

DATA FRAME CONCATENATION AND MERGING OPERATIONS

Function	DATAFRAME-1 (DF1)	DATAFRAME 2 (DF2)	FUNCTIONS PERFORMED ON DATA FRAME	RESULT IS STORED IN ANOTHER DATA FRAME (Highlighted changes)
concat It will merge two data frames	<pre>rno name marks 0 1 arya 50 1 2 ashish 60 2 3 supriya 70 3 4 dhruvi 80</pre>	<pre>rno name marks 0 1 veena 30 1 3 alok 40 2 5 tisha 50 3 7 tanvi 60</pre>	<pre>df_concat0=pd.concat([df1,df2]) # axis =0</pre>	<p>Simple Concatenation with axis=0</p> <pre> rno name marks 0 1 arya 50 1 2 ashish 60 2 3 supriya 70 3 4 dhruvi 80 0 1 veena 30 1 3 alok 40 2 5 tisha 50 3 7 tanvi 60</pre>
concat	<pre>rno name 0 1 arya 1 2 ashish 2 3 supriya 3 4 dhruvi</pre>	<pre>rno name 0 1 veena 1 3 alok 2 5 tisha 3 7 tanvi</pre>	<pre>df_ign_idx= pd.concat([df1,df2], ignore_index=True)</pre>	<p>Simple Concatenation with ignore index=True</p> <pre> rno name marks 0 1 arya 50 1 2 ashish 60 2 3 supriya 70 3 4 dhruvi 80 4 1 veena 30 5 3 alok 40 6 5 tisha 50 7 7 tanvi 60</pre>
concat	<pre>rno name marks 0 1 arya 50 1 2 ashish 60 2 3 supriya 70 3 4 dhruvi 80</pre>	<pre>rno name marks 0 1 veena 30 1 3 alok 40 2 5 tisha 50 3 7 tanvi 60</pre>	<pre>df_concat1=pd.concat([df1,df2], axis=1) # axis = 1</pre>	<p>Simple Concatenation with axis=1</p> <pre> rno name marks rno name marks 0 1 arya 50 1 veena 30 1 2 ashish 60 3 alok 40 2 3 supriya 70 5 tisha 50 3 4 dhruvi 80 7 tanvi 60</pre>
Concat	<pre>rno name 0 1 arya 1 2 ashish 2 3 supriya 3 4 dhruvi</pre>	<pre>rno name 0 1 veena 1 3 alok 2 5 tisha 3 7 tanvi</pre>	<pre>df_ign_idx= pd.concat([df1,df2], axis=1,ignore_index=True)</pre>	<p>Simple Concatenation with ignore index=True</p> <pre> 0 1 2 3 4 5 0 1 arya 50 1 veena 30 1 2 ashish 60 3 alok 40 2 3 supriya 70 5 tisha 50 3 4 dhruvi 80 7 tanvi 60</pre>
concat	<pre>rno name 0 1 arya</pre>	<pre>rno name 0 1 veena</pre>	<pre>print("Created New Dictionary with Two dictionary")</pre>	<p>Created New Dictionary with Two dictionary Dictionary from Dictionary</p>

Function	DATAFRAME-1 (DF1)	DATAFRAME 2 (DF2)	FUNCTIONS PERFORMED ON DATA FRAME	RESULT IS STORED IN ANOTHER DATA FRAME (Highlighted changes)
	<pre> 1 2 ashish 2 3 supriya 3 4 dhruvi </pre>	<pre> 1 3 alok 2 5 tisha 3 7 tanvi </pre>	<pre> dict_from_dict={'DataFrame1': df1, "DataFrame2" : df2 } print("Dictionary from Dictionary ") print(dict_from_dict) </pre>	<pre> {'DataFrame1': rno name marks 0 1 arya 50 1 2 ashish 60 2 3 supriya 70 3 4 dhruvi 80, 'DataFrame2': rno name marks 0 1 veena 30 1 3 alok 40 2 5 tisha 50 3 7 tanvi 60} ### </pre>
Concat	<pre> rno name 0 1 arya 1 2 ashish 2 3 supriya 3 4 dhruvi </pre>	<pre> rno name 0 1 veena 1 3 alok 2 5 tisha 3 7 tanvi </pre>	<pre> print("Created Data Frame From Dictionary of Dictionary ") merged_df = pd.concat(dict_from_dict) print(merged_df) </pre>	<pre> Created New Dictionary with Two Data Frames rno name marks DataFrame1 0 1 arya 50 1 2 ashish 60 2 3 supriya 70 3 4 dhruvi 80 DataFrame2 0 1 veena 30 1 3 alok 40 2 5 tisha 50 3 7 tanvi 60 </pre>
Merge	<pre> rno name 0 1 arya 1 2 ashish 2 3 supriya 3 4 dhruvi </pre>	<pre> rno name 0 1 veena 1 3 alok 2 5 tisha 3 7 tanvi </pre>	<pre> merge_on_id_df = pd.merge(df1,df2, on='rno') print(merge_on_id_df) </pre>	<pre> Data Frame Merged on Common Column i.e. RollNO rno name_x marks_x name_y marks_y 0 1 arya 50 veena 30 1 3 supriya 70 alok 40 </pre>
Merge function	<pre> rno name 0 1 veena 1 3 alok 2 5 tisha 3 7 tanvi </pre> <p>This is DataFrame 2 (This is considered as data frame first)</p>	<pre> roll name marks 0 1 veena 30 1 3 alok 40 2 5 tisha 50 3 7 tanvi 60 </pre> <p>This is Data Frame 4 This is considered as data frame second</p>	<pre> print("Data Frames with Different Column Names") df4=df2 df4.columns=['roll', 'name', 'marks'] print("Data Frame4") print(df4) merge_on_id_df = pd.merge(df1,df4, left_on='rno', right_on='roll') print(merge_on_id_df) </pre>	<pre> Data Frames with Different Column Names Data Frame4 roll name marks 0 1 veena 30 1 3 alok 40 2 5 tisha 50 3 7 tanvi 60 rno name_x marks_x roll name_y marks_y 0 1 arya 50 1 veena 30 1 3 supriya 70 3 alok 40 </pre>

Function	DATAFRAME-1 (DF1)	DATAFRAME 2 (DF2)	FUNCTIONS PERFORMED ON DATA FRAME	RESULT IS STORED IN ANOTHER DATA FRAME (Highlighted changes)
Merge function Full outer join	<pre>rno name 0 1 arya 1 2 ashish 2 3 supriya 3 4 dhruvi</pre>	<pre>rno name 0 1 veena 1 3 alok 2 5 tisha 3 7 tanvi</pre>	<pre>print(" Outer Join Operation ") outer_join_df= pd.merge(df1,df2, how="outer") print(outer_join_df)</pre>	<pre>Outer Join Operation rno name marks roll 0 1.0 arya 50 NaN 1 2.0 ashish 60 NaN 2 3.0 supriya 70 NaN 3 4.0 dhruvi 80 NaN 4 NaN veena 30 1.0 5 NaN alok 40 3.0 6 NaN tisha 50 5.0 7 NaN tanvi 60 7.0</pre>
Merge Function Inner Join	<pre>rno name 0 1 arya 1 2 ashish 2 3 supriya 3 4 dhruvi</pre>	<pre>roll name marks 0 1 veena 30 1 3 alok 40 2 5 tisha 50 3 7 tanvi 60</pre>	<pre>print(" Inner Join Operation ") inner_join_df= pd.merge(df1,df2, left_on = 'rno', right_on = 'roll', how="inner") print(inner_join_df)</pre>	<pre>nner Join Operation rno name_x marks_x roll name_y marks_y 0 1 arya 50 1 veena 30 1 3 supriya 70 3 alok 40</pre>
Merge Function Left Join	<pre>rno name 0 1 arya 1 2 ashish 2 3 supriya 3 4 dhruvi</pre>	<pre>roll name marks 0 1 veena 30 1 3 alok 40 2 5 tisha 50 3 7 tanvi 60</pre>	<pre>print(" Left Inner Join Operation ") left_join_df= pd.merge(df1,df2, left_on = 'rno', right_on = 'roll', how="left") print(left_join_df)</pre>	<pre>Left Inner Join Operation rno name_x marks_x roll name_y marks_y 0 1 arya 50 1.0 veena 30.0 1 2 ashish 60 NaN NaN NaN 2 3 supriya 70 3.0 alok 40.0 3 4 dhruvi 80 NaN NaN NaN</pre>
Merge Function right Join	<pre>rno name 0 1 arya 1 2 ashish 2 3 supriya 3 4 dhruvi</pre>	<pre>roll name marks 0 1 veena 30 1 3 alok 40 2 5 tisha 50 3 7 tanvi 60</pre>	<pre>print(" Righth Inner Join Operation ") right_join_df= pd.merge(df1,df2, left_on = 'rno', right_on = 'roll', how="right") print(right_join_df)</pre>	<pre>Righth Inner Join Operation rno name_x marks_x roll name_y marks_y 0 1.0 arya 50.0 1 veena 30 1 3.0 supriya 70.0 3 alok 40 2 NaN NaN NaN 5 tisha 50 3 NaN NaN NaN 7 tanvi 60</pre>
Merge Function Right join	<pre>rno name 0 1 arya 1 2 ashish 2 3 supriya 3 4 dhruvi</pre>	<pre>roll name marks 0 1 veena 30 1 3 alok 40 2 5 tisha 50 3 7 tanvi 60</pre>	<pre>print(" Righth Inner Join Operation ") right_join_df= pd.merge(df1,df2, left_on = 'rno', right_on = 'roll', how="right") print(right_join_df)</pre>	<pre>Righth Inner Join Operation rno name_x marks_x roll name_y marks_y 0 1.0 arya 50.0 1 veena 30 1 3.0 supriya 70.0 3 alok 40 2 NaN NaN NaN 5 tisha 50 3 NaN NaN NaN 7 tanvi 60</pre>
Merge Function Join on Index	<pre>Data frame 3 rno name marks a 1 arya 50 b 2 ashish 60 c 3 supriya 70 d 4 dhruvi 80</pre>	<pre>data Frame 4 roll name marks a 1 veena 30 p 3 alok 40 b 5 tisha 50 q 7 tanvi 60</pre>	<pre>print ("Join on Left Index") join_on_index_df = pd.merge(df3,df4, left_index=True, right_index=True) print (join_on_index_df)</pre>	<pre>Join on Left Index rno name_x marks_x roll name_y marks_y a 1 arya 50 1 veena 30 b 2 ashish 60 5 tisha 50</pre>

