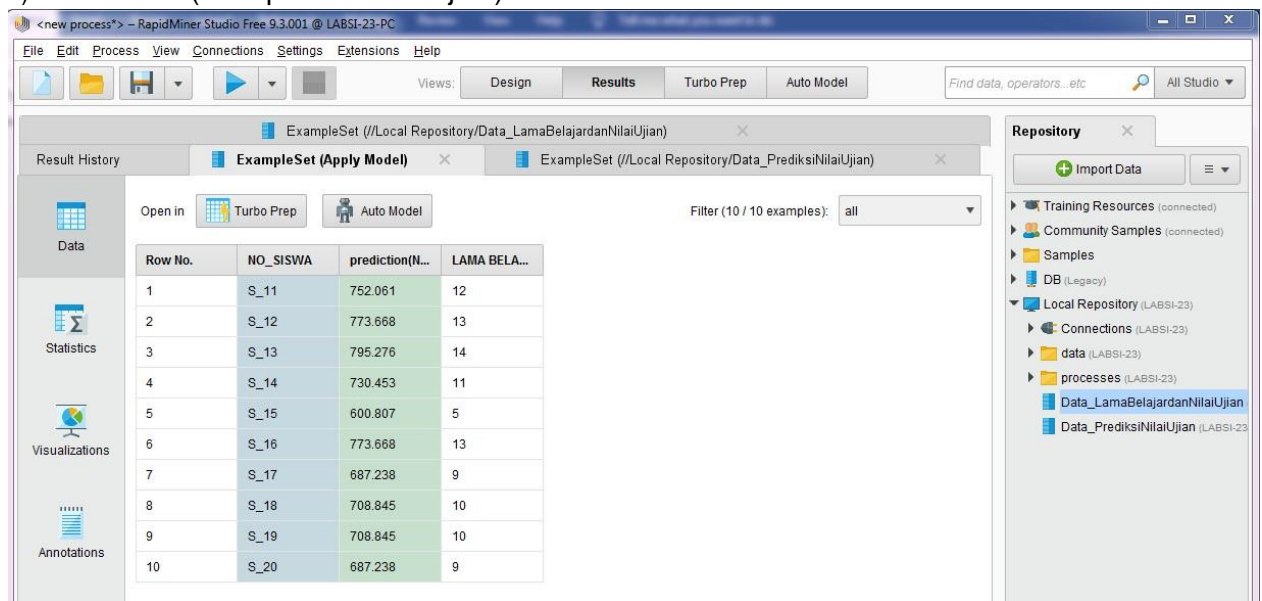
Mencari Nilai t dan Model Regresi Linier Menggunakan RapidMiner

Tabel Data Siswa :

	A	B	C	D	E	F
1	NO_SISWA	NAMA	LAMA BELAJAR(JAM)			
2	S_11	BUDI	12			
3	S_12	SANTI	13			
4	S_13	DIAN	14			
5	S_14	DANI	11			
6	S_15	AHMAD	5			
7	S_16	BAYU	13			
8	S_17	RISA	9			
9	S_18	RANI	10			
10	S_19	YANI	10			
11	S_20	RATIH	9			

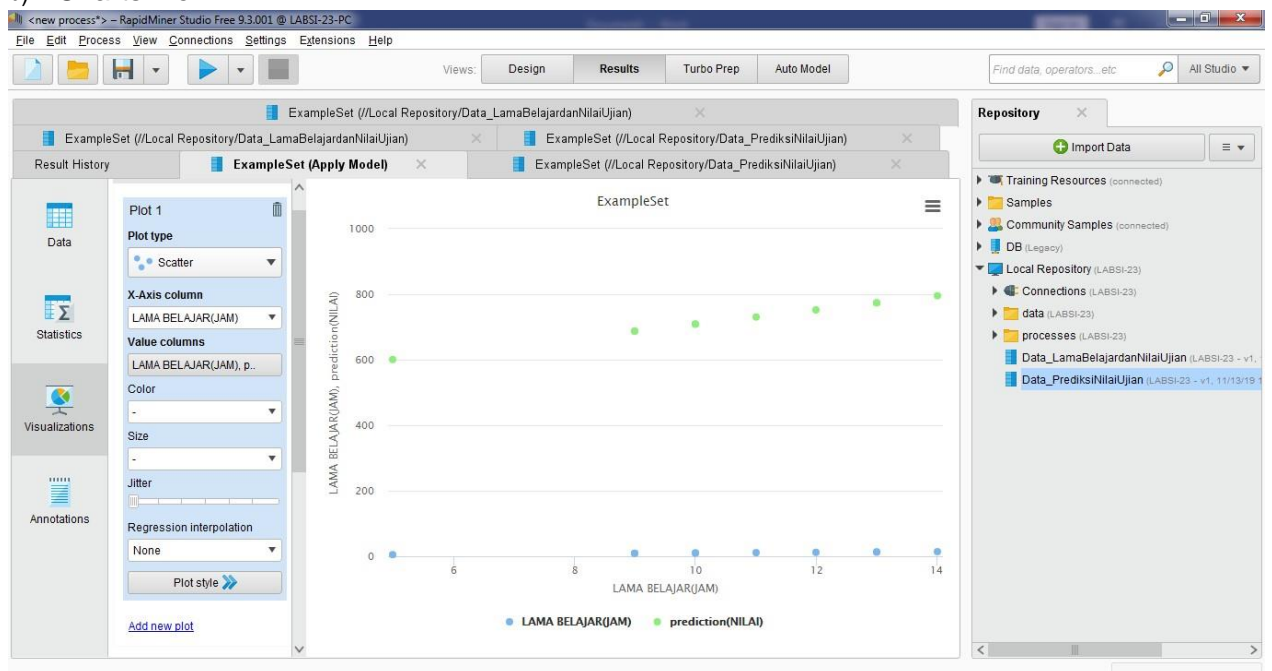
Berikut hasil proses prediksi terhadap data testing menggunakan regresi linier :

a) Data view (hasil prediksi nilai ujian)



Row No.	NO_SISWA	prediction(NILAI)	LAMA BELAJAR(JAM)
1	S_11	752.061	12
2	S_12	773.668	13
3	S_13	795.276	14
4	S_14	730.453	11
5	S_15	600.807	5
6	S_16	773.668	13
7	S_17	687.238	9
8	S_18	708.845	10
9	S_19	708.845	10
10	S_20	687.238	9

b) Charts View



PEMBUKTIAN MODEL REGRESI

	A	B	C	D	E	F	G	H	I
1	NO_SISWA	NAMA	LAMA BELAJAR(JAM)	Prediction(NILAI)	Prediction (NILAI)				
2				Tabel	Model Regresi				
3	S_11	BUDI	12	752,061	752.065				
4	S_12	SANTI	13	773,668	773.673				
5	S_13	DIAN	14	795,276	795.281				
6	S_14	DANI	11	730,453	730.457				
7	S_15	AHMAD	5	600,807	600.809				
8	S_16	BAYU	13	773,668	773.673				
9	S_17	RISA	9	687,238	687.241				
10	S_18	RANI	10	708,845	708.849				
11	S_19	YANI	10	708,845	708.849				
12	S_20	RATIH	9	687,238	687.241				

TUGAS

Tabel Hasil Survei 15 Kepala Keluarga

	A	B	C	D	E	F
1	NO.RESPONDEN	PENDAPATAN(RUPIAH)	JUMLAH ANGGOTA KELUARGA	DAYA BELI(RUPIAH)		
2	1	1,000,000	6	834,000		
3	2	1,400,000	7	1,200,000		
4	3	200,000	3	134,000		
5	4	1,400,000	6	1,167,000		
6	5	500,000	3	334,000		
7	6	1,700,000	5	1,360,000		
8	7	400,000	3	267,000		
9	8	1,900,000	5	1,520,000		
10	9	300,000	3	200,000		
11	10	500,000	4	375,000		
12	11	700,000	7	600,000		
13	12	1,900,000	3	1,267,000		
14	13	800,000	4	600,000		
15	14	1,500,000	4	1,125,000		
16	15	1,300,000	7	1,115,000		
17						

Attribute	Coefficient	Std. Error	Std. Coefficient	Tolerance	t-Stat	p-Value	Code
PENDAPATAN(...)	0.739	0.021	0.924	0.857	35.037	0.000	****
JUMLAH ANGGOTA...	47807.624	7833.319	0.161	0.857	6.103	0.000	****
(Intercept)	-180222.487	36497.284	?	?	-4.938	0.000	****

Data	Description
LinearRegression $0.739 * \text{PENDAPATAN (RUPIAH)}$ $+ 47807.624 * \text{JUMLAH ANGGOTA KELUARGA}$ $- 180222.487$	

3. Jika $t\text{-hitung} = 34,295$ sedangkan $t\text{-table} = 2,131$ maka $34,295 > 2,131$ dengan nilai toleransi 5% (0,05). Sehingga dapat dikatakan bahwa PENDAPATAN (X1) mempengaruhi secara signifikan terhadap Daya Beli (Y). Jika $t\text{-hitung} = 6,276$ sedangkan $t\text{-table} = 2,131$, maka $6,276 > 2,131$ dengan nilai toleransi 5% (0,05). Sehingga dapat dikatakan bahwa JUMLAH ANGGOTA (X2) mempengaruhi secara signifikan terhadap Daya Beli (Y).

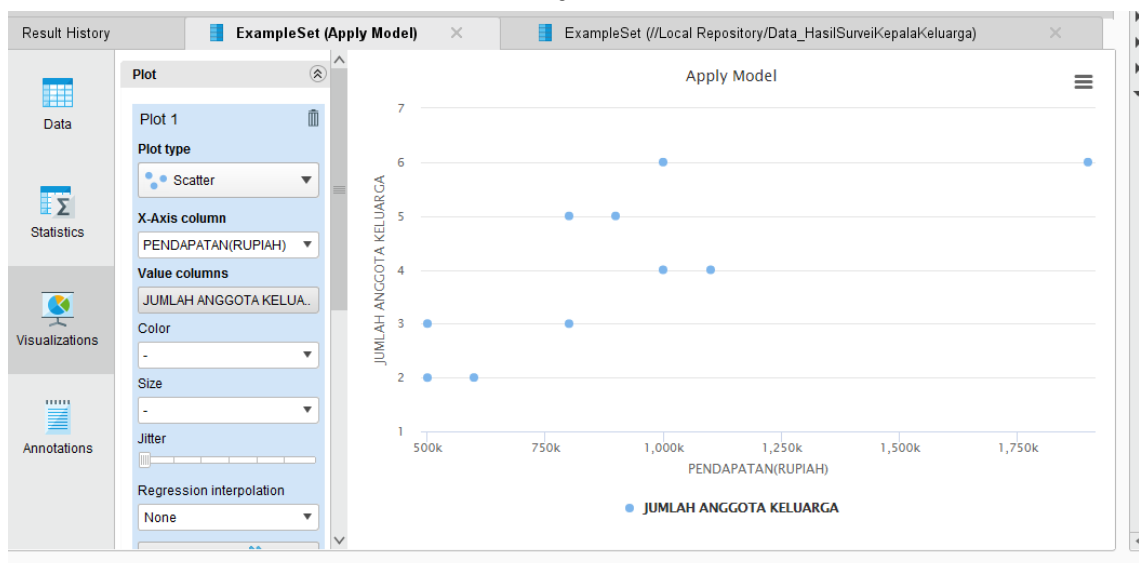
4.
$$Y = (0.739 * X1) + (50191.201 * X2) + (-188481.338)$$

Data Testing yang digunakan untuk Prediksi :

	A	B	C	D	E
1	NO.RESPONDEN	PENDAPATAN(RUPIAH)	JUMLAH ANGGOTA KELUARGA		
2	1	900,000	5		
3	2	800,000	3		
4	3	500,000	2		
5	4	1,900,000	6		
6	5	600,000	2		
7	6	800,000	5		
8	7	1,000,000	6		
9	8	1,100,000	4		
10	9	1,000,000	4		
11	10	500,000	3		

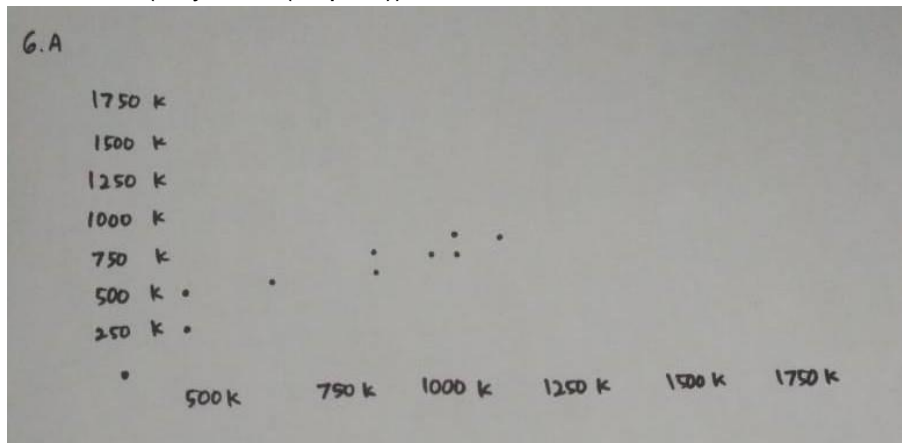
Data	Row No.	NO.RESPON...	JUMLAH AN...	prediction(D...	PENDAPATA...
Statistics	1	1	5	723933.263	900000
Visualizations	2	2	3	554416.056	800000
Annotations	3	3	2	284902.556	500000
	4	4	6	1510760.476	1900000
	5	5	2	358804.515	600000
	6	6	5	650031.304	800000
	7	7	6	845642.845	1000000
	8	8	4	823929.557	1100000
	9	9	4	750027.598	1000000
	10	10	3	332710.179	500000

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6. Gambar Pola Plot View (Scatter)

a. x-Axis = Pendapatan (Rupiah), y-Axis = Prediction (Daya Beli (Rupiah)), Color Column = Prediction (Daya Beli(Rupiah))



b. x-Axis = Jumlah Anggota Keluarga, y-Axis = Prediction (Daya Beli (Rupiah)), Color Column = Prediction (Daya Beli(Rupiah))

