

BAB III

ANALISIS DAN DESAIN SISTEM

III.1. Analisis Masalah

Dalam bidang penjualan sepeda motor, CV. Medan Baru harus dapat memperkirakan jumlah sepeda motor yang disediakan untuk dijual. Sepeda motor yang disediakan harus sesuai dengan kebutuhan pasar berdasarkan merk dan jenis sepeda motor yang banyak digemari masyarakat. Masalah yang terjadi adalah sepeda motor yang disediakan terdapat sepeda motor yang tidak laku terjual karena CV. Medan Baru hanya melihat sepeda motor yang banyak dipakai dijalanan oleh masyarakat sehingga CV. Medan Baru memperbanyak persediaan sesuai dengan yang dilihat dan tidak melihat data-data penjualan sepeda motor yang telah lalu. Hal ini menyebabkan sepeda motor yang tidak laku terjual menumpuk dipersediaan dan berdampak merugikan perusahaan karena CV. Medan Baru juga harus menggaji para pegawai. Oleh karena itu peneliti menggunakan peramalan dengan metode metode *Seasonal Autoregressive Integrated Moving Average* (SARIMA) untuk meramalkan penjualan sepeda motor. Dengan adanya sistem peramalan menggunakan metode *Seasonal Autoregressive Integrated Moving Average* (SARIMA) diharapkan CV. Medan Baru dapat meramalkan jumlah penjualan sepeda motor dengan tepat berdasarkan data-data penjualan yang telah lalu.

III.2. Penerapan Metode

Seasonal Autoregressive Integrated Moving Average (SARIMA) merupakan model ARIMA yang mengandung unsur musiman yang didefinisikan sebagai suatu pola yang berulang-

ulang dalam periode musim. Untuk mengatasi adanya pola musiman pada data deret waktu, digunakan metode SARIMA dengan notasi umum :

Seasonal :

Seasonal adalah kondisi dimana data memiliki kondisi naik dan turun, dengan kata lain tidak stabil.

Jadi persamaan untuk data *seasonal* yaitu :

$$\text{SARIMA}(p, d, q)(P, D, Q)^S \dots\dots\dots(1)$$

Dimana :

(p, d, q) = bagian yang tidak musiman dari model,

(P, D, Q) = bagian yang musiman dari model,

S = panjang periode musiman.

Autoregressive :

$$\text{AR} = \Phi_1 \cdot Y_{t-1} + \Phi_2 \cdot Y_{t-2} + \Phi_n \cdot Y_{t-n} + e_t \dots\dots\dots(2)$$

Dimana :

AR : *Autoregressive*

Φ_n : Koefisien parameter

Y_{t-n} : Nilai Data

e_t : Nilai Error

Untuk mencari koefisien paramter maka digunakan rumus :

$$\Phi_n = \frac{Y_{t-n}}{Y_{t-n-1}} \dots\dots\dots(3)$$

Untuk mencari nilai error maka digunakan rumus :

$$\text{Seasonal} : e_t = (1-B^2)^D \dots\dots\dots(4)$$

$$\text{Non Seasonal} : e_t = (1-B)^d \dots\dots\dots(5)$$

Dimana :

e_t : Nilai Error.

B : Nilai Minimum.

D : Nilai Jumlah Musiman.

d : Nilai Jumlah Non Musiman.

Moving Average :

$$MA = \frac{Y_t + Y_{t-1} + Y_{t-n}}{n} \dots \dots \dots (6)$$

Dimana :

MA : *Moving Average*

Y_t : Nilai Data

n : Jumlah Data

SARIMA :

$$Y_t = Y_t - \Phi_1 \cdot Y_{t-1} + \Phi_2 \cdot Y_{t-2} + \Phi_n \cdot Y_{t-n} + e_t - (1/n) \cdot Y_t + Y_{t-1} + Y_{t-n} \dots \dots \dots (7)$$

Dimana :

Y_t : Hasil Ramal SARIMA

Φ_n : Koefisien parameter

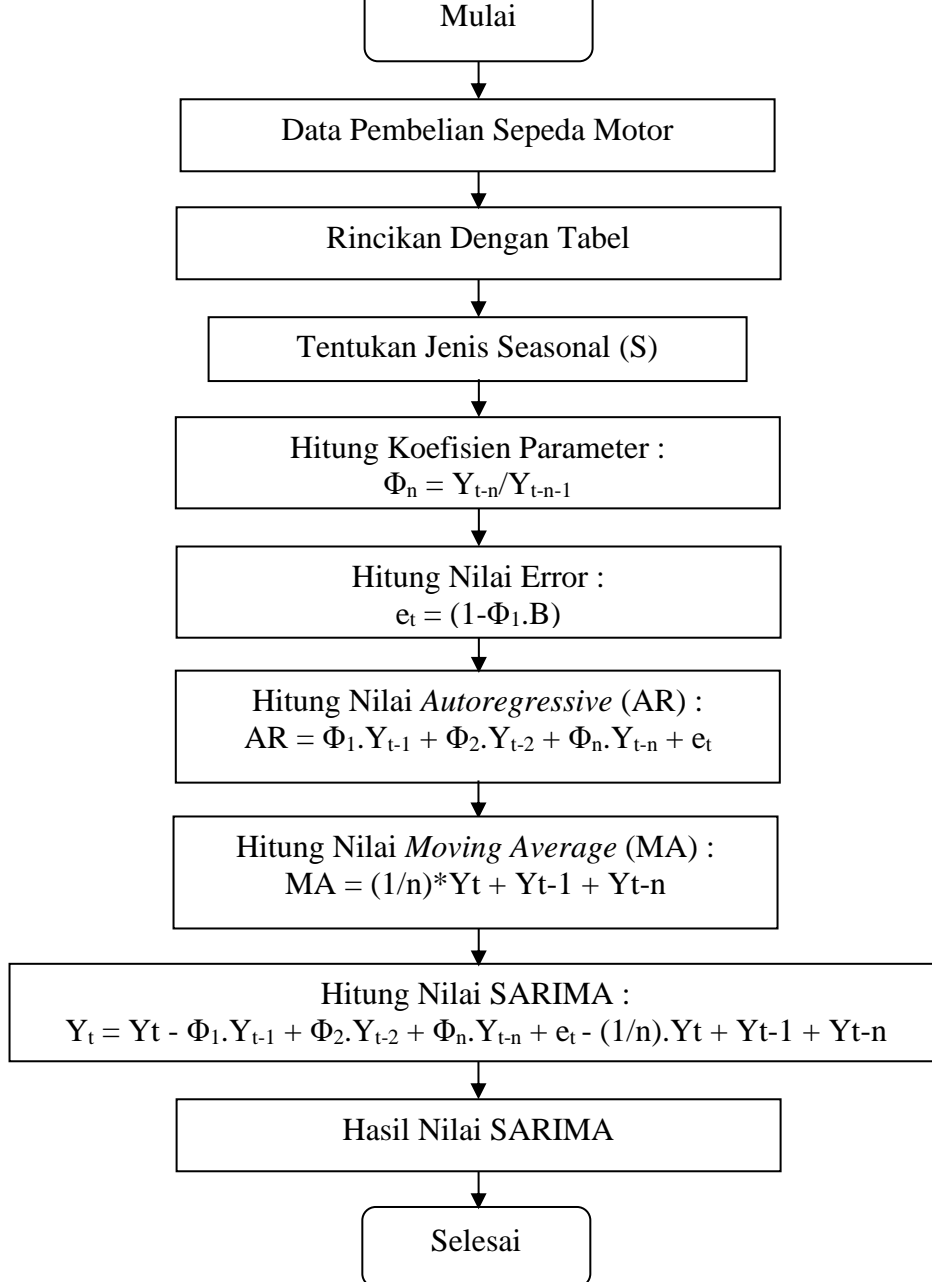
Y_{t-n} : Nilai Data

e_t : Nilai Error

Y_t : Nilai Data

n : Jumlah Data.

Flowchart metode SARIMA :



Gambar III.1. Flowchart Metode SARIMA

Contoh Kasus :

Terdapat data penjualan sepeda motor dari CV. Medan Baru dengan rincian sebagai berikut :



CV.MEDAN BARU
JL.KAPT. PATTIMURA SIMP. GAJAH MADA NO. 250/4
TELP. 061 - 4149588 / 4149688 MEDAN

DATA PENJUALAN CV. MEDAN BARU 2020

JANUARI							
No. Faktur	NIK/No. KTP	Nama Customer	Tgl/Bln/Thn	Merk/Type yang dibeli	Jenis	Jumlah	Harga
157331	1201063009990002	agung syahputra	01/02/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157332	1201042505880003	Zaenab	01/05/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157333	1207450412980005	Aisyah azzahra	01/08/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157334	1201046504930002	Nanda Syahputra	01/10/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157335	1206046501920003	Dahlia	01/11/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157336	1205092308900003	Helmi	13/1/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157337	1202082206920002	Adelia	15/1/2020	New Beat Street	Matic	1 unit	Rp.18.180.000
157338	1201145809910002	Doni mahendra	01/04/2020	Genio CBS	Matic	1 unit	Rp.18.540.000
157339	1203044709900009	Ayu	01/05/2020	Genio CBS ISS	Matic	1 unit	Rp.19.020.000
157340	1206024907900002	Suparmin	01/09/2020	Scoopy Stylish	Matic	1 unit	Rp.20.780.000
157341	1201025806900007	Dini	01/10/2020	New Scoopy Sporty	Matic	1 unit	Rp.20.970.000
157342	1208134107910008	Niko	14/1/2020	New Scoopy Sporty	Matic	1 unit	Rp.20.970.000
157343	1201294611920002	Indah khairunnisa	16/1/2020	Vario 125 esp CBS ISS	Matic	1 unit	Rp.21.390.000
157344	1203027004860001	Toni	17/1/2020	Vario 125 esp CBS ISS	Matic	1 unit	Rp.21.390.000
157345	5201371511910002	Ekawami	18/1/2020	Vario 150 esp CBS ISS	Matic	1 unit	Rp.24.890.000
157346	1204040605900001	Anton	20/1/2020	Vario 150 esp CBS ISS	Matic	1 unit	Rp.24.890.000
157347	1206056208850017	Iqbal syahputra	20/1/2020	CB Verza Spoke	Manual	1 unit	Rp.21.130.000
157348	1203141812850002	Riski Ramadhan	21/1/2020	CBR150Streetfire	Manual	1 unit	Rp.29.410.000
157349	1203054909920001	Andika	22/1/2020	CBR150Streetfire	Manual	1 unit	Rp.29.410.000
157350	1205026004890002	Reza	01/02/2020	CBR150Std	Manual	1 unit	Rp.38.240.000
157351	1206032611900001	Ryan	26/1/2020	CBR150Abs	Manual	1 unit	Rp.40.840.000
157352	1204105067900002	Iwan	26/1/2020	CRF150L	Manual	1 unit	Rp.35.430.000
157353	1207021210870001	Wati	29/1/2020	CRF150L	Manual	1 unit	Rp.35.430.000
157354	1205060807900011	Abdi	28/1/2020	Sonic HRR	Manual	1 unit	Rp.24.820.000
157355	1209204904920011	Qadir	30/1/2020	Sonic Std	Manual	1 unit	Rp.24.120.000
157356	1203145010920004	Fahruddin	24/1/2020	ADV 150 ABS	Matic	1 unit	Rp.41.540.000
157357	1203061711870003	Bambang	25/1/2020	ADV 150 ABS	Matic	1 unit	Rp.41.540.000
157358	1203196505900002	Intannia	01/03/2020	ADV 150 CBS	Matic	1 unit	Rp.30.850.000
FEBRUARI							
No. Faktur	NIK/No. KTP	Nama Customer	Tgl/Bln/Thn	Merk/Type yang dibeli	Jenis	Jumlah	Harga
157359	1204064502910007	Hendra	02/03/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157360	1209244212890003	Elina	02/05/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157361	1202026312880001	Sri Muliati	02/07/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157362	1205062709890010	Wirwin	02/09/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157363	1201095712900002	Ririn	02/11/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157364	1201145905870001	Carissa	14/2/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157365	1201096012910002	Dzakriyah	16/2/2020	New Beat Street	Matic	1 unit	Rp.18.180.000
157366	1202014303880041	Widya	02/04/2020	Genio CBS	Matic	1 unit	Rp.18.540.000
157367	1208046104920003	Galang	02/06/2020	Genio CBS ISS	Matic	1 unit	Rp.19.020.000
157368	1201082001880001	Nuzazizah	02/10/2020	Scoopy Stylish	Matic	1 unit	Rp.20.780.000
157369	1205016510880019	Indra	02/11/2020	New Scoopy Sporty	Matic	1 unit	Rp.20.970.000
157370	1203276304910001	Nadia hasnaini	14/2/2020	New Scoopy Sporty	Matic	1 unit	Rp.20.970.000
157371	1206084801890002	Krisman laoli	16/2/2020	Vario 125 esp CBS ISS	Matic	1 unit	Rp.21.390.000
157372	1205104506910002	Widya clarissa	18/2/2020	Vario 125 esp CBS ISS	Matic	1 unit	Rp.21.390.000
157373	1201222806860005	Putra	19/2/2020	Vario 150 esp CBS ISS	Matic	1 unit	Rp.24.890.000
157374	1202022107890005	Ramadhan	21/2/2020	Vario 150 esp CBS ISS	Matic	1 unit	Rp.24.890.000
157375	1200131010890001	Tama Nasution	20/2/2020	CB Verza Spoke	Manual	1 unit	Rp.21.130.000
157376	1201060811900002	Rahman daulay	21/2/2020	CBR150Streetfire	Manual	1 unit	Rp.29.410.000
157377	1208054504930002	Rudianto	22/2/2020	CBR150Streetfire	Manual	1 unit	Rp.29.410.000
157378	1203166306900003	Siti humairah	02/02/2020	CBR150Std	Manual	1 unit	Rp.38.240.000
157379	1204086207900001	Endang sari	26/2/2020	CBR150Abs	Manual	1 unit	Rp.40.840.000
157380	1208146410880001	Mutiara	26/2/2020	CRF150L	Manual	1 unit	Rp.35.430.000
157381	1201035803880001	Sundari	22/2/2020	CRF150L	Manual	1 unit	Rp.35.430.000
157382	1201075710910001	Yolanda	13/2/2020	Sonic HRR	Manual	1 unit	Rp.24.820.000
157383	1203066307900001	Satria khoiry	28/2/2020	Sonic Std	Manual	1 unit	Rp.24.120.000
157384	1205106301890002	Tasya putri	24/2/2020	ADV 150 ABS	Matic	1 unit	Rp.41.540.000
157385	1204124606910001	Ariani tanjung	26/2/2020	ADV 150 ABS	Matic	1 unit	Rp.41.540.000
157386	1203104607880004	Amelia dwi	02/03/2020	ADV 150 CBS	Matic	1 unit	Rp.30.850.000
157387	1205047004910018	Fadlan	02/12/2020	ADV 150 CBS	Matic	1 unit	Rp.30.850.000

MARET							
No. Faktur	NIK/No. KTP	Nama Customer	Tgl/Bln/Thn	Merk/Type yang dibeli	Jenis	Jumlah	Harga
157388	1202062204900001	Ulfa	03/01/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157389	1204286808900011	Azri	03/04/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157390	1204074302870002	Hafidz	03/06/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157391	1204037112900003	Yudha	03/09/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157392	1205011706870002	Ikhlan panggabean	03/11/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157393	1206025902910002	Bob	23/3/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157394	1201102910890006	Heri	26/3/2020	New Beat Street	Matic	1 unit	Rp.18.180.000
157395	1208021212890005	Sumaji	28/3/2020	New Beat Street	Matic	1 unit	Rp.18.180.000
157396	1202040310870004	Erwin simatupang	03/05/2020	Genio CBS	Matic	1 unit	Rp.18.540.000
157397	1208083105870001	Yusri	03/08/2020	Genio CBS ISS	Matic	1 unit	Rp.19.020.000
157398	1209072607910001	Nurdaila	03/10/2020	Scoopy Stylish	Matic	1 unit	Rp.20.780.000
157399	1205022106870008	Barokah	14/3/2020	Scoopy Stylish	Matic	1 unit	Rp.20.780.000
157400	1204104421920001	Ainun	03/11/2020	New Scoopy Sporty	Matic	1 unit	Rp.20.970.000
157401	1205135506890003	Diza	14/3/2020	New Scoopy Sporty	Matic	1 unit	Rp.20.970.000
157402	1204075708910004	Laila	13/3/2020	Vario 125 esp CBS ISS	Matic	1 unit	Rp.21.390.000
157403	1201292604920001	Mayang	18/3/2020	Vario 125 esp CBS ISS	Matic	1 unit	Rp.21.390.000
157404	1206064205850002	Iryna wanda	19/3/2020	Vario 150 esp CBS ISS	Matic	1 unit	Rp.24.890.000
157405	1203225612910002	Zulfan	21/3/2020	Vario 150 esp CBS ISS	Matic	1 unit	Rp.24.890.000
157406	1201016805910004	Pongky sidabutar	20/3/2020	CB Verza Spoke	Manual	1 unit	Rp.21.130.000
157407	1206025305910002	Ardian	23/3/2020	CBR150Streetfire	Manual	1 unit	Rp.29.410.000
157408	1202014511880001	Wulandari	24/3/2020	CBR150Streetfire	Manual	1 unit	Rp.29.410.000
157409	1208233101900001	Yohana	03/02/2020	CBR150Std	Manual	1 unit	Rp.38.240.000
157410	1204056608890002	Putra	25/3/2020	CBR150Abs	Manual	1 unit	Rp.40.840.000
157411	1202066712920001	Yolanda	23/3/2020	CRF150L	Manual	1 unit	Rp.35.430.000
157412	1207116903880001	Dinda	22/3/2020	CRF150L	Manual	1 unit	Rp.35.430.000
157413	1203221703870006	Alvian syahputra	03/12/2020	Sonic HRR	Manual	1 unit	Rp.24.820.000
157414	1203024907900001	Pratama	29/3/2020	Sonic Std	Manual	1 unit	Rp.24.120.000
157415	1201081809860009	Saparuddin	13/3/2020	ADV 150 ABS	Matic	1 unit	Rp.41.540.000
157416	1205095001900001	Iwan	20/3/2020	ADV 150 ABS	Matic	1 unit	Rp.41.540.000
157417	1202164812900004	Zahra	03/04/2020	ADV 150 CBS	Matic	1 unit	Rp.30.850.000
157418	1202042909900001	Dian	14/3/2020	ADV 150 CBS	Matic	1 unit	Rp.30.850.000
APRIL							
No. Faktur	NIK/No. KTP	Nama Customer	Tgl/Bln/Thn	Merk/Type yang dibeli	Jenis	Jumlah	Harga
157419	1204127006910002	Indah	04/01/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157420	1202030204900004	Wati	04/03/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157421	1204101105880004	Dani	04/05/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157422	1204066207900009	Yudha	04/07/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157423	1208136505920004	Asni panggabean	04/10/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157424	1207066630790004	Emi simatupang	04/11/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157425	1202064901870004	Razman	04/11/2020	New Beat Street	Matic	1 unit	Rp.18.180.000
157426	1201131605910004	Syifa	15/4/2020	New Beat Street	Matic	1 unit	Rp.18.180.000
157427	1208091409890007	Annisa	04/04/2020	Genio CBS	Matic	1 unit	Rp.18.540.000
157428	1206090412890002	Loli	04/06/2020	Genio CBS ISS	Matic	1 unit	Rp.19.020.000
157429	1204055206900008	Diana Ristina	04/09/2020	Scoopy Stylish	Matic	1 unit	Rp.20.780.000
157430	1201020901860002	Felix hasibuan	13/4/2020	Scoopy Stylish	Matic	1 unit	Rp.20.780.000
157431	1202066601920001	Tio	04/12/2020	New Scoopy Sporty	Matic	1 unit	Rp.20.970.000
157432	1201015010910001	Rina	16/4/2020	New Scoopy Sporty	Matic	1 unit	Rp.20.970.000
157433	1209204704910014	Lia annisa	14/4/2020	Vario 125 esp CBS ISS	Matic	1 unit	Rp.21.390.000
157434	1202054610870001	Yopi Marbun	19/4/2020	Vario 125 esp CBS ISS	Matic	1 unit	Rp.21.390.000
157435	1204104312910001	Wanda	20/4/2020	Vario 150 esp CBS ISS	Matic	1 unit	Rp.24.890.000
157436	1201124609890001	Fandi	21/4/2020	Vario 150 esp CBS ISS	Matic	1 unit	Rp.24.890.000
157437	1202204607920004	Ewin	15/4/2020	CB Verza Spoke	Manual	1 unit	Rp.21.130.000
157438	1201152701890002	Andini	21/4/2020	CBR150Streetfire	Manual	1 unit	Rp.29.410.000
157439	1204016903870001	Dewi putri	24/4/2020	CBR150Streetfire	Manual	1 unit	Rp.29.410.000
157440	1207014708800111	Mutia	17/4/2020	CBR150Std	Manual	1 unit	Rp.38.240.000
157441	1204346803900001	Angel	25/4/2020	CBR150Abs	Manual	1 unit	Rp.40.840.000
157442	1204096012880004	Yusuf	26/4/2020	CRF150L	Manual	1 unit	Rp.35.430.000
157443	1201015701900002	Fahmi	24/4/2020	CRF150L	Manual	1 unit	Rp.35.430.000
157444	1201011002880003	Anggraini	25/4/2020	Sonic HRR	Manual	1 unit	Rp.24.820.000
157445	1203064408920002	Fauzan	27/4/2020	Sonic Std	Manual	1 unit	Rp.24.120.000
157446	1202066808910002	Saparuddin	28/4/2020	ADV 150 ABS	Matic	1 unit	Rp.41.540.000
157447	1203086702900002	Iwan	30/4/2020	ADV 150 ABS	Matic	1 unit	Rp.41.540.000
157448	1204076212890001	Zahra	24/4/2020	ADV 150 CBS	Matic	1 unit	Rp.30.850.000
157449	1206254509920001	Dian	29/4/2020	ADV 150 CBS	Matic	1 unit	Rp.30.850.000

MEI							
No. Faktur	NIK/No. KTP	Nama Customer	Tgl/Bln/Thn	Merk/Type yang dibeli	Jenis	Jumlah	Harga
157450	1201045110900002	Andika Syahputra	05/02/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157451	1207095611900002	Wenny	05/03/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157452	1202082008910001	Wasis Ajeng	05/05/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157453	1208174910900002	Siti Aminah	05/08/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157454	1204025204880325	Sari mutia	05/10/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157455	1203235907850001	Inesh	05/12/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157456	1201112512900002	Pratiwi	13/5/2020	New Beat Street	Matic	1 unit	Rp.18.180.000
157457	1204095612890001	Ahmad nasution	15/5/2020	New Beat Street	Matic	1 unit	Rp.18.180.000
157458	1207224706890005	Muhammad ade	05/04/2020	Genio CBS	Matic	1 unit	Rp.18.540.000
157459	1201085709920001	Ardini	05/06/2020	Genio CBS ISS	Matic	1 unit	Rp.19.020.000
157460	1208047112910027	Andi	05/08/2020	Genio CBS ISS	Matic	1 unit	Rp.19.020.000
157461	1203076104910001	Manto	05/09/2020	Scoopy Stylish	Matic	1 unit	Rp.20.780.000
157462	1203116401900001	Bagas prasetya	13/5/2020	Scoopy Stylish	Matic	1 unit	Rp.20.780.000
157463	1202255903920002	Aziel	05/12/2020	New Scoopy Sporty	Matic	1 unit	Rp.20.970.000
157464	1205125910900001	Rima	15/5/2020	New Scoopy Sporty	Matic	1 unit	Rp.20.970.000
157465	1201080206880002	Abraham	14/5/2020	Vario 125 esp CBS ISS	Matic	1 unit	Rp.21.390.000
157466	1207190103870003	Ismail	19/5/2020	Vario 125 esp CBS ISS	Matic	1 unit	Rp.21.390.000
157467	1207039711189003	Husnaeni	20/5/2020	Vario 150 esp CBS ISS	Matic	1 unit	Rp.24.890.000
157468	1202261905890002	Fadli	21/5/2020	Vario 150 esp CBS ISS	Matic	1 unit	Rp.24.890.000
157469	1206080101850007	Cakra	16/5/2020	CB Verza Spoke	Manual	1 unit	Rp.21.130.000
157470	1208146602930001	Yunus	17/5/2020	CB Verza Spoke	Manual	1 unit	Rp.21.130.000
157471	1204075101880001	Carlos	05/01/2020	CBR150Streetfire	Manual	1 unit	Rp.29.410.000
157472	1200115001900001	Daniel	05/03/2020	CBR150Streetfire	Manual	1 unit	Rp.29.410.000
157473	1205015510890001	Natasya	17/5/2020	CBR150Std	Manual	1 unit	Rp.38.240.000
157474	1201054306870006	Aisyah niranti	19/5/2020	CBR150Std	Manual	1 unit	Rp.38.240.000
157475	1204024401860004	Ghbran	25/5/2020	CBR150Abs	Manual	1 unit	Rp.40.840.000
157476	1205045906910005	Aprilian	26/5/2020	CBR150Abs	Manual	1 unit	Rp.40.840.000
157477	1202195407900001	Harris	26/5/2020	CRF150L	Manual	1 unit	Rp.35.430.000
157478	1201025008990004	Harry	23/5/2020	CRF150L	Manual	1 unit	Rp.35.430.000
157479	1209211410880002	Malik	24/5/2020	Sonic HRR	Manual	1 unit	Rp.24.820.000
157480	1205094705910009	Ani nuraini	25/5/2020	Sonic HRR	Manual	1 unit	Rp.24.820.000
157481	1205034102900027	Raden prasetyo	14/5/2020	Sonic Std	Manual	1 unit	Rp.24.120.000
157482	1201121502890001	Anto	16/5/2020	Sonic Std	Manual	1 unit	Rp.24.120.000
157483	1204136609860001	Aldo	28/5/2020	ADV 150 ABS	Matic	1 unit	Rp.41.540.000
157484	1204116105910002	Zafnan	30/5/2020	ADV 150 ABS	Matic	1 unit	Rp.41.540.000
157485	1204081404850002	Boby	24/5/2020	ADV 150 CBS	Matic	1 unit	Rp.30.850.000
157486	1201115604900002	Putri angelina	29/5/2020	ADV 150 CBS	Matic	1 unit	Rp.30.850.000
JUNI							
No. Faktur	NIK/No. KTP	Nama Customer	Tgl/Bln/Thn	Merk/Type yang dibeli	Jenis	Jumlah	Harga
157487	1206018703870001	Fitri	06/01/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157488	1207080211900005	Fadilla	06/04/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157489	1205036312860023	Sebastian	06/05/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157490	12021156050910007	Fifah	06/08/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157491	1205025108910008	Mutia	06/10/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157492	1201110710880003	Shennyra arras	06/12/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157493	1200084205900001	Eka wulandari	14/6/2020	New Beat Street	Matic	1 unit	Rp.18.180.000
157494	1207030510890005	Tia	16/6/2020	New Beat Street	Matic	1 unit	Rp.18.180.000
157495	1208042106880005	Rafael	06/04/2020	Genio CBS	Matic	1 unit	Rp.18.540.000
157496	1202255012860008	Haari	06/09/2020	Genio CBS	Matic	1 unit	Rp.18.540.000
157497	1200206512900003	Rafli	06/05/2020	Genio CBS ISS	Matic	1 unit	Rp.19.020.000
157498	1203145004920011	Thoriq Bahari	06/08/2020	Genio CBS ISS	Matic	1 unit	Rp.19.020.000
157499	1208292109890002	Fathin	15/6/2020	Scoopy Stylish	Matic	1 unit	Rp.20.780.000
157500	1205071104860011	Qiqi	17/6/2020	Scoopy Stylish	Matic	1 unit	Rp.20.780.000
157501	1205101201890009	Anjasmara	06/12/2020	New Scoopy Sporty	Matic	1 unit	Rp.20.970.000
157502	1201101101890009	Aprilia	25/6/2020	New Scoopy Sporty	Matic	1 unit	Rp.20.970.000
157503	1205092306900007	Safinatus	14/6/2020	Vario 125 esp CBS ISS	Matic	1 unit	Rp.21.390.000
157504	1208065705910007	Tanaka	19/6/2020	Vario 125 esp CBS ISS	Matic	1 unit	Rp.21.390.000
157505	1204037008860003	Aaron	20/6/2020	Vario 150 esp CBS ISS	Matic	1 unit	Rp.24.890.000
157506	1204072402890004	Arsenio akbar	21/6/2020	Vario 150 esp CBS ISS	Matic	1 unit	Rp.24.890.000
157507	1201121805880004	Nur annasya Aina	16/6/2020	CB Verza Spoke	Manual	1 unit	Rp.21.130.000
157508	1204120710860002	Aina marissa	17/6/2020	CB Verza Spoke	Manual	1 unit	Rp.21.130.000
157509	1203095409917815	Maryam alisha	06/01/2020	CBR150Streetfire	Manual	1 unit	Rp.29.410.000
157510	1204081804910002	Irdina Sofia	06/03/2020	CBR150Streetfire	Manual	1 unit	Rp.29.410.000
157511	1204095902910001	Nurida fatini	17/6/2020	CBR150Std	Manual	1 unit	Rp.38.240.000
157512	1203125408890002	Nuraisyah	19/6/2020	CBR150Std	Manual	1 unit	Rp.38.240.000
157513	1201016311880004	Nuraimun	25/6/2020	CBR150Abs	Manual	1 unit	Rp.40.840.000
157514	1200014912890001	Mikayla	26/6/2020	CBR150Abs	Manual	1 unit	Rp.40.840.000
157515	1203287001900002	Fadilla Safitri	20/6/2020	CRF150L	Manual	1 unit	Rp.35.430.000
157516	1203074808860002	Affia fitiya	21/6/2020	CRF150L	Manual	1 unit	Rp.35.430.000
157517	1206164407920022	Annisa	24/6/2020	Sonic HRR	Manual	1 unit	Rp.24.820.000
157518	1291185907910004	Atika	25/6/2020	Sonic HRR	Manual	1 unit	Rp.24.820.000
157519	1201104707910004	Aulia Rahman	12/6/2020	Sonic Std	Manual	1 unit	Rp.24.120.000
157520	1205056601900006	Badriah	16/6/2020	Sonic Std	Manual	1 unit	Rp.24.120.000
157521	1204121909890005	Bilqis azzahra	28/6/2020	ADV 150 ABS	Matic	1 unit	Rp.41.540.000
157522	1201041103910007	Bima	30/6/2020	ADV 150 ABS	Matic	1 unit	Rp.41.540.000
157523	1203115705880002	Daliya	24/6/2020	ADV 150 CBS	Matic	1 unit	Rp.30.850.000
157524	1200230508880001	Diana	29/6/2020	ADV 150 CBS	Matic	1 unit	Rp.30.850.000

JULI							
No. Faktur	NIK/No. KTP	Nama Customer	Tgl/Bln/Thn	Merk/Type yang dibeli	Jenis	Jumlah	Harga
157525	1200100110890061	Amanda	07/02/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157526	1202044510900004	Verrel	07/04/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157527	1204041004850006	Bimo	5/7/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157528	1207260611880005	Fifah	07/08/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157529	1205125606900001	murkhoffah	07/10/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157530	12040373008900002	Bambang syahputra	07/12/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157531	1201124212900005	Eka wulandari	14/7/2020	New Beat Street	Matic	1 unit	Rp.18.180.000
157532	1202175606900001	Fitri juhana	16/7/2020	New Beat Street	Matic	1 unit	Rp.18.180.000
157533	1201045202910002	Afni sari	06/04/2020	Genio CBS	Matic	1 unit	Rp.18.540.000
157534	1202152706900003	Fikri	07/09/2020	Genio CBS	Matic	1 unit	Rp.18.540.000
157535	1203045302910002	Rafli	07/05/2020	Genio CBS ISS	Matic	1 unit	Rp.19.020.000
157536	1201130708900001	agung	07/08/2020	Genio CBS ISS	Matic	1 unit	Rp.19.020.000
157537	1201074305900006	Fathin	15/7/2020	Scoopy Stylish	Matic	1 unit	Rp.20.780.000
157538	1204042804860002	abidin	16/7/2020	Scoopy Stylish	Matic	1 unit	Rp.20.780.000
157539	1204095611900001	Budi	07/12/2020	New Scoopy Sporty	Matic	1 unit	Rp.20.970.000
157540	1204035510850002	Eprilia safinatus	20/7/2020	New Scoopy Sporty	Matic	1 unit	Rp.20.970.000
157541	1204134607910001	Iltam	14/7/2020	Vario 125 esp CBS ISS	Matic	1 unit	Rp.21.390.000
157542	1204132405890001	Siti salma	19/7/2020	Vario 125 esp CBS ISS	Matic	1 unit	Rp.21.390.000
157543	1202014908890001	Aaron	21/7/2020	Vario 150 esp CBS ISS	Matic	1 unit	Rp.24.890.000
157544	1201135007850005	miyah	21/7/2020	Vario 150 esp CBS ISS	Matic	1 unit	Rp.24.890.000
157545	1204045602860003	Aina maisyarah	15/7/2020	CB Verza Spoke	Manual	1 unit	Rp.21.130.000
157546	1202045610910004	Lena nasution	17/7/2020	CB Verza Spoke	Manual	1 unit	Rp.21.130.000
157547	1205021901850018	Andi batubara	07/01/2020	CBR150Streetfire	Manual	1 unit	Rp.29.410.000
157548	12060176312880003	Irdina Sofia	07/03/2020	CBR150Streetfire	Manual	1 unit	Rp.29.410.000
157549	1204101803870001	Susanti simanungkalit	17/7/2020	CBR150Std	Manual	1 unit	Rp.38.240.000
157550	1201174503910004	Aarli ramadhan BB	19/7/2020	CBR150Std	Manual	1 unit	Rp.38.240.000
157551	1201116101860004	Nuraisyah	25/7/2020	CBR150Abs	Manual	1 unit	Rp.40.840.000
157552	1201096207910002	Muliana	25/7/2020	CBR150Abs	Manual	1 unit	Rp.40.840.000
157553	1206090711870003	Riski fidli	19/7/2020	CRF150L	Manual	1 unit	Rp.35.430.000
157554	1205076006880005	Fahlevi	21/7/2020	CRF150L	Manual	1 unit	Rp.35.430.000
157555	1204096607910003	Viola	26/7/2020	Sonic HRR	Manual	1 unit	Rp.24.820.000
157556	1204054306910001	Puspita	27/7/2020	Sonic HRR	Manual	1 unit	Rp.24.820.000
157557	1205036801870013	Sari gusfiana	07/12/2020	Sonic Std	Manual	1 unit	Rp.24.120.000
157558	1204074406910003	Sri wahyuni damanik	16/7/2020	Sonic Std	Manual	1 unit	Rp.24.120.000
157559	1205016602910002	Markus panggabean	07/03/2020	ADV 150 ABS	Matic	1 unit	Rp.41.540.000
157560	1205095412900002	santoso	30/7/2020	ADV 150 ABS	Matic	1 unit	Rp.41.540.000
157561	1201144404920003	Diana	24/7/2020	ADV 150 CBS	Matic	1 unit	Rp.30.850.000
157562	1204097009870004	Doni rangkuti	29/7/2020	ADV 150 CBS	Matic	1 unit	Rp.30.850.000

AGUSTUS							
No. Faktur	NIK/No. KTP	Nama Customer	Tgl/Bln/Thn	Merk/Type yang dibeli	Jenis	Jumlah	Harga
157563	1205016205870027	Syahputra	08/01/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157564	1207130205910004	Vino	08/03/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157565	1201036404870001	Bastian	08/05/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157566	1203138112880305	Dinda hana	08/08/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157567	1202164612900003	Cut	25/8/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157568	1203025412910006	Mayyuriska	27/8/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157569	1208051111900001	Wulan tanjung	08/11/2020	New Beat Street	Matic	1 unit	Rp.18.180.000
157570	1203050904860001	Imanjar	16/8/2020	New Beat Street	Matic	1 unit	Rp.18.180.000
157571	1203092003920001	Maghriña	4/8/2020	Genio CBS	Matic	1 unit	Rp.18.540.000
157572	1203282709880001	Abdillah	08/09/2020	Genio CBS	Matic	1 unit	Rp.18.540.000
157573	1203025511860004	Indrawan	20/8/2020	Genio CBS ISS	Matic	1 unit	Rp.19.020.000
157574	1208105701920002	Andrian	15/8/2020	Genio CBS ISS	Matic	1 unit	Rp.19.020.000
157575	1208256501900001	Adam	13/8/2020	Scoopy Stylish	Matic	1 unit	Rp.20.780.000
157576	1201124604910003	Muhammad reza	16/8/2020	Scoopy Stylish	Matic	1 unit	Rp.20.780.000
157577	1204076104090003	Maghfira	08/12/2020	New Scoopy Sporty	Matic	1 unit	Rp.20.970.000
157578	1203065007910001	Khoiry	20/8/2020	New Scoopy Sporty	Matic	1 unit	Rp.20.970.000
157579	1202034601890001	Ananda	15/8/2020	Vario 125 esp CBS ISS	Matic	1 unit	Rp.21.390.000
157580	1201144304880001	Ali pohan	18/8/2020	Vario 125 esp CBS ISS	Matic	1 unit	Rp.21.390.000
157581	1209036211900004	Adinda	08/10/2020	Vario 150 esp CBS ISS	Matic	1 unit	Rp.24.890.000
157582	1208105210880003	Rahmansyah	08/11/2020	Vario 150 esp CBS ISS	Matic	1 unit	Rp.24.890.000
157583	1204104409900005	Maisarah	13/8/2020	CB Verza Spoke	Manual	1 unit	Rp.21.130.000
157584	1201106701910002	Laila Barokah	19/8/2020	CB Verza Spoke	Manual	1 unit	Rp.21.130.000
157585	1208036410880002	Dona Harahap	08/01/2020	CBR150Streetfire	Manual	1 unit	Rp.29.410.000
157586	1203054904900001	Isyana	08/02/2020	CBR150Streetfire	Manual	1 unit	Rp.29.410.000
157587	1205064407850008	Sella nur cahaya	08/08/2020	CBR150Std	Manual	1 unit	Rp.38.240.000
157588	1203010505900015	Hasnaini	19/8/2020	CBR150Std	Manual	1 unit	Rp.38.240.000
157589	1201226004890005	Ani	25/8/2020	CBR150Abs	Manual	1 unit	Rp.40.840.000
157590	1205092108860003	Saipul	27/8/2020	CBR150Abs	Manual	1 unit	Rp.40.840.000
157591	1205080610850003	Iwan fidilla	20/8/2020	CRF150L	Manual	1 unit	Rp.35.430.000
157592	1203103008900002	Rahmat	21/8/2020	CRF150L	Manual	1 unit	Rp.35.430.000
157593	1201096503860001	Gloria ambarita	28/8/2020	Sonic HRR	Manual	1 unit	Rp.24.820.000
157594	1202066707910002	Hanum	29/8/2020	Sonic HRR	Manual	1 unit	Rp.24.820.000
157595	1206045804830002	Annita hannum	08/11/2020	Sonic Std	Manual	1 unit	Rp.24.120.000
157596	1202186909910001	Gufri	29/8/2020	Sonic Std	Manual	1 unit	Rp.24.120.000
157597	1207116907870009	Helmi	08/12/2020	ADV 150 ABS	Matic	1 unit	Rp.41.540.000
157598	1207025406910003	Dhafin ikhwan	30/8/2020	ADV 150 ABS	Matic	1 unit	Rp.41.540.000
157599	1203036205890002	Fanny islamiyah	25/8/2020	ADV 150 CBS	Matic	1 unit	Rp.30.850.000
157600	1208141608910002	Putra	29/8/2020	ADV 150 CBS	Matic	1 unit	Rp.30.850.000

SEPTEMBER							
No. Faktur	NIK/No. KTP	Nama Customer	Tgl/Bln/Thn	Merk/Type yang dibeli	Jenis	Jumlah	Harga
157600	1208092006920011	Lina	09/02/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157601	1208218801890001	Magdalena	09/03/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157602	1204024310890003	Rifa	09/05/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157603	1205222007850004	Nanta	09/08/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157604	1201065907890004	Fauzan	15/9/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157605	1201176611920003	Fiona	20/9/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157606	1202065906900005	Jamaluddin	09/11/2020	New Beat Street	Matic	1 unit	Rp.18.180.000
157607	1204091402920002	Abdul	16/9/2020	New Beat Street	Matic	1 unit	Rp.18.180.000
157608	1205036805890016	Khoril	09/05/2020	Genio CBS	Matic	1 unit	Rp.18.540.000
157609	1205132610910001	Yanto	09/09/2020	Genio CBS	Matic	1 unit	Rp.18.540.000
157610	1201012112880006	Agus riadi	20/9/2020	Genio CBS ISS	Matic	1 unit	Rp.19.020.000
157611	1207064912850006	Yopi firstain	16/9/2020	Genio CBS ISS	Matic	1 unit	Rp.19.020.000
157612	1205065009910013	Anwar	13/9/2020	Scoopy Stylish	Matic	1 unit	Rp.20.780.000
157613	1206155110870001	Kirana	15/9/2020	Scoopy Stylish	Matic	1 unit	Rp.20.780.000
157614	1204054606870008	Lestari simatupang	27/9/2020	New Scoopy Sporty	Matic	1 unit	Rp.20.970.000
157615	1208194312910001	Khoiry	29/9/2020	New Scoopy Sporty	Matic	1 unit	Rp.20.970.000
157616	1208024605920002	Rico Hasibuan	09/01/2020	Vario 125 esp CBS ISS	Matic	1 unit	Rp.21.390.000
157617	1201070803880002	Supiani	09/09/2020	Vario 125 esp CBS ISS	Matic	1 unit	Rp.21.390.000
157618	1207056607910003	Rika	19/9/2020	Vario 150 esp CBS ISS	Matic	1 unit	Rp.24.890.000
157619	1203110410910004	Lia	21/9/2020	Vario 150 esp CBS ISS	Matic	1 unit	Rp.24.890.000
157620	1203251012870002	Aidil	09/12/2020	CB Verza Spoke	Manual	1 unit	Rp.21.130.000
157621	1201135106850007	Musdalifah	19/9/2020	CB Verza Spoke	Manual	1 unit	Rp.21.130.000
157622	1203295507890001	Nurbaiti	09/04/2020	CBR150Streetfire	Manual	1 unit	Rp.29.410.000
157623	1205144408900001	Tio sinambela	09/06/2020	CBR150Streetfire	Manual	1 unit	Rp.29.410.000
157624	1205051008910006	Matiur Harahap	17/9/2020	CBR150Std	Manual	1 unit	Rp.38.240.000
157625	1201095905900005	Sutiana	19/9/2020	CBR150Std	Manual	1 unit	Rp.38.240.000
157626	1206066203890002	Supriono	09/06/2020	CBR150Abs	Manual	1 unit	Rp.40.840.000
157627	1205121608860001	Jono	15/9/2020	CBR150Abs	Manual	1 unit	Rp.40.840.000
157628	1201111701910001	Ferdian	20/9/2020	CRF150L	Manual	1 unit	Rp.35.430.000
157629	1204075502880002	Rohmat	22/9/2020	CRF150L	Manual	1 unit	Rp.35.430.000
157630	1205014907860003	Anita sari sikumbang	14/9/2020	Sonic HRR	Manual	1 unit	Rp.24.820.000
157631	1205061203860024	Yunita	16/9/2020	Sonic HRR	Manual	1 unit	Rp.24.820.000
157632	1208270103910001	Adnan	18/9/2020	Sonic Std	Manual	1 unit	Rp.24.120.000
157633	1204020501850003	Christian	20/9/2020	Sonic Std	Manual	1 unit	Rp.24.120.000
157634	1208065305910008	Alexander	09/12/2020	ADV 150 ABS	Matic	1 unit	Rp.41.540.000
157635	12060656311880005	Fina	17/9/2020	ADV 150 ABS	Matic	1 unit	Rp.41.540.000
157636	1202064306890001	Sri wratini	19/9/2020	ADV 150 CBS	Matic	1 unit	Rp.30.850.000
157637	1204062504920017	Widya	25/9/2020	ADV 150 CBS	Matic	1 unit	Rp.30.850.000
OKTOBER							
No. Faktur	NIK/No. KTP	Nama Customer	Tgl/Bln/Thn	Merk/Type yang dibeli	Jenis	Jumlah	Harga
157638	1204035703890005	Tasya putri	10/03/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157639	1209026807910001	Hermansyah	10/05/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157640	1206060805890013	Agus	10/07/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157641	1205074504900008	Monica	10/09/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157642	1204065803860003	Donita	10/12/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157643	1201061407880001	Sonia	14/10/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157644	1208203004870001	Amelia	10/02/2020	New Beat Street	Matic	1 unit	Rp.18.180.000
157645	1205074507920004	Debby amelia	10/06/2020	New Beat Street	Matic	1 unit	Rp.18.180.000
157646	1206064805900002	Ade Fachiza	10/01/2020	Genio CBS	Matic	1 unit	Rp.18.540.000
157647	1206021509870004	Gita aliyani	10/08/2020	Genio CBS	Matic	1 unit	Rp.18.540.000
157648	1207091902910001	Hardianto	21/10/2020	Genio CBS ISS	Matic	1 unit	Rp.19.020.000
157649	1202291010870004	Ronald	25/10/2020	Genio CBS ISS	Matic	1 unit	Rp.19.020.000
157650	1206085810860002	Risky damara	13/10/2020	Scoopy Stylish	Matic	1 unit	Rp.20.780.000
157651	1206096312840009	Anjelina	18/10/2020	Scoopy Stylish	Matic	1 unit	Rp.20.780.000
157652	1204020102890418	Desi	27/10/2020	New Scoopy Sporty	Matic	1 unit	Rp.20.970.000
157653	1203015701910001	Abdi	29/10/2020	New Scoopy Sporty	Matic	1 unit	Rp.20.970.000
157654	1207186308910001	Nova yanti	10/01/2020	Vario 125 esp CBS ISS	Matic	1 unit	Rp.21.390.000
157655	1205052203880004	Sapriani	10/09/2020	Vario 125 esp CBS ISS	Matic	1 unit	Rp.21.390.000
157656	1203014301860003	Annisza malau	19/10/2020	Vario 150 esp CBS ISS	Matic	1 unit	Rp.24.890.000
157657	1203225004870003	Sri wahyuni	22/10/2020	Vario 150 esp CBS ISS	Matic	1 unit	Rp.24.890.000
157658	1200054305860001	Fadlan zuhadi	10/07/2020	CB Verza Spoke	Manual	1 unit	Rp.21.130.000
157659	1204062603860004	afidial diansyah	10/10/2020	CB Verza Spoke	Manual	1 unit	Rp.21.130.000
157660	1203121201900004	Zaenab	10/04/2020	CBR150Streetfire	Manual	1 unit	Rp.29.410.000
157661	1200064812900001	Sri qizqi	10/06/2020	CBR150Streetfire	Manual	1 unit	Rp.29.410.000
157662	1205084310870004	Nuriela	17/10/2020	CBR150Std	Manual	1 unit	Rp.38.240.000
157663	1202155411870001	Ilyas	19/10/2020	CBR150Std	Manual	1 unit	Rp.38.240.000
157664	1203176410890003	Supriono	10/06/2020	CBR150Abs	Manual	1 unit	Rp.40.840.000
157665	1201306504880001	Santi	14/10/2020	CBR150Abs	Manual	1 unit	Rp.40.840.000
157666	1204061406900001	Ferdian	20/10/2020	CRF150L	Manual	1 unit	Rp.35.430.000
157667	1204145110910002	Liana	23/10/2020	CRF150L	Manual	1 unit	Rp.35.430.000
157668	1207125907900004	Mahmudin	15/10/2020	Sonic HRR	Manual	1 unit	Rp.24.820.000
157669	1204056110900002	Muhtidin	17/10/2020	Sonic HRR	Manual	1 unit	Rp.24.820.000
157670	1204034205850001	Dion pasaribu	20/10/2020	Sonic Std	Manual	1 unit	Rp.24.120.000
157671	1209036110900001	Christian	22/10/2020	Sonic Std	Manual	1 unit	Rp.24.120.000
157672	1201035506920009	Bintang	13/10/2020	ADV 150 ABS	Matic	1 unit	Rp.41.540.000
157673	1200087004890005	Fani	19/10/2020	ADV 150 ABS	Matic	1 unit	Rp.41.540.000
157674	1209074906900001	Chairunnisa	21/10/2020	ADV 150 CBS	Matic	1 unit	Rp.30.850.000
157675	1206056904900003	Salsabila	25/10/2020	ADV 150 CBS	Matic	1 unit	Rp.30.850.000

NOVEMBER							
No. Faktur	NIK/No. KTP	Nama Customer	Tgl/Bln/Thn	Merk/Type yang dibeli	Jenis	Jumlah	Harga
157676	1205050710850001	Anton	11/04/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157677	1201181302850003	Iqbal syahputra	11/06/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157678	1206066708860003	Riski Ramadhan	11/09/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157679	1203016111900003	Andika	11/03/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157680	1207196811860002	Raza	11/10/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157681	1203014401910001	Ryan	17/11/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157682	1205076502880007	Amelia	11/02/2020	New Beat Street	Matic	1 unit	Rp.18.180.000
157683	1201014605900002	Carissa	6.11/2020	New Beat Street	Matic	1 unit	Rp.18.180.000
157684	1203014201900004	Dzakiah	11/03/2020	Genio CBS	Matic	1 unit	Rp.18.540.000
157685	1208051507920001	Widya	11/05/2020	Genio CBS	Matic	1 unit	Rp.18.540.000
157686	1201176503880001	Galang	11/10/2020	Genio CBS ISS	Matic	1 unit	Rp.19.020.000
157687	1203092506860001	Nurazizah	25/11/2020	Genio CBS ISS	Matic	1 unit	Rp.19.020.000
157688	1203061705880003	Indra	11/01/2020	Scoopy Stylish	Matic	1 unit	Rp.20.780.000
157689	1208170604870003	Yusril	11/03/2020	Scoopy Stylish	Matic	1 unit	Rp.20.780.000
157690	1205074811900006	Nurailia	27/11/2020	New Scoopy Sporty	Matic	1 unit	Rp.20.970.000
157691	12030300311850001	Barokah	29/11/2020	New Scoopy Sporty	Matic	1 unit	Rp.20.970.000
157692	1202051712840006	Aimun	11/12/2020	Vario 125 esp CBS ISS	Matic	1 unit	Rp.21.390.000
157693	1205182008850001	Diza	15/11/2020	Vario 125 esp CBS ISS	Matic	1 unit	Rp.21.390.000
157694	1205041305860011	Laila	17/11/2020	Vario 150 esp CBS ISS	Matic	1 unit	Rp.24.890.000
157695	1200251103870004	Mayang	19/11/2020	Vario 150 esp CBS ISS	Matic	1 unit	Rp.24.890.000
157696	1206091602850006	Iryna wanda	11/01/2020	CB Verza Spoke	Manual	1 unit	Rp.21.130.000
157697	1205111710880002	Anto	11/10/2020	CB Verza Spoke	Manual	1 unit	Rp.21.130.000
157698	1206011612890003	Aldo	15/11/2020	CBR150Streetfire	Manual	1 unit	Rp.29.410.000
157699	1204012408890008	Zafan	20/11/2020	CBR150Streetfire	Manual	1 unit	Rp.29.410.000
157700	120115109870062	Boby	21/11/2020	CBR150Std	Manual	1 unit	Rp.38.240.000
157701	1205156003860001	Lila Harahap	25/11/2020	CBR150Std	Manual	1 unit	Rp.38.240.000
157702	1202146108880001	Dandi	11/06/2020	CBR150Abs	Manual	1 unit	Rp.40.840.000
157703	1209042508850001	Sumanto	11/09/2020	CBR150Abs	Manual	1 unit	Rp.40.840.000
157704	1202022308860004	Ramlah	20/11/2020	CRF150L	Manual	1 unit	Rp.35.430.000
157705	1202036008860008	Sukri	29/11/2020	CRF150L	Manual	1 unit	Rp.35.430.000
157706	1201122602850004	Sunandar	11/08/2020	Sonic HRR	Manual	1 unit	Rp.24.820.000
157707	1207094608910003	Sheryl	11/12/2020	Sonic HRR	Manual	1 unit	Rp.24.820.000
157708	1201096707870003	Raka	21/11/2020	Sonic Std	Manual	1 unit	Rp.24.120.000
157709	1206086803910006	Jaka	23/11/2020	Sonic Std	Manual	1 unit	Rp.24.120.000
157710	1204116310880001	Suriadi	14/11/2020	ADV 150 ABS	Matic	1 unit	Rp.41.540.000
157711	1200242108910003	Sumani	16/11/2020	ADV 150 ABS	Matic	1 unit	Rp.41.540.000
157712	1204084808880004	Salsa Chairunnisa	19/11/2020	ADV 150 CBS	Matic	1 unit	Rp.30.850.000
157713	1201376002890002	Sumajito	24/11/2020	ADV 150 CBS	Matic	1 unit	Rp.30.850.000
DESEMBER							
No. Faktur	NIK/No. KTP	Nama Customer	Tgl/Bln/Thn	Merk/Type yang dibeli	Jenis	Jumlah	Harga
157714	1205095806880001	Iddar syahputra	12/01/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157715	1205091406890003	Azizah	12/05/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157716	1201306307910001	Davat	12/09/2020	New Beat Sporty CBS	Matic	1 unit	Rp.17.440.000
157717	1208275303910001	Nurai	12/10/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157718	1208244805880002	Veronika	15/12/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157719	1205015604870005	Rangga	17/12/2020	New Beat Sporty CBS ISS	Matic	1 unit	Rp.18.150.000
157720	1201011802900016	Raditya	12/02/2020	New Beat Street	Matic	1 unit	Rp.18.180.000
157721	1205180804890008	Noni	12/06/2020	New Beat Street	Matic	1 unit	Rp.18.180.000
157722	1201080206880003	Antonius	12/10/2020	Genio CBS	Matic	1 unit	Rp.18.540.000
157723	1201042912840007	Dian annisa	15/12/2020	Genio CBS	Matic	1 unit	Rp.18.540.000
157724	1208206502930001	Robiatul	12/12/2020	Genio CBS ISS	Matic	1 unit	Rp.19.020.000
157725	1205061005900019	Januaris	14/12/2020	Genio CBS ISS	Matic	1 unit	Rp.19.020.000
157726	1206256705850001	Muhammad Rifqi	12/02/2020	Scoopy Stylish	Matic	1 unit	Rp.20.780.000
157727	1208016511870001	Sofiatul	12/04/2020	Scoopy Stylish	Matic	1 unit	Rp.20.780.000
157728	1203074703890005	Angga	12/10/2020	New Scoopy Sporty	Matic	1 unit	Rp.20.970.000
157729	1201141208910008	Michelin	30/12/2020	New Scoopy Sporty	Matic	1 unit	Rp.20.970.000
157730	1201144705860002	Ajiwa	12/12/2020	Vario 125 esp CBS ISS	Matic	1 unit	Rp.21.390.000
157731	1203100813900001	Febriani	14/12/2020	Vario 125 esp CBS ISS	Matic	1 unit	Rp.21.390.000
157732	1201075710910004	Zakaria	17/12/2020	Vario 150 esp CBS ISS	Matic	1 unit	Rp.24.890.000
157733	1203078711900005	Muhammad abdullah	19/12/2020	Vario 150 esp CBS ISS	Matic	1 unit	Rp.24.890.000
157734	1201040264890002	Gito	12/01/2020	CB Verza Spoke	Manual	1 unit	Rp.21.130.000
157735	1204074906910002	Ahmad riyadi	19/12/2020	CB Verza Spoke	Manual	1 unit	Rp.21.130.000
157736	1207082705890001	Bambang santoso	20/12/2020	CBR150Streetfire	Manual	1 unit	Rp.29.410.000
157737	1204044208900001	Gemilang	21/12/2020	CBR150Streetfire	Manual	1 unit	Rp.29.410.000
157738	1204045507860003	Adjie kusuma	22/12/2020	CBR150Std	Manual	1 unit	Rp.38.240.000
157739	1201070101870221	Yogha	29/12/2020	CBR150Std	Manual	1 unit	Rp.38.240.000
157740	1204060112840011	Fauzi sitompul	12/07/2020	CBR150Abs	Manual	1 unit	Rp.40.840.000
157741	1201031003870009	Amirullah	12/09/2020	CBR150Abs	Manual	1 unit	Rp.40.840.000
157742	1201116712880001	Sudrajat	20/12/2020	CRF150L	Manual	1 unit	Rp.35.430.000
157743	1207061305910002	Indah wahyuni	30/12/2020	CRF150L	Manual	1 unit	Rp.35.430.000
157744	1203124806890003	Yuni asri	12/08/2020	Sonic HRR	Manual	1 unit	Rp.24.820.000
157745	1205026203930003	Dewi anjani	14/12/2020	Sonic HRR	Manual	1 unit	Rp.24.820.000
157746	1206044608890002	Sri wahyuni	28/12/2020	Sonic Std	Manual	1 unit	Rp.24.120.000
157747	1209015805910001	Yolanda	22/12/2020	Sonic Std	Manual	1 unit	Rp.24.120.000
157748	1201054508890003	Aditya suhendra	13/12/2020	ADV 150 ABS	Matic	1 unit	Rp.41.540.000
157749	1205050808860002	Maulana	16/12/2020	ADV 150 ABS	Matic	1 unit	Rp.41.540.000
157750	1206051403870003	Habibie	19/12/2020	ADV 150 CBS	Matic	1 unit	Rp.30.850.000
157751	1205095806880001	Shania aurelia	30/12/2020	ADV 150 CBS	Matic	1 unit	Rp.30.850.000

**Gambar III.2. Data Penjualan Tahun 2020 Hasil Riset
(Sumber : CV. Medan Baru, 2021)**

CBR150 Street Fire	0	1	1	1	1	1	1	1	1	1	1	1
CBR150 Std	0	1	1	1	1	1	1	1	1	1	1	1
CBR150 Abs	0	1	1	1	1	1	1	1	1	1	1	1
CBR150L	0	1	1	1	1	1	1	1	1	1	1	1
Sonic HRR	0	1	1	1	1	1	1	1	1	1	1	1
Sonic Std	0	1	1	1	1	1	1	1	1	1	1	1
ADV150 ABS	0	1	1	1	1	1	1	1	1	1	1	1
ADV150 CBS	0	1	1	1	1	1	1	1	1	1	1	1

Kemudian cari nilai error :

$$\text{Seasonal} : e_t = (1 - \Phi \cdot B)^1$$

$$e_2 = (1 - 1.2)^1 = -1$$

Autoregressive (AR) :

$$Y_t = \Phi_1 \cdot Y_{t-1} + \Phi_2 \cdot Y_{t-2} + \Phi_n \cdot Y_{t-n} - e_t$$

Contoh Untuk Meramalkan Bulan Februari 2021 adalah sebagai berikut :

$$Y_2 = (1 \cdot 3) - (-1) = 2$$

Dan seterusnya sehingga menjadi seperti pada Tabel III.3.

Tabel III.3. Hasil Ramalan Perbulan

Motor	Jan Y ₁	Feb Y ₂	Mar Y ₃	Apr Y ₄	Mei Y ₅	Jun Y ₆	Jul Y ₇	Ags Y ₈	Sep Y ₉	Okt Y ₁₀	Nov Y ₁₁	Des Y ₁₂	Total Y _t +e _t
New Beat Sporty CBS	0	2	2	2	2	2	2	2	2	2	2	2	44
New Beat Sporty CBS ISS	0	2	2	2	2	2	2	2	2	2	2	2	44
New Beat Street	0	-1	8	0	0	0	0	0	0	0	0	0	13
Genio CBS	0	-1	-1	-1	-1	8	0	0	0	0	0	0	10

New Beat Sporty CBS ISS	0	3	3	3	3	3	3	3	3	3	3	3
New Beat Street	0	1	1.5	2	2	2	2	2	2	2	2	2
Genio CBS	0	1	1	1	1	1.5	2	2	2	2	2	2
Genio CBS ISS	0	1	1	1	1.5	2	2	2	2	2	2	2
Scoopy Stylish	0	1	1.5	2	2	2	2	2	2	2	2	2
New Scoopy Sporty	0	2	2	2	2	3	3	2	2	2	2	2
Vario 125 125 PSPC	0	4	4	4	4	3	3	4	4	4	4	4
Vario 125 150 PSPC	0	3.5	3	3	4	3.5	3	2	2	2.5	3	3.5
CB Verza Spoke	0	1	1	1	1.5	2	2	2	2	2	2	2
CBR150 Street Fire	0	2	2	2	2	2	2	2	2	2	2	2
CBR150 Std	0	1	1	1	1.5	2	2	2	2	2	2	2
CBR150 Abs	0	1	1	1	1.5	2	2	2	2	2	2	2
CBR150L	0	2	2	2	2	2	2	2	2	2	2	2
Sonic HRR	0	1	1	1	1.5	2	2	2	2	2	2	2
Sonic Std	0	1	1	1	1.5	2	2	2	2	2	2	2
ADV150 ABS	0	2	2	2	2	2	2	2	2	2	2	2
ADV150 CBS	0	1.5	2	2	2	2	2	2	2	2	2	2

Seasonal Autoregressive Integrate Moving Average (SARIMA) :

$$Y_t = Y_t - \Phi_1 \cdot Y_{t-1} + \Phi_2 \cdot Y_{t-2} + \Phi_n \cdot Y_{t-n} + e_t - (1/n) \cdot Y_t + Y_{t-1} + Y_{t-n}$$

Contoh Untuk Meramalkan Bulan Februari 2021 adalah sebagai berikut :

$$Y_2 = (3 + 2) - 3 = 2$$

Dan seterusnya sehingga menjadi seperti pada Tabel III.5.

Tabel.III.5. Hasil Peramalan Metode SARIMA

Motor	Jan Y₁	Feb Y₂	Mar Y₃	Apr Y₄	Mei Y₅	Jun Y₆	Jul Y₇	Ags Y₈	Sep Y₉	Okt Y₁₀	Nov Y₁₁	Des Y₁₂	Total	Total Awal
New Beat Sporty CBS	0	2	2	2	2	2	2	2	2	2	2	2	25	36
New Beat Sporty CBS ISS	0	2	2	2	2	2	2	2	2	2	2	2	25	36
New Beat Street	0	0	3.5	1	1	1	1	1	1	1	1	1	15	22
Genio CBS	0	0	0	0	0	3.5	1	1	1	1	1	1	12	19
Genio CBS ISS	0	0	0	0	3.5	1	1	1	1	1	1	1	12	20
Scoopy Stylish	0	0	3.5	1	1	1	1	1	1	1	1	1	15	22
New Scoopy Sporty	0	1	1	1	1	-2	-7	1	1	1	1	1	2	26
Vario 125 125 PSPC	0	3	3	3	3	-7.0	-2	3	3	3	3	3	22	46
Vario 125 150 PSPC	0	4.8	-7.0	-2	3	2.8	1.8	1	1	4.0	2	4.8	20	36
CB Verza Spoke	0	0	0	0	3.5	1	1	1	1	1	1	1	13	20
CBR150 Street Fire	0	1	1	1	1	1	1	1	1	1	1	1	13	24
CBR150 Std	0	0	0	0	3.5	1	1	1	1	1	1	1	13	20
CBR150 Abs	0	0	0	0	3.5	1	1	1	1	1	1	1	13	20
CBR150L	0	1	1	1	1	1	1	1	1	1	1	1	13	24
Sonic HRR	0	0	0	0	3.5	1	1	1	1	1	1	1	13	20
Sonic Std	0	0	0	0	3.5	1	1	1	1	1	1	1	13	20
ADV150 ABS	0	1	1	1	1	1	1	1	1	1	1	1	13	24
ADV150 CBS	0	3.5	1	1	1	1	1	1	1	1	1	1	16	23

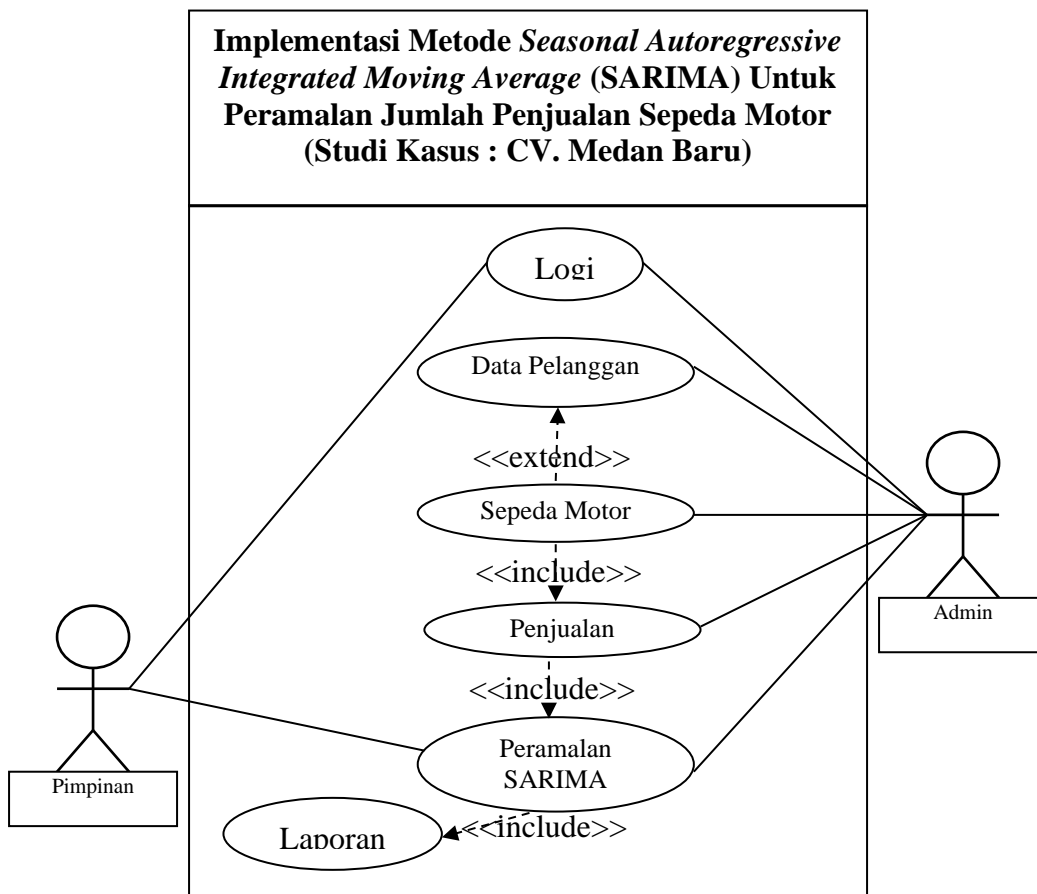
Berdasarkan perhitungan model SARIMA maka dapat disimpulkan bahwa terdapat penurunan penjualan sepeda motor pada tahun 2021.

III.3. Desain Sistem

Desain sistem yang peneliti gunakan adalah pemodelan *Unified Modeling Language* (UML). Berikut ini adalah beberapa pemodelan *Unified Modeling Language* (UML) yang peneliti gunakan :

III.3.1. Use Case Diagram

Use Case Diagram Implementasi Metode *Seasonal Autoregressive Integrated Moving Average* (SARIMA) Untuk Peramalan Jumlah Penjualan Sepeda Motor (Studi Kasus : CV. Medan Baru) dapat di lihat pada Gambar III.2



Gambar III.3. Use Case Diagram Implementasi Metode *Seasonal Autoregressive Integrated Moving Average* (SARIMA) Untuk Peramalan Jumlah Penjualan Sepeda Motor (Studi Kasus : CV. Medan Baru)

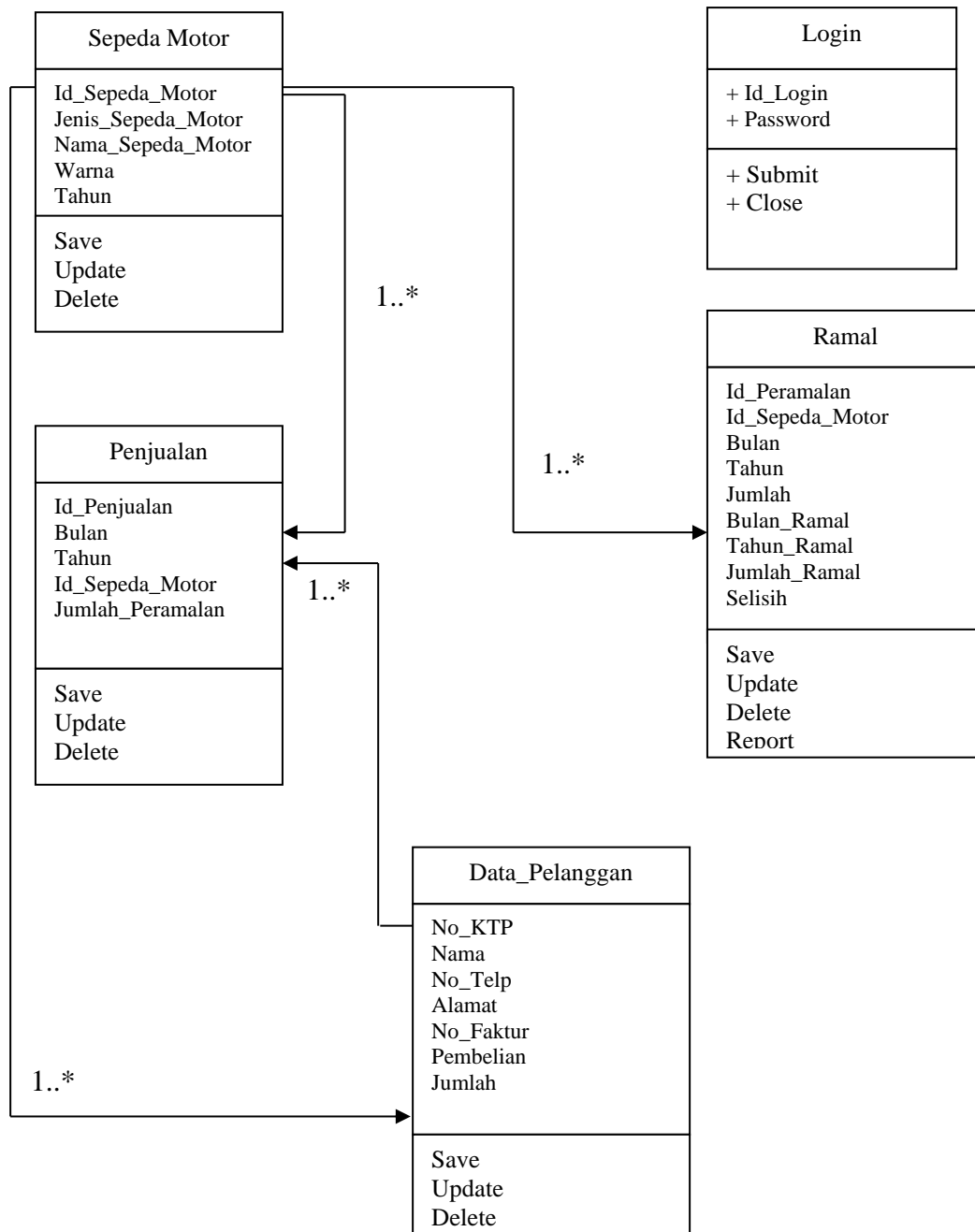
Keterangan :

Gambar III.2 menjelaskan admin dapat mengelola data sepeda motor dan mengelola data penjualan kemudian admin ataupun pimpinan dapat melakukan peramalan.

III.3.2. Class Diagram

Class Diagram Implementasi Metode Seasonal Autoregressive Integrated Moving Average

(SARIMA) dapat di lihat pada Gambar III.3.



Gambar III.4. Class Diagram Implementasi Metode Seasonal Autoregressive Integrated Moving Average (SARIMA)

III.3.3. Activity Diagram

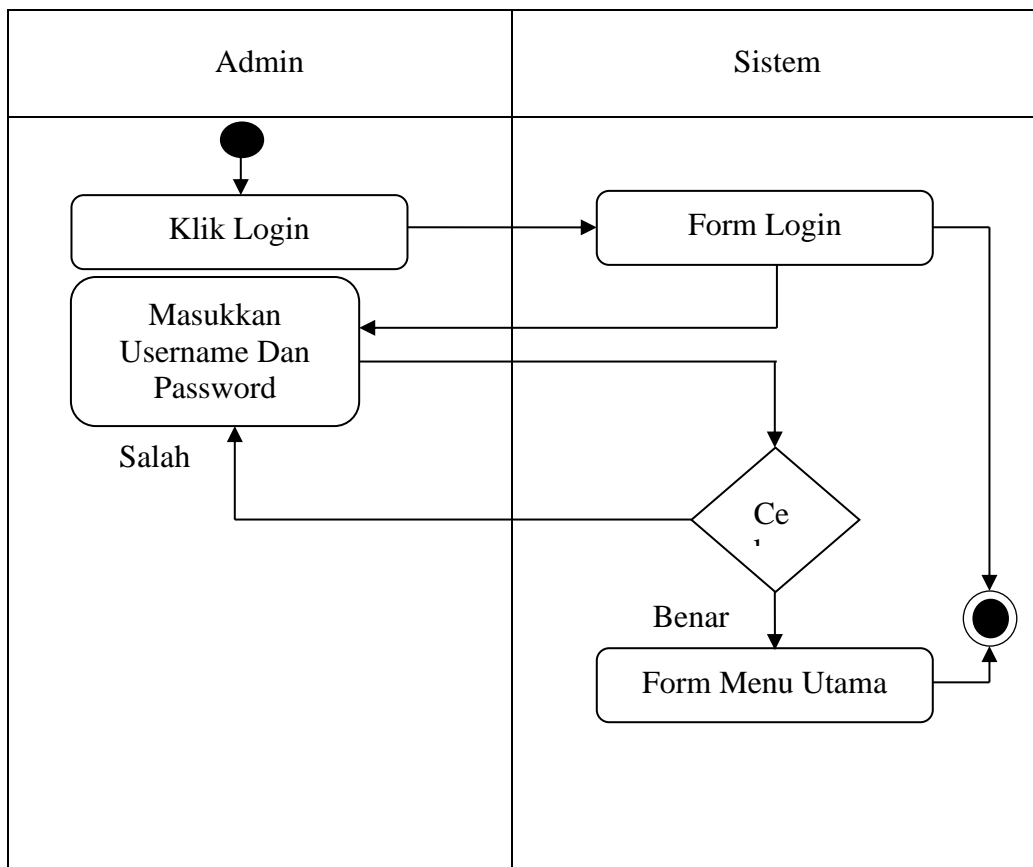
Activity Diagram Implementasi Metode *Seasonal Autoregressive Integrated Moving Average* (SARIMA) dapat di lihat sebagai berikut :

III.3.3.1. Activity Diagram Bagian Admin

Activity Diagram Implementasi Metode *Seasonal Autoregressive Integrated Moving Average* (SARIMA) pada bagian admin dapat di lihat sebagai berikut :

1. Activity Diagram Form Login

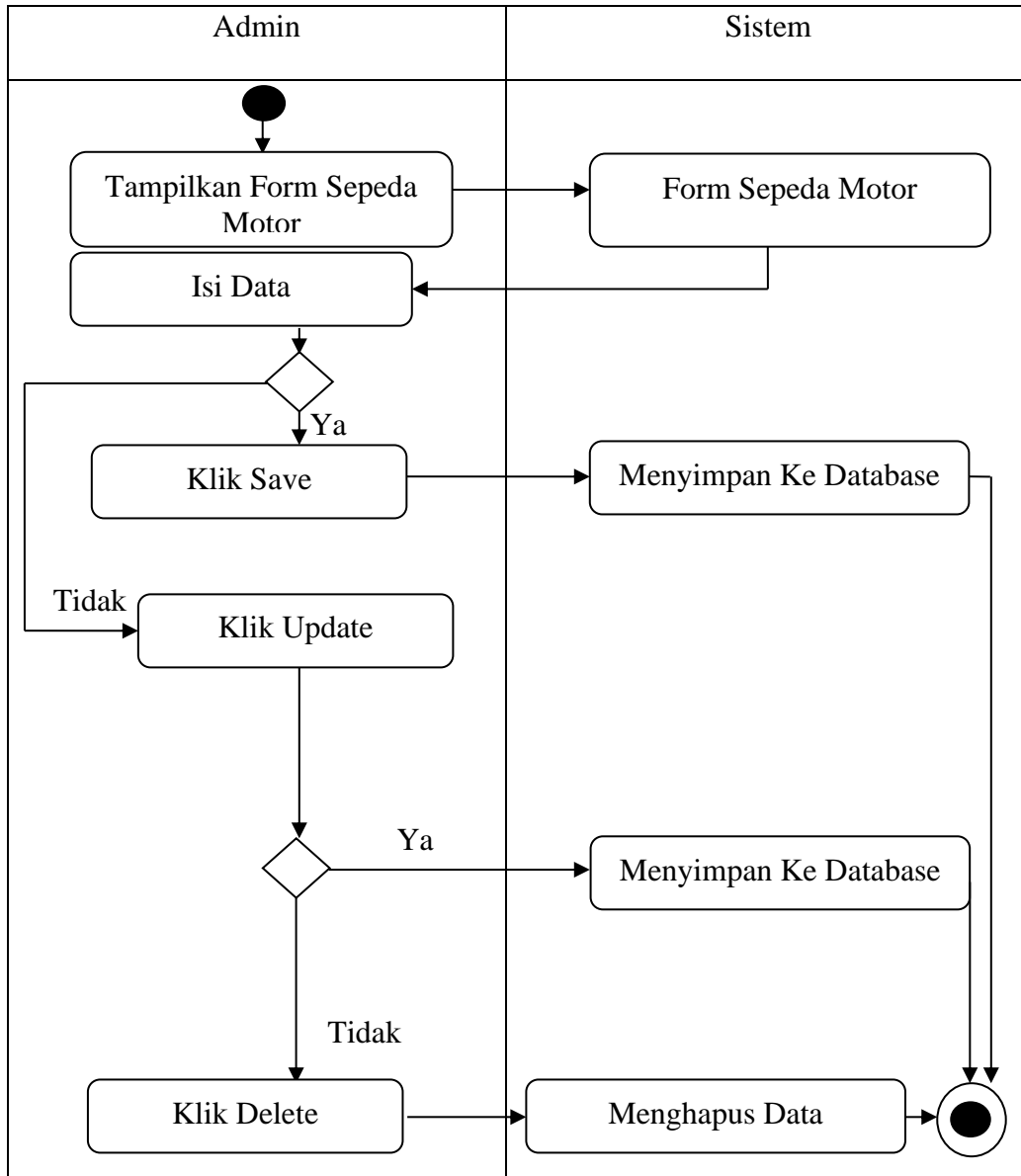
Gambar III.4 merupakan *Activity Diagram Form Login* dari Implementasi Metode *Seasonal Autoregressive Integrated Moving Average* (SARIMA).



Gambar III.5. Activity Diagram Login

2. Activity Diagram Form Sepeda Motor

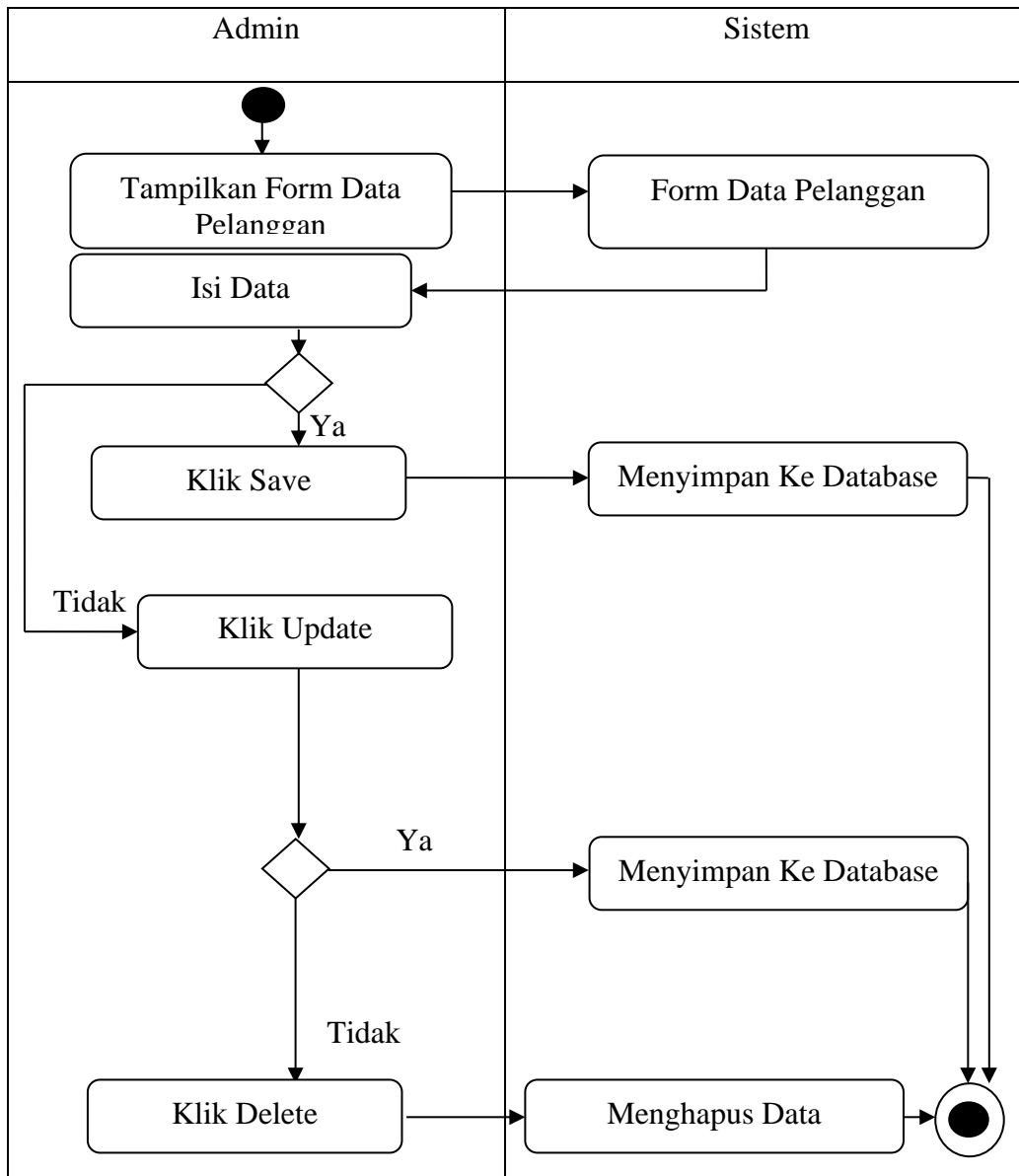
Gambar III.5 merupakan *Activity Diagram Form Sepeda Motor* Implementasi Metode Seasonal Autoregressive Integrated Moving Average (SARIMA).



Gambar III.6. Activity Diagram Form Sepeda Motor

3. Activity Diagram Form Data Pelanggan

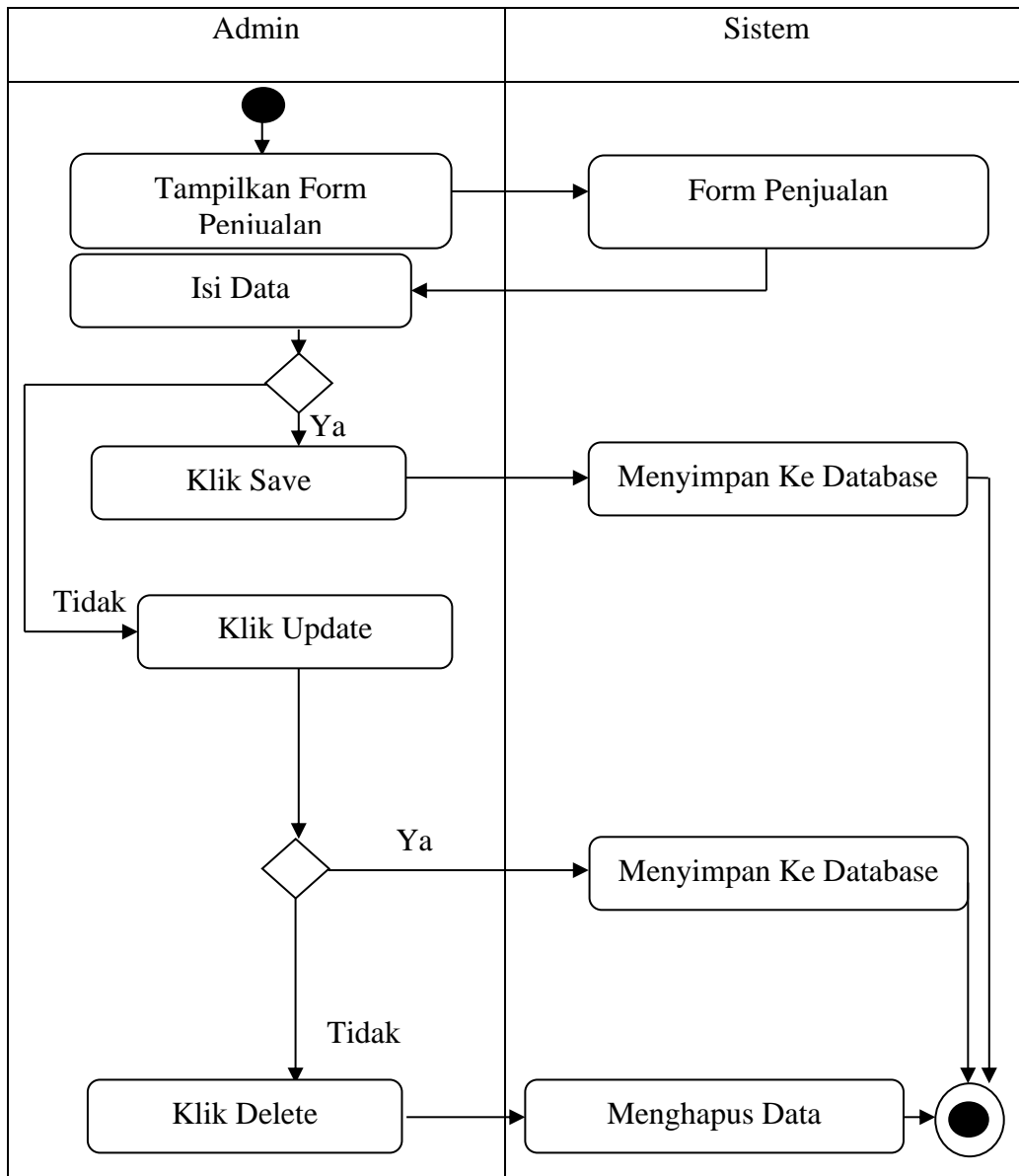
Gambar III.7 merupakan *Activity Diagram Form Data Pelanggan* Implementasi Metode Seasonal Autoregressive Integrated Moving Average (SARIMA).



Gambar III.7. Activity Diagram Form Data Pelanggan

4. *Activity Diagram Form Penjualan*

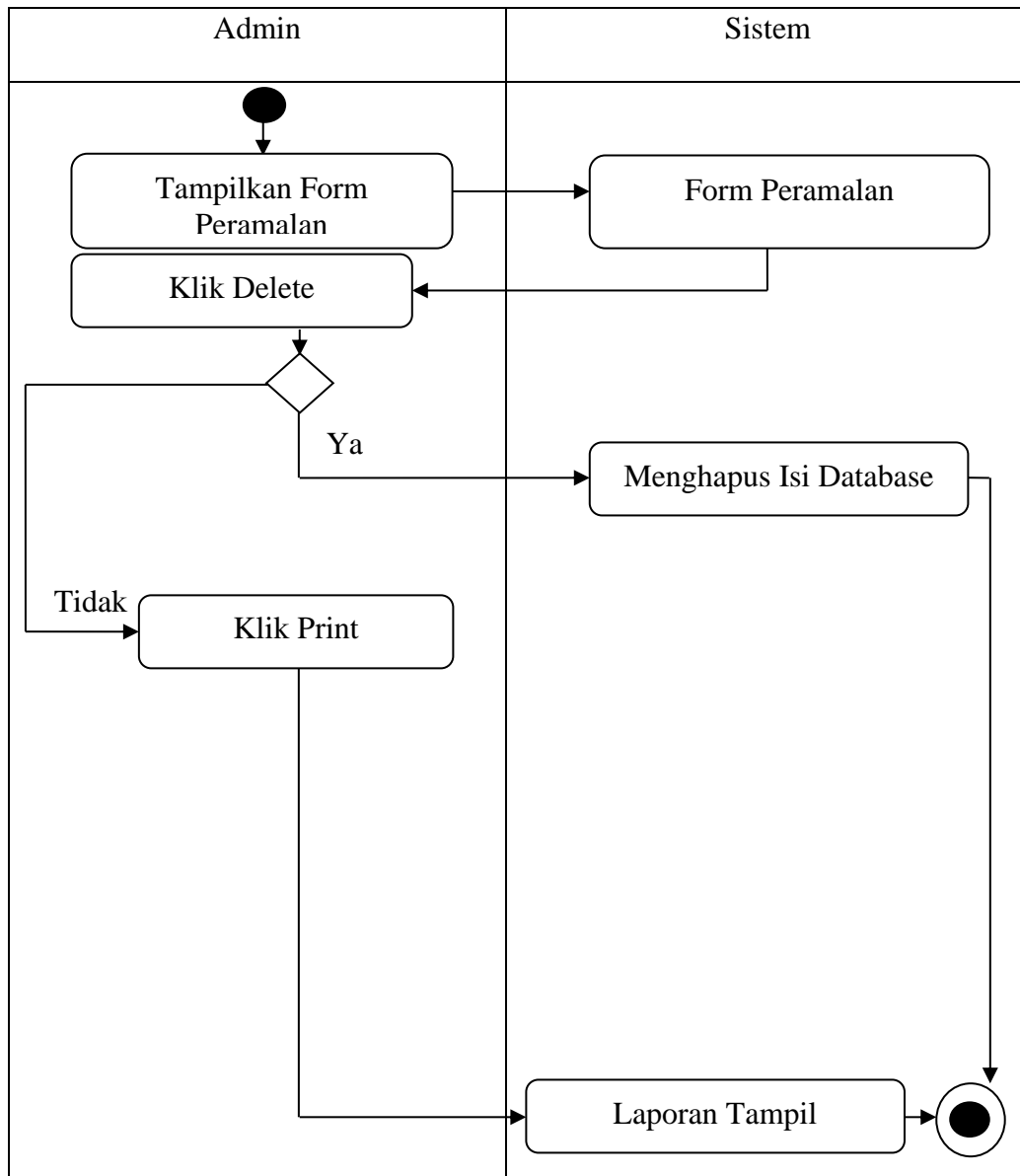
Gambar III.8 merupakan *Activity Diagram Form Penjualan* dari Implementasi Metode Seasonal Autoregressive Integrated Moving Average (SARIMA) .



Gambar III.8. Activity Diagram Form Penjualan

5. Activity Diagram Form Peramalan

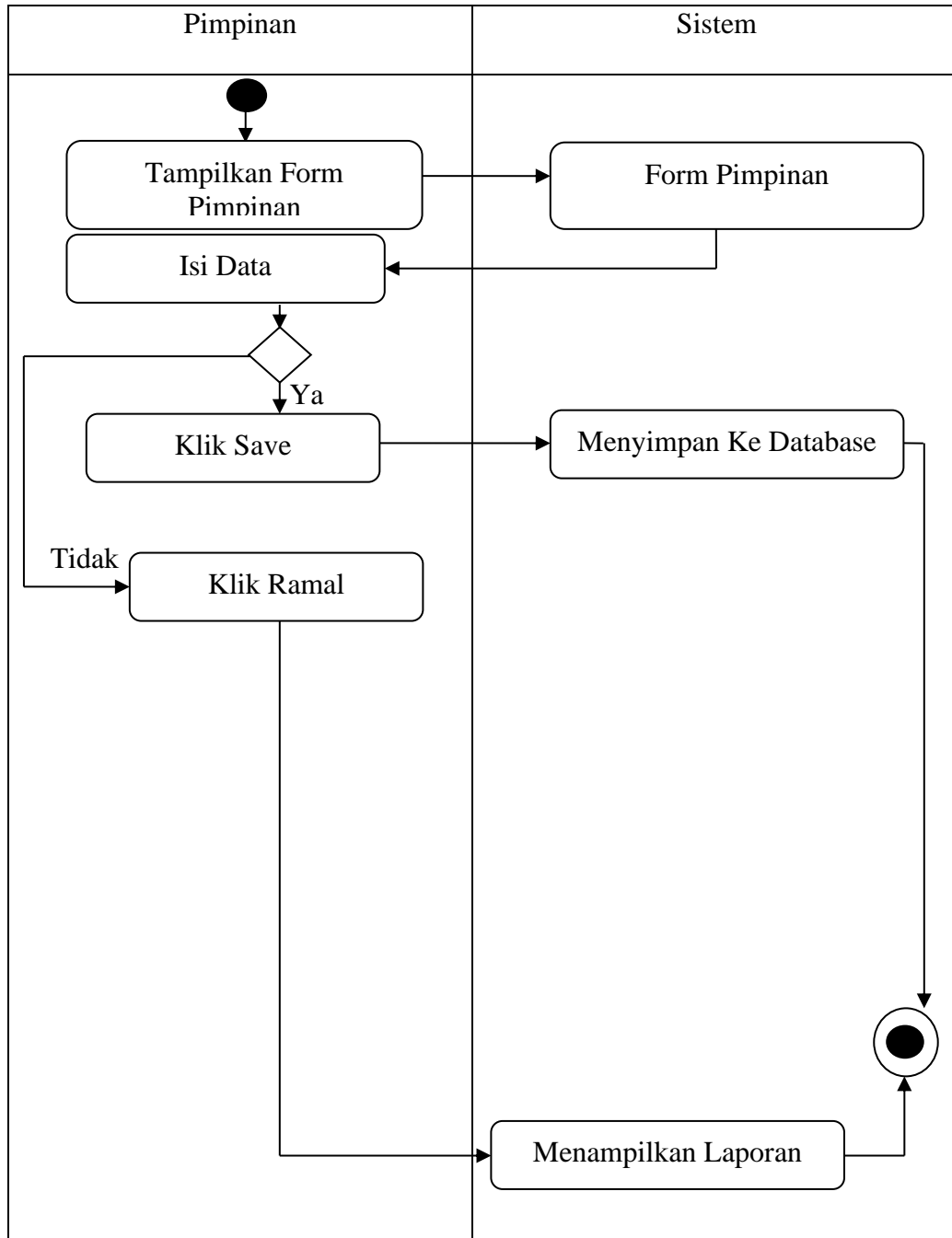
Gambar III.9 merupakan *Activity Diagram Form Peramalan* dari Implementasi Metode Seasonal Autoregressive Integrated Moving Average (SARIMA) .



Gambar III.9. Activity Diagram Form Peramalan

III.3.3.2. Activity Diagram Bagian Pimpinan

Activity Diagram Implementasi Metode Seasonal Autoregressive Integrated Moving Average (SARIMA) pada bagian pimpinan dapat di lihat sebagai berikut :



Gambar III.10. Activity Diagram Form Pimpinan

III.3.4. Sequence Diagram

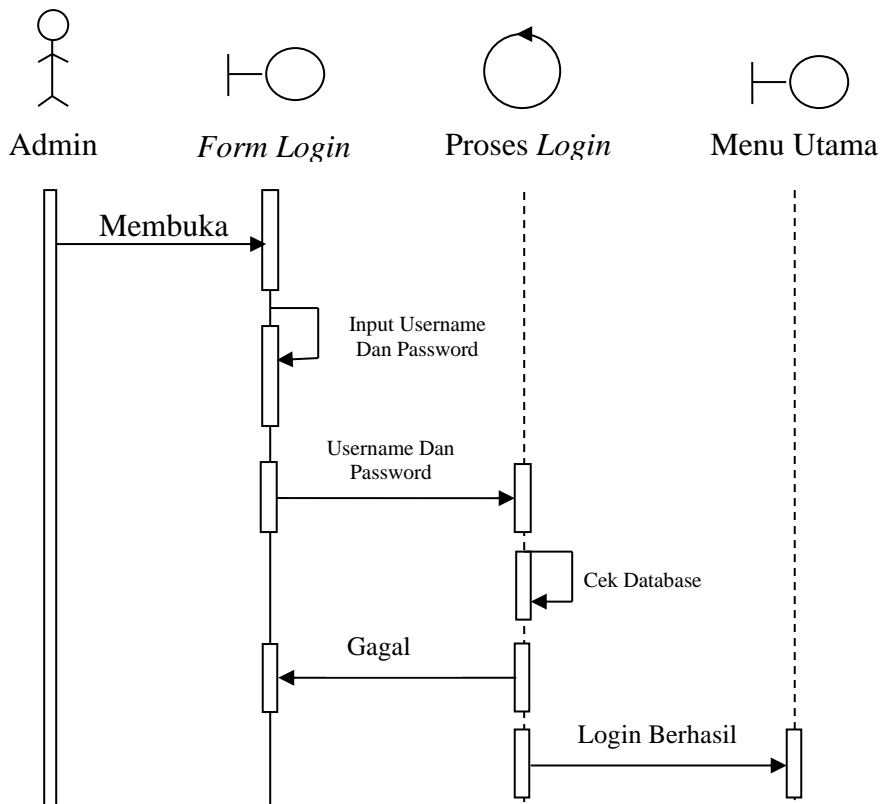
Sequence Diagram Implementasi Metode Seasonal Autoregressive Integrated Moving Average (SARIMA) dapat di lihat sebagai berikut :

III.3.4.1. *Sequence Diagram* Bagian Admin

Sequence Diagram Implementasi Metode Seasonal Autoregressive Integrated Moving Average (SARIMA) bagian admin dapat di lihat sebagai berikut :

1. *Sequence Diagram* Form Login

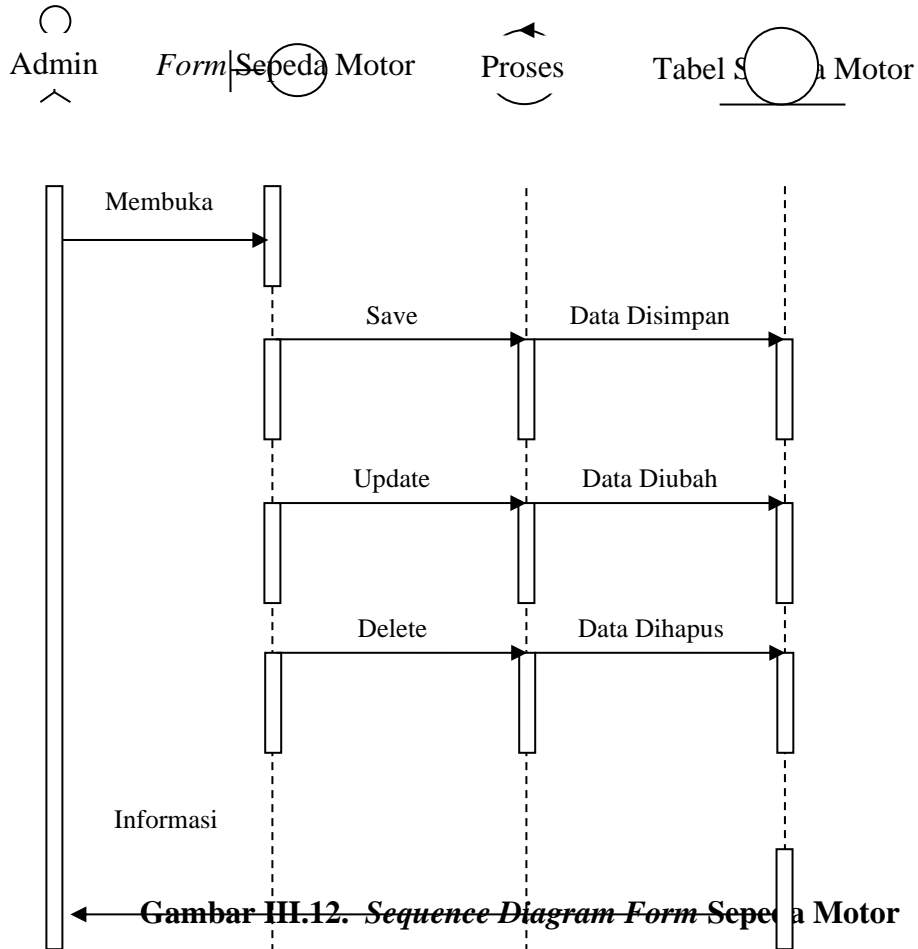
Gambar III.11 merupakan *Sequence Diagram* Form Login Implementasi Metode Seasonal Autoregressive Integrated Moving Average (SARIMA) .



Gambar III.11. *Sequence Diagram* Login

2. *Sequence Diagram* Form Sepeda Motor

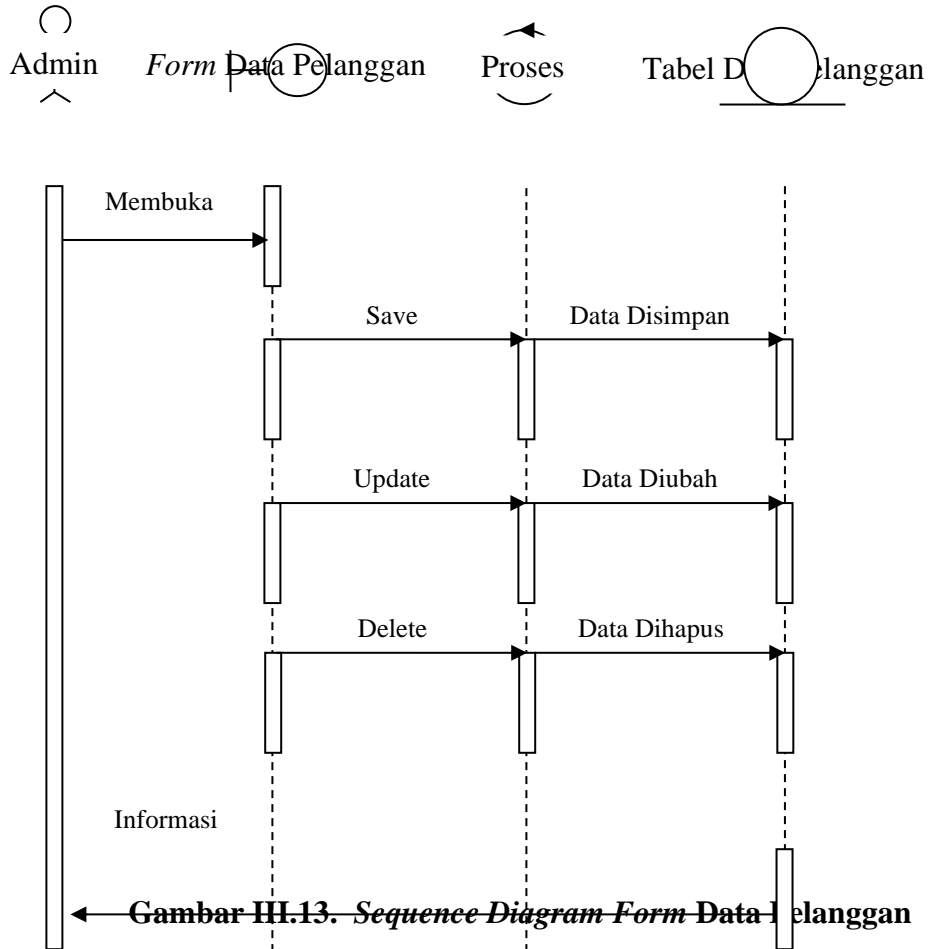
Gambar III.12 merupakan *Sequence Diagram Form Sepeda Motor* Implementasi Metode Seasonal Autoregressive Integrated Moving Average (SARIMA).



Gambar III.12. Sequence Diagram Form Sepeda Motor

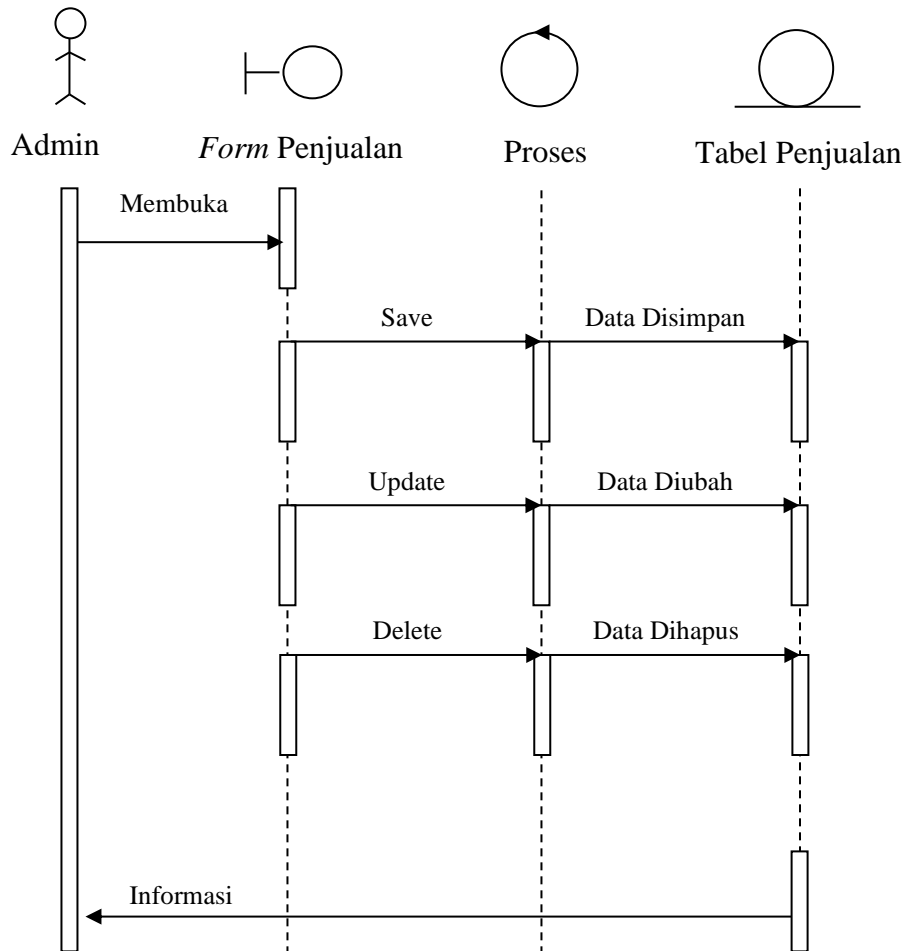
3. Sequence Diagram Form Data Pelanggan

Gambar III.13 merupakan *Sequence Diagram Form Data Pelanggan* Implementasi Metode Seasonal Autoregressive Integrated Moving Average (SARIMA).



4. Sequence Diagram Form Data Penjualan

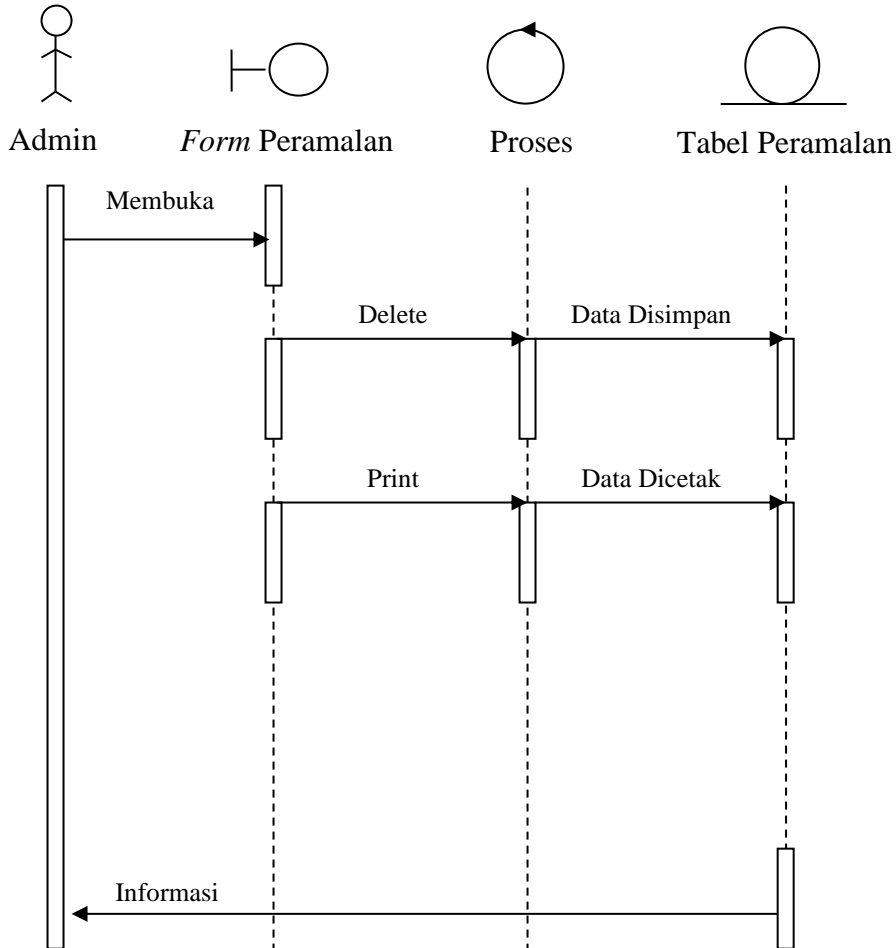
Gambar III.14 merupakan *Sequence Diagram Form Penjualan* Implementasi Metode Seasonal Autoregressive Integrated Moving Average (SARIMA) .



Gambar III.14. *Sequence Diagram Form Penjualan*

5. *Sequence Diagram Form Peramalan*

Gambar III.15 merupakan *Sequence Diagram Form Peramalan* Implementasi Metode Seasonal Autoregressive Integrated Moving Average (SARIMA).

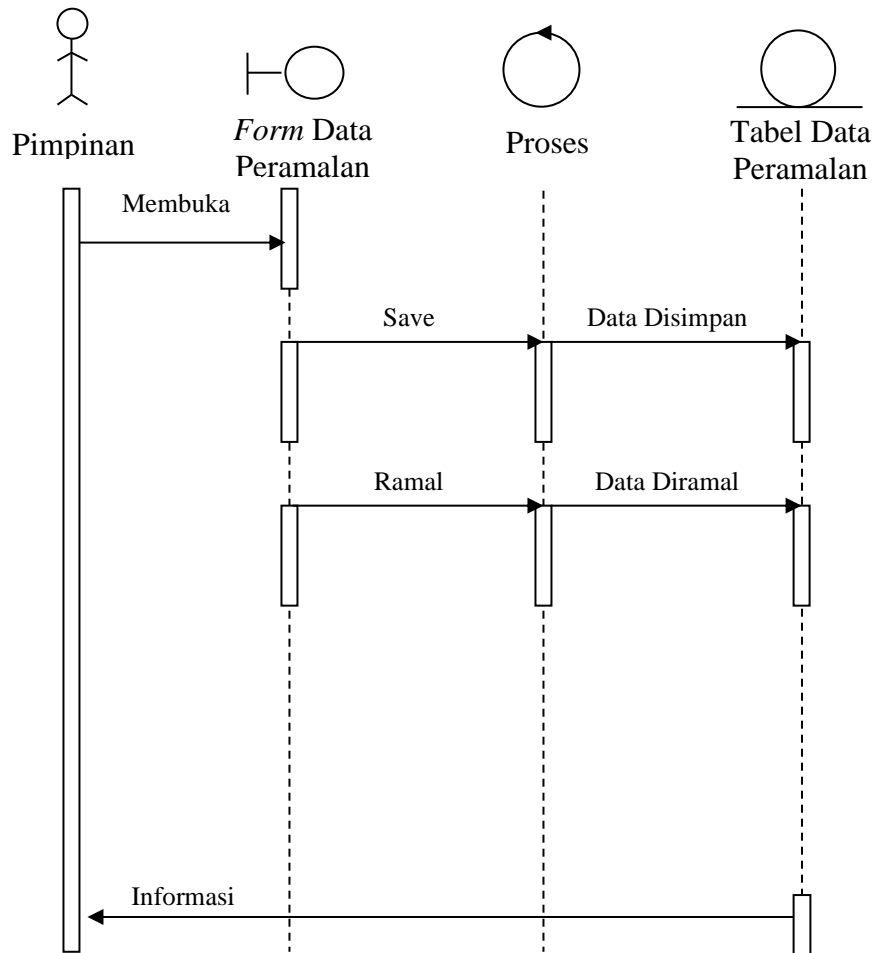


Gambar III.15. *Sequence Diagram Form Peramalan*

III.3.4.2. Sequence Diagram Bagian Pimpinan

Sequence Diagram Implementasi Metode Seasonal Autoregressive Integrated Moving

Average (SARIMA) bagian pimpinan dapat di lihat sebagai berikut :



Gambar III.16. Sequence Diagram Form Pimpinan

III.3.5. Desain Database

Desain tabel-tabel dari *database* yang terdapat pada Implementasi Metode *Seasonal Autoregressive Integrated Moving Average* (SARIMA) dimulai dari normalisasi kemudian isi desain *database*.

III.3.5.1. Normalisasi

Normalisasi digunakan untuk menghindari duplikasi terhadap tabel dalam basis data dan yang masih memiliki beberapa ketidakwajaran sehingga menghasilkan tabel yang lebih sederhana.

1. Bentuk Tidak Normal

Normalisasi dalam bentuk tidak normal dari data peramalan pada Implementasi Metode Seasonal Autoregressive Integrated Moving Average (SARIMA) dapat di lihat pada Tabel III.6.

Tabel III.6. Data Peramalan Bentuk Tidak Normal

Id Peramalan	Id Sepeda Motor	Bulan	Tahun	Jumlah Peramalan

2. Bentuk Normal Pertama (1NF)

Normalisasi dalam bentuk normal pertama dari data peramalan pada Implementasi Metode Seasonal Autoregressive Integrated Moving Average (SARIMA) dapat di lihat pada Tabel III.7.

Tabel III.7. Data Peramalan Bentuk Normal Pertama

Id Peramalan	Id Sepeda Motor	Bulan	Tahun	Jumlah Peramalan

Id Penjualan	Bulan	Tahun	Id Sepeda Motor	Jumlah Penjualan

3. Bentuk Normal Kedua (2NF)

Normalisasi dalam bentuk normal kedua dari data peramalan pada Implementasi Metode Seasonal Autoregressive Integrated Moving Average (SARIMA) dapat di lihat pada Tabel III.8.

Tabel III.8. Data Peramalan Bentuk Normal Kedua

Id Peramalan	Id Sepeda Motor	Bulan	Tahun	Jumlah Peramalan

Id Penjualan	Bulan	Tahun	Id Sepeda Motor	Jumlah Penjualan

Id Sepeda Motor	Jenis Sepeda Motor	Nama Sepeda Motor	Warna	Tahun

4. Bentuk Normal Ketiga (3NF)

Normalisasi dalam bentuk normal ketiga dari data peramalan pada Implementasi Metode Seasonal Autoregressive Integrated Moving Average (SARIMA) dapat di lihat pada Tabel III.9.

Tabel III.9. Data Peramalan Bentuk Normal Ketiga

Id Peramalan	Id Sepeda Motor	Bulan	Tahun	Jumlah Peramalan

Id Penjualan	Bulan	Tahun	Id Sepeda Motor	Jumlah Penjualan

Id Sepeda Motor	Jenis Sepeda Motor	Nama Sepeda Motor	Warna	Tahun

No KTP	Nama	No Telp	Alamat	No Faktur	Pembelian	Jumlah

III.3.5.2. Desain Tabel

Berikut ini adalah desain tabel dari Implementasi Metode Seasonal Autoregressive Integrated Moving Average (SARIMA) :

1. Desain Tabel Data Login

Pada Tabel III.10 merupakan desain tabel Data Login pada Implementasi Metode Seasonal Autoregressive Integrated Moving Average (SARIMA).

Nama Database : Peramalan

Nama Tabel : Data_Login

Primary Key : Id_Login

Tabel III.10. Desain Tabel Data Login

Nama Field	Type Data	Ukuran	Keterangan
Id_Login	Int	-	Id Pencarian
Sandi	Varchar	200	Sandi Admin

2. Desain
Tabel

Data Sepeda Motor

Pada Tabel III.11 merupakan desain tabel Data Sepeda Motor pada Implementasi Metode Seasonal Autoregressive Integrated Moving Average (SARIMA).

Nama Database : Peramalan

Nama Tabel : Sepeda_Motor

Primary Key : Id_Sepeda_Motor

Tabel III.11. Desain Tabel Data Sepeda Motor

Nama Field	Type Data	Ukuran	Keterangan
Id_Sepeda_Motor	Int	-	Id Pencarian
Jenis_Sepeda_Motor	Varchar	20	Jenis Sepeda Motor
Nama_Sepeda_Motor	Varchar	50	Nama Sepeda Motor
Warna	Varchar	20	Warna Sepeda Motor

Tahun	Varchar	10	Tahun Pembuatan
-------	---------	----	-----------------

3. Desain Tabel Data Pelanggan

Pada Tabel III.11 merupakan desain 35able Data Pelanggan pada Implementasi Metode Seasonal Autoregressive Integrated Moving Average (SARIMA).

Nama Database : Peramalan

Nama Tabel : Pelanggan

Primary Key : No_KTP

Tabel III.12. Desain Tabel Data Pelanggan

Nama Field	Type Data	Ukuran	Keterangan
No_KTP	Varchar	30	Nomor KTP
Nama	Varchar	50	Nama Pelanggan
No_Telp	Varchar	20	Nomor Telepon
Alamat	Text	-	Alamat Pelanggan
No_Faktur	Varchar	30	Nomor Faktur
Pembelian	Varchar	500	Pembelian Motor
Jumlah	Varchar	20	Jumlah Pembelian

4.Desain
Tabel
Data

Penjualan

Pada Tabel III.13 merupakan desain tabel Data Penjualan pada Implementasi Metode Seasonal Autoregressive Integrated Moving Average (SARIMA) .

Nama Database : Sarima

Nama Tabel : Penjualan

Primary Key : Id_Penjualan

Tabel III.13. Tabel Data Penjualan

Nama Field	Type Data	Ukuran	Keterangan
Id_Penjualan	Int	-	Id Pencarian
Bulan	Varchar	20	Periode Bulan
Tahun	Varchar	10	Periode Tahun
Id_Sepeda_Motor	Varchar	10	Id Pencarian
Jumlah	Varchar	10	Jumlah Penjualan

5.Desain
Tabel
Ramal

Pada Tabel III.14 merupakan desain tabel Ramal pada Implementasi Metode Seasonal Autoregressive Integrated Moving Average (SARIMA).

Nama Database : Peramalan

Nama Tabel : Ramal

Primary Key : Id_Peramalan

Tabel III.14. Tabel Peramalan

Nama Field	Tipe Data	Ukuran	Keterangan
Id_Peramalan	Int	-	Id Pencarian
Id_Sepeda_Motor	Varchar	10	Id Pencarian
Bulan	Varchar	20	Periode Bulan
Tahun	Varchar	20	Periode Tahun
Jumlah	Varchar	20	Jumlah Penjualan
Bulan_Ramal	Varchar	20	Bulan Ramal
Tahun_Ramal	Varchar	20	Tahun Ramal
Jumlah_Ramal	Varchar	20	Jumlah Ramal
Selisih	Varchar	20	Selisih Ramal

III.3.6.
Desain
User
Interface
User

Interface merupakan tampilan masukan yang penulis rancang guna lebih memudahkan dalam *entry* data. *Entry* data yang dirancang akan lebih mudah dan cepat dan meminimalisir kesalahan penulisan dan memudahkan perubahan. Perancangan tampilan yang dirancang adalah sebagai berikut :

III.3.6.1. Desain User Interface Bagian Admin

User Interface bagian admin pada Implementasi Metode Seasonal Autoregressive Integrated Moving Average (SARIMA) adalah sebagai berikut :

1. Rancangan *Form Login*

Rancangan *form login* berfungsi untuk verifikasi pengguna yang berhak menggunakan sistem. Adapun rancangan *form login* dapat dilihat pada gambar III.17. sebagai berikut :

<p>PERAMALAN SARIMA Jumlah Penjualan Sepeda Motor</p>
Empty space for the form content

Username

Password

Gambar III.17. Rancangan *Form Login*

2. Rancangan *Form Menu*

Rancangan *Form Menu* berfungsi untuk menampilkan seluruh isi *form-form* yang terdapat di dalam aplikasi. Adapun rancangan *form menu* dapat dilihat pada gambar III.18. sebagai berikut :

PERAMALAN SARIMA Jumlah Penjualan Sepeda Motor
Menu Sepeda Motor Pelanggan Penjualan Peramalan Exit

Gambar III.18. Rancangan *Form* Menu

3. Rancangan *Form* Data Sepeda Motor

Rancangan *Form* Data Sepeda Motor berfungsi untuk menampilkan seluruh isi *form-form* yang terdapat di dalam aplikasi. Adapun rancangan *form* data sepeda motor dapat dilihat pada gambar III.19. sebagai berikut :

PERAMALAN SARIMA Jumlah Penjualan Sepeda Motor				
Menu Sepeda Motor Pelanggan Penjualan Peramalan Exit				
Sepeda Motor :				
Jenis Sepeda Motor	Nama Sepeda Motor	Nama	Tahun	AKSI

Gambar III.19. Rancangan *Form* Data Sepeda Motor

4. Rancangan *Form* Data Pelanggan

Rancangan *Form* Data Pelanggan berfungsi untuk menampilkan seluruh isi *form-form* yang terdapat di dalam aplikasi. Adapun rancangan *form* data pelanggan dapat dilihat pada gambar III.20. sebagai berikut :

PERAMALAN SARIMA Jumlah Penjualan Sepeda Motor							
Menu Sepeda Motor Pelanggan Penjualan Peramalan Exit							
Pelanggan :							
No KTP	Nama	No Telp	Alamat	No.Faktur	Pembelian	Jumlah	AKSI

Gambar III.20. Rancangan *Form* Data Pelanggan

5. Rancangan *Form* Data Penjualan

Rancangan *Form* Data Penjualan berfungsi untuk menampilkan seluruh isi *form-form* yang terdapat di dalam aplikasi. Adapun rancangan *form* data penjualan dapat dilihat pada gambar

III.21. sebagai berikut :

PERAMALAN SARIMA Jumlah Penjualan Sepeda Motor					
Menu Sepeda Motor Pelanggan Penjualan Peramalan Exit					
Penjualan					
Id Penjualan	Bulan	Tahun	Jumlah	Id Sepeda Motor	AKSI

Gambar III.21. Rancangan *Form* Data Penjualan

6. Rancangan *Form* Peramalan

Rancangan *Form* Peramalan berfungsi untuk menampilkan seluruh isi *form-form* yang terdapat di dalam aplikasi. Adapun rancangan *form* peramalan dapat dilihat pada gambar III.22.

sebagai berikut :

PERAMALAN SARIMA Jumlah Penjualan Sepeda Motor					
Menu Sepeda Motor Pelangga Penjualan Peramalan Exit					
Peramalan					
Id Peramalan	Id Sepeda Motor	Bulan	Tahun	Jumlah Peramalan	AKSI

Gambar III.22. Rancangan *Form* Peramalan

III.3.6.2. Desain *User Interface* Bagian Pimpinan

User Interface bagian pimpinan pada aplikasi peramalan jumlah pengguna kasus narkotika adalah sebagai berikut :

PERAMALAN SARIMA Jumlah Penjualan Sepeda Motor					
					Exit
Peramalan					
Id Peramalan	Id Sepeda Motor	Bulan	Tahun	Jumlah Peramalan	AKSI

Gambar III.23. Rancangan *Form* Peramalan Pimpinan