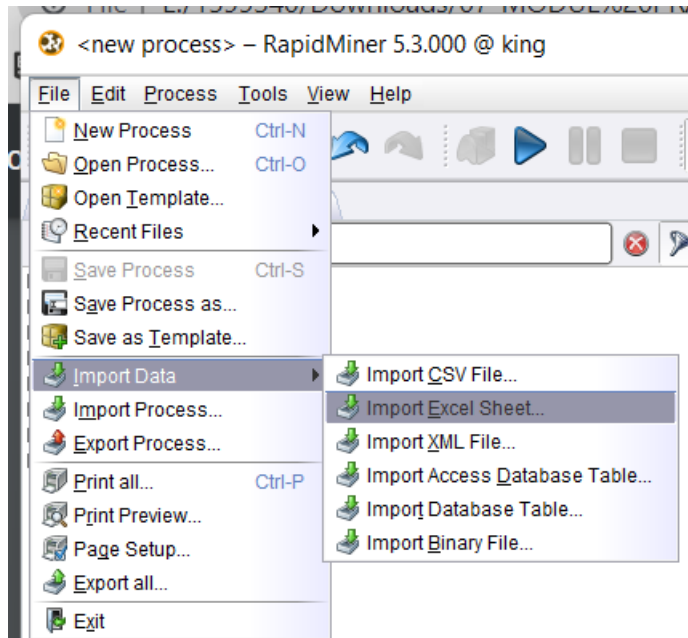
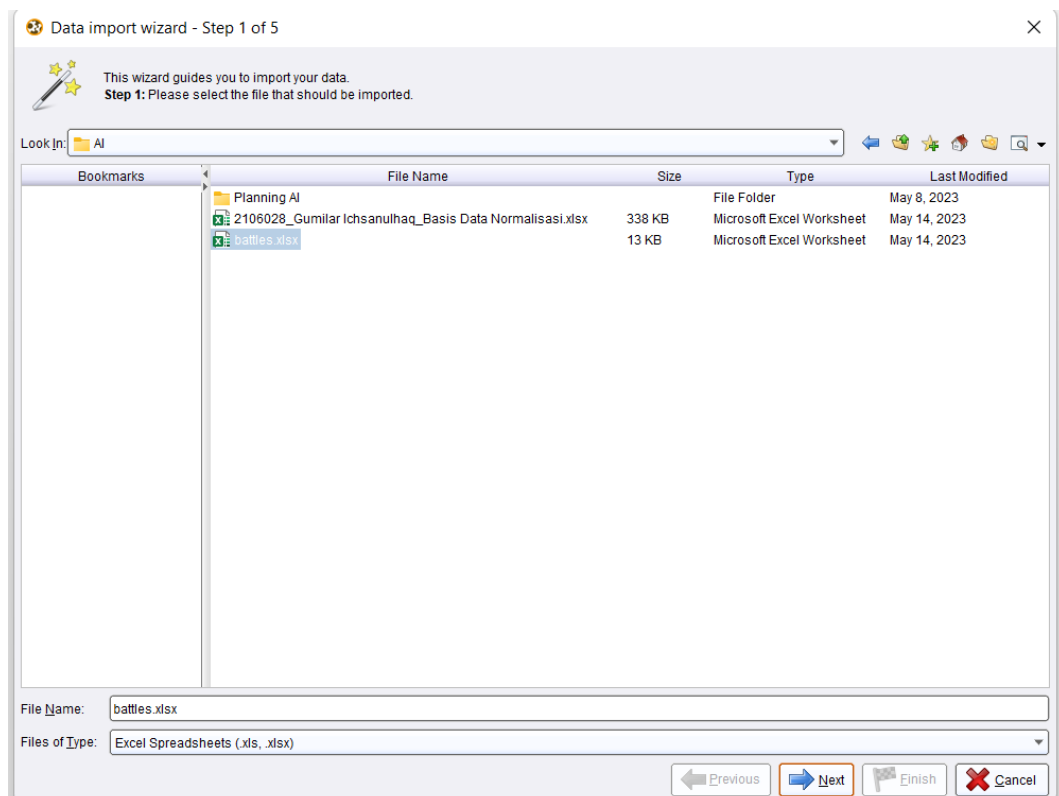


Menggunakan Rapid Miner

Klik menu File, lalu klik sub menu Import Data disitu ada beberapa pilihan untuk mengimport data berdasarkan ekstensi dari data. Pilih Import csv.



Selanjutnya, pilih dataset yang ingin diimpor dengan menavigasi ke folder lokasi file dataset tersebut. Lalu klik Next.



Selanjutnya mengidentifikasi type data dari atribut dataset yang diimpor apakah itu polynomial, binominal, integer dan sebagainya. Setelah itu klik Next.

Data import wizard - Step 4 of 5

This wizard guides you to import your data.
Step 4: RapidMiner uses strongly typed attributes. In this step, you can define the data types of your attributes. Furthermore, RapidMiner assigns roles to the attributes, defining what they can be used by the individual operators. These roles can be also defined here. Finally, you can rename attributes or deselect them entirely.

☒ Preview uses only first 100 rows. Date format:

<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
name	year	battle_num	attacker_kin	defender_kin	attacker_1	attacker_2	attacker_3	attacker_4	defender_1	defender_2	defender_3	defender_4
polyno...	integer	integer	polyno...	polyno...	polyno...	polyno...	binomi...	binomi...	polyno...	binomi...	attribut...	attribut...
attribute	attribute	attribute	attribute	attribute	attribute	attribute	attribute	attribute	attribute	attribute	attribute	attribute
Battle of the	298	1	Joffrey/Tomr	Robb Stark	Lannister	?	?	?	Tully	?	?	?
Battle at the	298	2	Joffrey/Tomr	Robb Stark	Lannister	?	?	?	Baratheon	?	?	?
Battle of Riv	298	3	Joffrey/Tomr	Robb Stark	Lannister	?	?	?	Tully	?	?	?
Battle of the	298	4	Robb Stark	Joffrey/Tomr	Stark	?	?	?	Lannister	?	?	?
Battle of the	298	5	Robb Stark	Joffrey/Tomr	Stark	Tully	?	?	Lannister	?	?	?
Battle of the	298	6	Robb Stark	Joffrey/Tomr	Stark	Tully	?	?	Lannister	?	?	?
Sack of Darr	298	7	Joffrey/Tomr	Robb Stark	Lannister	?	?	?	Darry	?	?	?
Battle of Moa	299	8	Balon/Euron	Robb Stark	Greyjoy	?	?	?	Stark	?	?	?
Battle of Dee	299	9	Balon/Euron	Robb Stark	Greyjoy	?	?	?	Stark	?	?	?
Battle of the	299	10	Balon/Euron	Robb Stark	Greyjoy	?	?	?	Stark	?	?	?
Battle of Torr	299	11	Robb Stark	Balon/Euron	Stark	?	?	?	Greyjoy	?	?	?
Battle of Win	299	12	Balon/Euron	Robb Stark	Greyjoy	?	?	?	Stark	?	?	?
Sack of Torr	299	13	Balon/Euron	Balon/Euron	Greyjoy	?	?	?	Stark	?	?	?
Sack of Wint	299	14	Joffrey/Tomr	Robb Stark	Bolton	Greyjoy	?	?	Stark	?	?	?
Battle of the	299	15	Robb Stark	Joffrey/Tomr	Stark	Tully	?	?	Lannister	?	?	?

0 errors. ☒ Ignore errors ☐ Show only errors

Row, Column	Error	Original value	Message
-------------	-------	----------------	---------

Terakhir simpan dataset yang diimpor pada local repository dalam file data serta beri nama dataset tersebut. Lalu klik Finish.

Data import wizard - Step 5 of 5

This wizard guides you to import your data.
Step 5: Please specify a repository location.

☒ Local Repository (gumit)

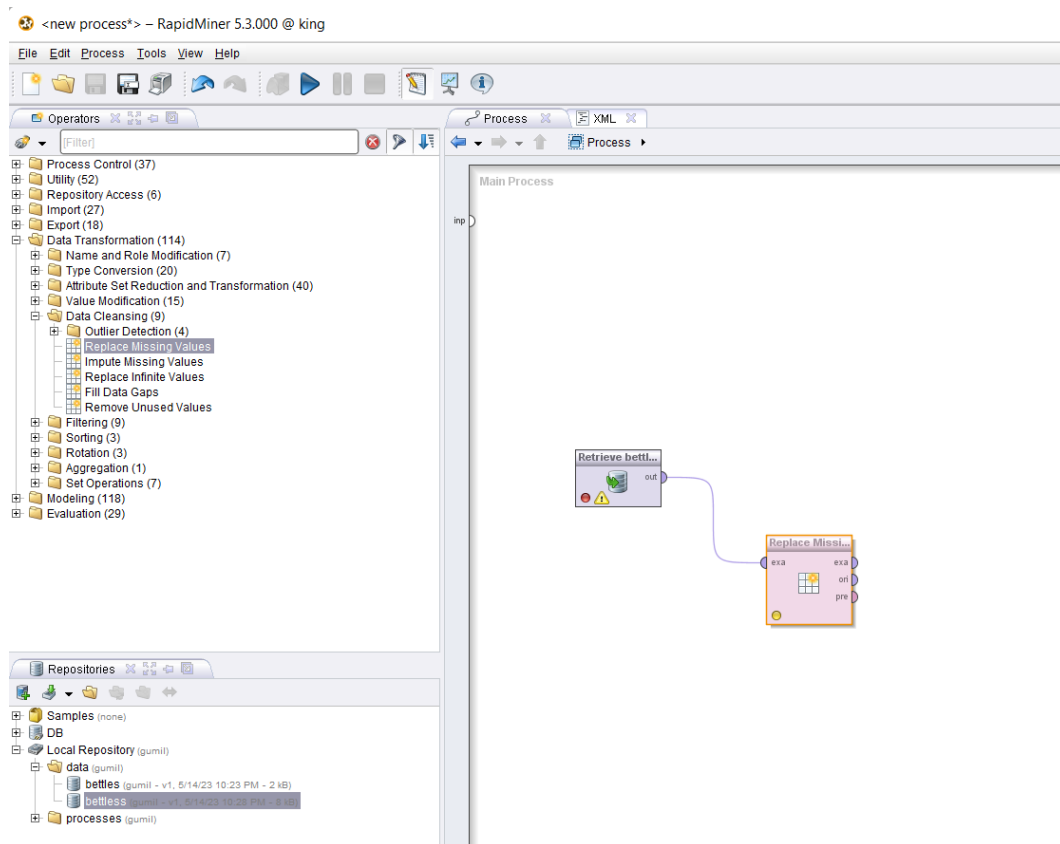
☐ Data (gumit)

☐ processes (gumit)

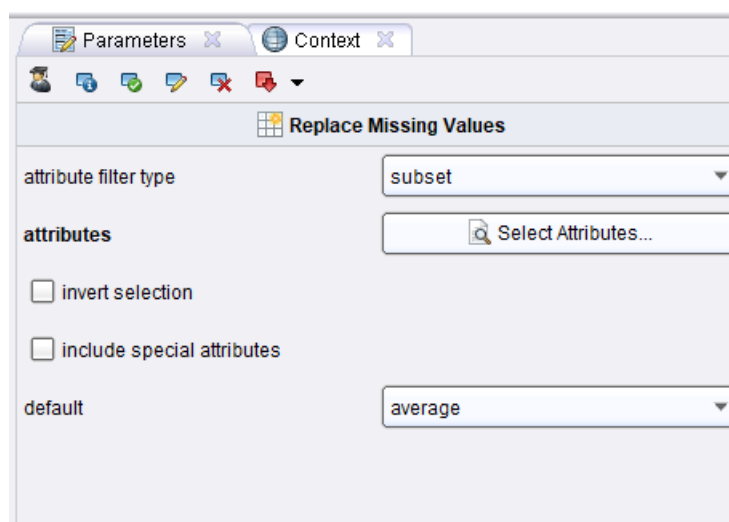
Name:

Location: /Local Repository/data/betles

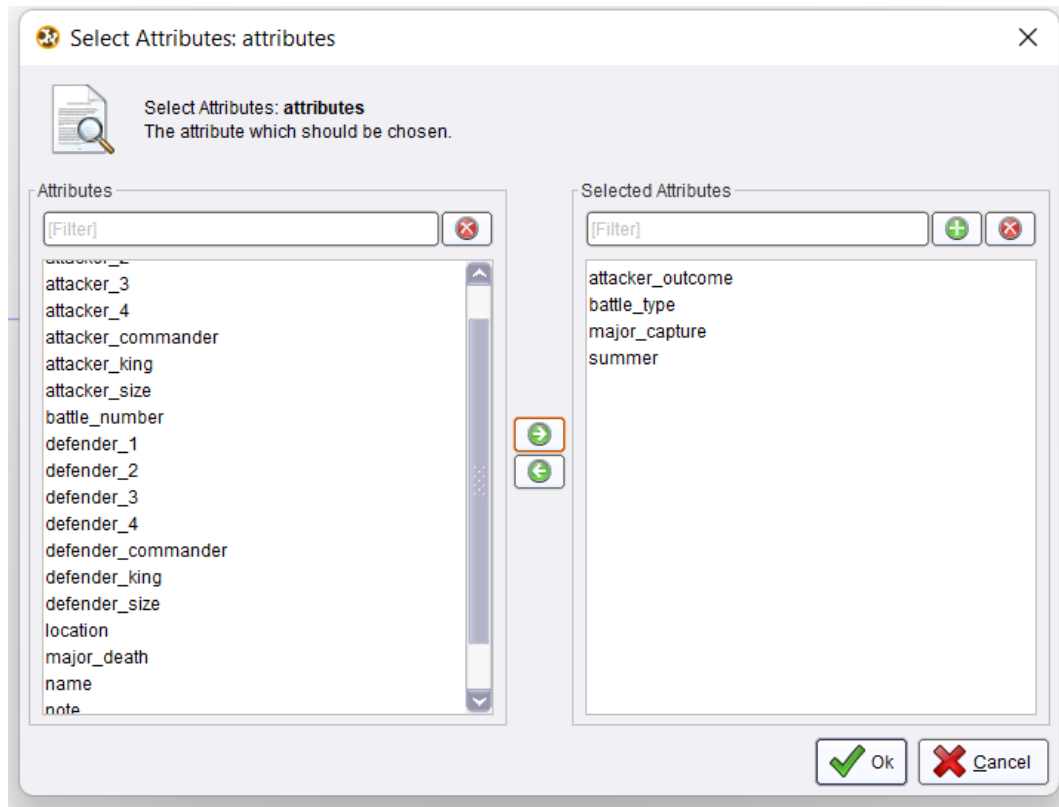
Drag and drop operator Replace Missing Values dari panel operator di sebelah kiri ke proses di workspace.



Tentukan atribut mana yang ingin dibersihkan dari missing value, klik kolom attribute filter type di bagian parameters. Lalu pilih subset karena terdapat beberapa atribut yang akan dibersihkan.



Setelah itu klik Select Attributes untuk memilih atribut. Lalu klik Ok

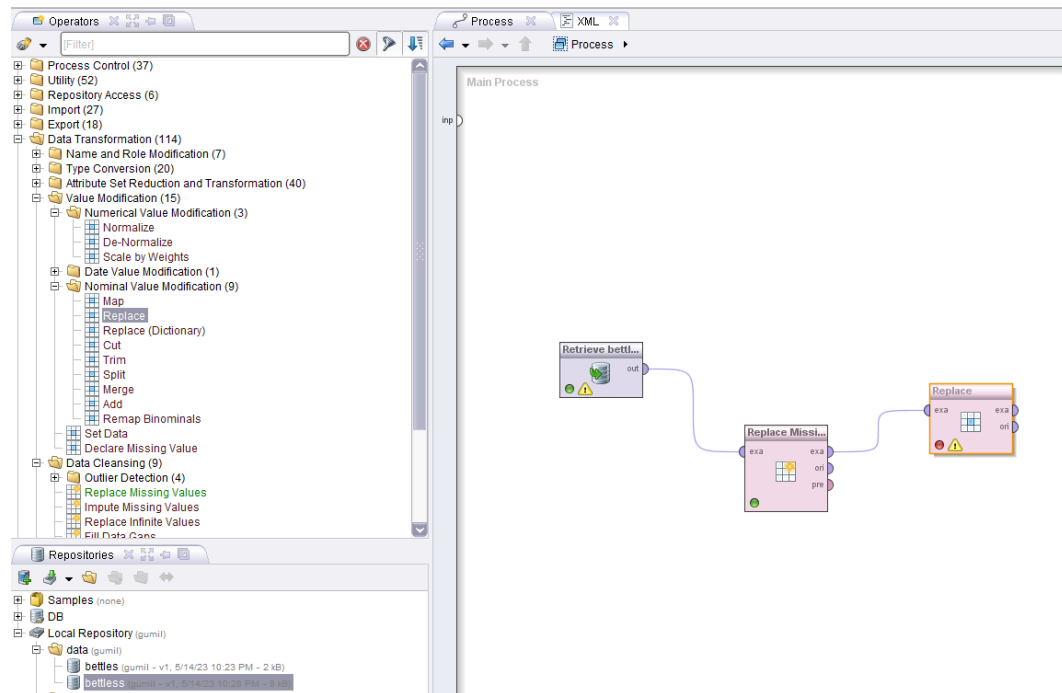


Setelah memilih atribut yang akan diproses lalu klik icon run untuk menjalankan proses pembersihan missing value. Untuk melihat hasilnya klik icon results perspective.

Results

Row No.	Name	Year	Battle Num	Attacker	Defender	Battle Type	Major Capture	Summer	Location
1	Battle of the 298	1	Joffrey/Tomr	Robb Stark	Lannister	?	?	?	Golden Tooth
2	Battle of the 298	2	Joffrey/Tomr	Robb Stark	Lannister	?	?	?	Mummers F
3	Battle of the 298	3	Joffrey/Tomr	Robb Stark	Lannister	?	?	?	Raven
4	Battle of the 298	4	Robb Stark	Joffrey/Tomr	Stark	?	?	?	Green Fork
5	Battle of the 298	5	Robb Stark	Joffrey/Tomr	Stark	?	?	?	Whispering
6	Battle of the 298	6	Robb Stark	Joffrey/Tomr	Stark	?	?	?	Raven
7	Battle of the 298	7	Joffrey/Tomr	Robb Stark	Lannister	?	?	?	Cherry
8	Battle of the 299	8	Baloon/Euron	Robb Stark	Greyjoy	?	?	?	Meat Catin
9	Battle of the 299	9	Baloon/Euron	Robb Stark	Greyjoy	?	?	?	Deepwood
10	Battle of the 299	10	Baloon/Euron	Robb Stark	Greyjoy	?	?	?	Ston
11	Battle of the 299	11	Robb Stark	Baloon/Euron	Stark	?	?	?	Tonhens
12	Battle of the 299	12	Baloon/Euron	Robb Stark	Greyjoy	?	?	?	Winterfield
13	Battle of the 299	13	Baloon/Euron	Robb Stark	Greyjoy	?	?	?	Tonhens
14	Battle of the 299	14	Joffrey/Tomr	Robb Stark	Greyjoy	?	?	?	Winterfield
15	Battle of the 299	15	Robb Stark	Joffrey/Tomr	Stark	?	?	?	Ocross
16	Battle of the 299	16	Stannis Bar	Renly Barath	Baratheon	?	?	?	Storm's End
17	Battle of the 299	17	Joffrey/Tomr	Robb Stark	Lannister	?	?	?	Red Fork
18	Battle of the 299	18	Robb Stark	Joffrey/Tomr	Stark	?	?	?	Hamberth
19	Battle of the 299	19	Robb Stark	Joffrey/Tomr	Stark	?	?	?	Crag
20	Battle of the 299	20	Stannis Bar	Joffrey/Tomr	Baratheon	?	?	?	King's Land
21	Battle of the 299	21	Robb Stark	Joffrey/Tomr	Stark	?	?	?	Camp
22	Battle of the 299	22	Robb Stark	Joffrey/Tomr	Stark	?	?	?	Duskenade
23	Battle of the 299	23	?	Brotherhood	?	?	?	?	?
24	Battle of the 299	24	Joffrey/Tomr	Robb Stark	Lannister	?	?	?	Robt Ford
25	Battle of the 299	25	Joffrey/Tomr	Robb Stark	Lannister	?	?	?	Hamberth
26	Battle of the 299	26	Joffrey/Tomr	Robb Stark	Greyjoy	?	?	?	The Twins
27	Battle of the 299	27	Robb Stark	Joffrey/Tomr	Stark	?	?	?	Seagard
28	Battle of the 299	28	Stannis Bar	Mance Rayd	Free Folk	?	?	?	Castle Black
29	Battle of the 299	29	Joffrey/Tomr	Robb Stark	Lannister	?	?	?	Meat Catin
30	Battle of the 299	30	?	Brave Comp	?	?	?	?	Salpans
31	Battle of the 299	31	Stannis Bar	Baloon/Euron	Baratheon	?	?	?	Deepwood
32	Battle of the 299	32	Baloon/Euron	Joffrey/Tomr	Greyjoy	?	?	?	Shield Island
33	Battle of the 299	33	Baloon/Euron	Joffrey/Tomr	Greyjoy	?	?	?	Ryansport
34	Battle of the 299	34	Joffrey/Tomr	Stannis Bar	Baratheon	?	?	?	Storm's End
35	Battle of the 299	35	Joffrey/Tomr	Stannis Bar	Baratheon	?	?	?	Dragonstone
36	Battle of the 299	36	Joffrey/Tomr	Robb Stark	Lannister	?	?	?	Raven
37	Battle of the 299	37	Joffrey/Tomr	Robb Stark	Blackwood	?	?	?	Raven
38	Battle of the 299	38	Stannis Bar	Joffrey/Tomr	Baratheon	?	?	?	Winterfield

Setelah membersihkan missing value, selanjutnya yaitu mengubah nilai yang tidak konsisten pada atribut dengan menambahkan operator replace



Tentukan atribut mana yang ingin diubah nilainya, klik kolom attribute filter type di bagian parameters. Lalu pilih single.

The screenshot shows the 'Parameters' window for the 'Replace' operator. The 'attribute filter type' is set to 'single'. The 'attribute' field is empty. The 'invert selection' and 'include special attributes' checkboxes are unchecked. The 'replace what' and 'replace by' fields are empty. A search icon is visible next to the 'replace what' field.

Replace	
attribute filter type	single
attribute	
<input type="checkbox"/> invert selection	
<input type="checkbox"/> include special attributes	
replace what	
replace by	

Klik kolom attribute, pilih atribut yang akan diproses, Ubah nilai atribut pada kolom replace what dan replace by

Setelah memilih atribut yang akan diproses lalu klik icon run untuk menjalankan proses mengubah nilai yang tidak konsisten. Untuk melihat hasilnya klik icon results prespective

	year	battle_num	attacker_kingdefender_ki	attacker_1	attacker_2	attacker_3	attacker_4	defender_1	defender_2	defender_3	defender_4	attacker_wi	battle_type	major_death	major_capt	attacker_size	defender_size	attacker_co	defender_co	summer	location	region	note	
he	298	1	Joffrey/Tomr	Robb Stark	Lannister	?	?	?	Tully	?	?	?	win	ambush	1	0	15000	4000	Jaime Lann	Clement P	1	Golden To	The Wester	?
he	298	2	Joffrey/Tomr	Robb Stark	Lannister	?	?	?	Baratheon	?	?	?	win	ambush	1	0	?	120	Gregor Cleg	Beric Dond	1	Mummers' F	The Riverlan	?
he	298	3	Joffrey/Tomr	Robb Stark	Lannister	?	?	?	Tully	?	?	?	win	pitched battl	0	1	15000	10000	Jaime Lann	Edmure Tull	1	Riverun	The Riverlan	?
he	298	4	Robb Stark	Joffrey/Tomr	Stark	?	?	?	Lannister	?	?	?	loss	pitched battl	1	1	18000	20000	Roose Bolto	Twin Lann	1	Green Fork	The Riverlan	?
he	298	5	Robb Stark	Joffrey/Tomr	Stark	Tully	?	?	Lannister	?	?	?	win	ambush	1	1	1875	6000	Robb Stark	Jaime Lann	1	Whispering	The Riverlan	?
he	298	6	Robb Stark	Joffrey/Tomr	Stark	Tully	?	?	Lannister	?	?	?	win	ambush	0	0	6000	12925	Robb Stark	Lord Andros	1	Riverun	The Riverlan	?
he	298	7	Joffrey/Tomr	Robb Stark	Lannister	?	?	?	Darry	?	?	?	win	pitched battl	0	0	?	?	Gregor Cleg	Lynan Darr	1	Darry	The Riverlan	?
he	299	8	Balon/Euron	Robb Stark	Greyjoy	?	?	?	Stark	?	?	?	win	pitched battl	0	0	?	?	Vidarron Gre	?	1	Moat Catin	The North	?
he	299	9	Balon/Euron	Robb Stark	Greyjoy	?	?	?	Stark	?	?	?	win	siege	0	0	1000	?	Asha Greyjo	?	1	Deepwood's	The North	?
he	299	10	Balon/Euron	Robb Stark	Greyjoy	?	?	?	Stark	?	?	?	win	ambush	0	0	264	?	Theon Greyj	?	1	Stony Shore	The North	Greyjoy's Wo
he	299	11	Robb Stark	Balon/Euron	Stark	?	?	?	Greyjoy	?	?	?	win	pitched battl	0	0	244	900	Rodrik Cass	Dagmer Cle	1	Tornham's Sc	The North	Greyjoy's tro
he	299	12	Balon/Euron	Robb Stark	Greyjoy	?	?	?	Stark	?	?	?	win	ambush	0	1	20	?	Theon Greyj	Brann Stark	1	Winterfell	The North	It isn't men
he	299	13	Balon/Euron	Balon/Euron	Greyjoy	?	?	?	Stark	?	?	?	win	siege	0	1	?	?	Cagney Cle	?	1	Tornham's Sc	The North	?
he	299	14	Joffrey/Tomr	Robb Stark	Bolton	Greyjoy	?	?	Stark	?	?	?	win	ambush	1	0	618	2000	Ramsay Sn	Rodrik Cass	1	Winterfell	The North	Since House
he	299	15	Robb Stark	Joffrey/Tomr	Stark	Tully	?	?	Lannister	?	?	?	win	ambush	1	1	6000	10000	Robb Stark	Stafford Lann	1	Ocross	The Wester	?
he	299	16	Stannis Bar	Ned's Bara	Baratheon	?	?	?	Baratheon	?	?	?	win	siege	1	0	6000	20000	Stannis Bar	Randy Bara	1	Storm's End	The Stormla	?
he	299	17	Joffrey/Tomr	Robb Stark	Lannister	?	?	?	Tully	?	?	?	loss	pitched battl	0	0	20000	10000	Twin Lann	Edmure Tull	1	Red Fork	The Riverlan	?
he	299	18	Robb Stark	Joffrey/Tomr	Stark	?	?	?	Lannister	?	?	?	win	ambush	1	0	100	100	Roose Bolto	Amory Lorch	1	Hammerhal	The Riverlan	?
he	299	19	Robb Stark	Joffrey/Tomr	Stark	?	?	?	Lannister	?	?	?	win	ambush	0	0	6000	?	Robb Stark	Rolph Spice	1	Crag	The Wester	?
he	299	20	Stannis Bar	Joffrey/Tomr	Baratheon	?	?	?	Lannister	?	?	?	loss	pitched battl	1	1	21000	7250	Stannis Bar	Tywin Lann	1	King's Land	The Crowns	?
he	299	21	Robb Stark	Joffrey/Tomr	Darry	?	?	?	Lannister	?	?	?	win	siege	0	0	?	?	Helman Tall	?	1	Darry	The Riverlan	?
he	299	22	Robb Stark	Joffrey/Tomr	Stark	?	?	?	Lannister	?	?	?	loss	pitched battl	1	0	3000	?	Robert Glov	Randyle Tach	1	Duskendale	The Crowns	?
he	299	23	?	?	Brotherhood	?	?	?	Brave Comp	?	?	?	win	pitched battl	0	0	?	?	?	?	1	?	The Riverlan	?
he	299	24	Stannis Bar	Joffrey/Tomr	Lannister	?	?	?	Stark	?	?	?	win	pitched battl	0	0	?	6000	Gregor Cleg	Roose Bolto	?	Ruby Ford	The Riverlan	?
he	299	25	Joffrey/Tomr	?	Lannister	?	?	?	Brave Comp	?	?	?	win	pitched battl	1	0	?	?	Gregor Cleg	Vargo Hoat	1	Hammerhal	The Riverlan	?
he	299	26	Joffrey/Tomr	Robb Stark	Frey	Bolton	?	?	Stark	?	?	?	win	ambush	1	1	3500	3500	Walder Frey	Robb Stark	1	The Twins	The Riverlan	This obsen
he	299	27	Robb Stark	Joffrey/Tomr	Frey	?	?	?	Mallister	?	?	?	win	siege	0	1	?	?	Walder Frey	Jason Malli	1	Seagard	The Riverlan	?
he	300	28	Stannis Bar	Mance Rayd	Free folk	Thenns	Giants	?	Night's Wat	Baratheon	?	?	loss	siege	1	1	100000	1240	Mance Rayd	Stannis Bar	0	Castle Black	Beyond the l	?
he	300	29	Joffrey/Tomr	Balon/Euron	Bolton	?	?	?	Greyjoy	?	?	?	win	siege	0	0	?	?	Ramsey Bol	?	0	Moat Catin	The North	?
he	300	30	?	?	Brave Comp	?	?	?	?	?	?	?	win	razing	0	0	?	?	Rorge	?	0	Salfgarn	The Riverlan	?
he	300	31	Stannis Bar	Balon/Euron	Baratheon	Karstark	Mormont	Glover	Greyjoy	?	?	?	win	pitched battl	0	0	4500	200	Stannis Bar	Asha Greyjo	0	Deepwood's	The North	?
he	300	32	Balon/Euron	Joffrey/Tomr	Greyjoy	?	?	?	Tyrell	?	?	?	win	pitched battl	0	0	?	?	Euron Greyj	?	0	Shield Islan	The Reach	?
he	300	33	Balon/Euron	Joffrey/Tomr	Greyjoy	?	?	?	Tyrell	?	?	?	win	razing	0	0	?	?	Euron Greyj	?	0	Ryansport	The Reach	?
he	300	34	Joffrey/Tomr	Stannis Bar	Baratheon	?	?	?	Baratheon	?	?	?	win	siege	0	0	?	200	Mace Tyrell	Gilbert Fann	0	Storm's End	The Stormla	?
he	300	35	Joffrey/Tomr	Stannis Bar	Baratheon	?	?	?	Baratheon	?	?	?	win	siege	0	0	2000	?	Loras Tyrell	Roland Stor	0	Dragonstone	The Stormla	?
he	300	36	Joffrey/Tomr	Robb Stark	Lannister	Frey	?	?	Tully	?	?	?	win	siege	0	0	3000	?	Davos Lann	Braynden Tull	0	Riverun	The Riverlan	?
he	300	37	Joffrey/Tomr	Robb Stark	Bracken	Lannister	?	?	Blackwood	?	?	?	win	siege	0	1	1500	?	Jonos Brack	Tylos Blacko	0	Ravenree	The Riverlan	?
he	300	38	Stannis Bar	Joffrey/Tomr	Baratheon	Karstark	Mormont	Glover	Bolton	Frey	?	?	?	?	?	?	5000	8000	Stannis Bar	Roose Bolto	0	Winterfell	The North	?

Menggunakan python

Berikut adalah kode program untuk mengimport dataset battles.csv

```
import pandas as pd

# Import dataset
dataset = pd.read_csv('battles.csv')

# Tampilkan 5 baris pertama dari dataset
print(dataset.head())
```

Berikut adalah kode program untuk melakukan preprocessing data

- Membersihkan missing value

```
# Cek jumlah missing values pada kolom
print(dataset[ 'attacker_outcome'].isna().sum())

# Mengganti missing values pada kolom dengan nilai baru
dataset[ 'attacker_outcome'].fillna('loss', inplace=True)

# Cek kembali jumlah missing values pada kolom
print(dataset[ 'attacker_outcome'].isna().sum())

# Cek jumlah missing values pada kolom
print(dataset[ 'major_capture'].isna().sum())

# Mengganti missing values pada kolom dengan nilai baru
dataset[ 'major_capture'].fillna('0', inplace=True)

# Cek kembali jumlah missing values pada kolom
print(dataset[ 'major_capture'].isna().sum())

# Cek jumlah missing values pada kolom
print(dataset[ 'summer'].isna().sum())

# Mengganti missing values pada kolom dengan nilai baru
dataset[ 'summer'].fillna('0', inplace=True)

# Cek kembali jumlah missing values pada kolom
print(dataset[ 'summer'].isna().sum())

# Cek jumlah missing values pada kolom
print(dataset[ 'battle_type'].isna().sum())

# Mengganti missing values pada kolom dengan nilai baru
dataset[ 'battle_type'].fillna('ambush', inplace=True)

# Cek kembali jumlah missing values pada kolom
print(dataset[ 'battle_type'].isna().sum())
```

Hasilnya

	name	year	battle_number	\
0	Battle of the Golden Tooth	298	1	
1	Battle at the Mummer's Ford	298	2	
2	Battle of Riverrun	298	3	
3	Battle of the Green Fork	298	4	
4	Battle of the Whispering Wood	298	5	

	attacker_king	defender_king	attacker_1	attacker_2	\
0	Joffrey/Tommen Baratheon	Robb Stark	Lannister	NaN	
1	Joffrey/Tommen Baratheon	Robb Stark	Lannister	NaN	
2	Joffrey/Tommen Baratheon	Robb Stark	Lannister	NaN	
3	Robb Stark	Joffrey/Tommen Baratheon	Stark	NaN	
4	Robb Stark	Joffrey/Tommen Baratheon	Stark	Tully	

	attacker_3	attacker_4	defender_1	...	major_death	major_capture	\
0	NaN	NaN	Tully	...	1.0	0.0	
1	NaN	NaN	Baratheon	...	1.0	0.0	
2	NaN	NaN	Tully	...	0.0	1.0	
3	NaN	NaN	Lannister	...	1.0	1.0	
4	NaN	NaN	Lannister	...	1.0	1.0	

	attacker_size	defender_size	\
0	15000.0	4000.0	
1	NaN	120.0	
2	15000.0	10000.0	
3	18000.0	20000.0	
4	1875.0	6000.0	

	attacker_commander	\
0	Jaime Lannister	
1	Gregor Clegane	
2	Jaime Lannister, Andros Brax	
3	Roose Bolton, Wylis Manderly, Medger Cerwyn, H...	
4	Robb Stark, Brynden Tully	

	defender_commander	summer	location	\
0	Clement Piper, Vance	1.0	Golden Tooth	
1	Beric Dondarrion	1.0	Mummer's Ford	
2	Edmure Tully, Tytos Blackwood	1.0	Riverrun	
3	Tywin Lannister, Gregor Clegane, Kevan Lannist...	1.0	Green Fork	
4	Jaime Lannister	1.0	Whispering Wood	

	region	note
0	The Westerlands	NaN
1	The Riverlands	NaN
2	The Riverlands	NaN
3	The Riverlands	NaN
4	The Riverlands	NaN


```
[5 rows x 25 columns]
1
0
1
0
1
0
1
0
The Riverlands      27
The Westerlands     3
The Stormlands      3
The Crownlands      2
The Reach            2
Beyond the Wall      1
Name: region, dtype: int64
```