```
import pandas as pd
# Load the Excel file
file_path = "/content/FDI data.xlsx"
xls = pd.ExcelFile(file_path)

# Display sheet names
xls.sheet_names
```

```
['1']
```

```
df = pd.read_excel(xls, sheet_name="1")
df.head()
```

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	Sector	2000-01	2001-02	2002 0…	…	…	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
0	METALLURGICAL INDUSTRIES	22.69	14.14	36.61	8.11	200.38	149.13	169.94	1175.75	959.94	419.88	1098.14	1786.14	1466.23	567.63	359.34
1	MINING	1.32	6.52	10.06	23.48	9.92	7.40	6.62	444.36	34.16	174.40	79.51	142.65	57.89	12.73	684.39
2	POWER	89.42	757.44	59.11	27.09	43.37	72.69	157.15	988.68	907.66	1271.79	1271.77	1652.38	535.68	1066.08	707.04
3	NON-CONVENTIONAL ENERGY	0.00	0.00	1.70	4.14	1.27	1.35	2.44	58.82	125.88	622.52	214.40	452.17	1106.52	414.25	615.95
4	COAL PRODUCTION	0.00	0.00	0.00	0.04	0.00	9.14	1.30	14.08	0.22	0.00	0.00	0.00	0.00	2.96	0.00

Next steps: Generate code with df | View recommended plots | New interactive sheet

```
missing_values = df.isnull().sum()

data_types = df.dtypes

summary_stats = df.describe()

missing_values, data_types, summary_stats
```

```
Sector      object
2000-01    float64
2001-02    float64
2002-03    float64
2003-04    float64
2004-05    float64
2005-06    float64
2006-07    float64
2007-08    float64
2008-09    float64
2009-10    float64
2010-11    float64
2011-12    float64
2012-13    float64
2013-14    float64
2014-15    float64
2015-16    float64
2016-17    float64
```

```
max    1359.970000  4713.780000  6986.170000  6183.490000  5466.130000

           2010-11      2011-12      2012-13      2013-14      2014-15  \
count    63.000000    63.000000    63.000000    63.000000    63.000000
mean    339.413810   557.472698   355.930000   385.703492   490.959841
std     627.141139  1031.474056   778.091368   658.429944   837.787060
min       0.000000     0.000000     0.000000     0.000000     0.000000
25%       8.430000    22.720000    15.115000    16.610000    33.800000
50%      58.070000   129.360000    95.410000   113.780000   177.220000
75%     304.280000   593.525000   288.025000   473.060000   595.390000
max    3296.090000  5215.980000  4832.980000  3982.890000  4443.260000

           2015-16      2016-17
count    63.000000    63.000000
mean    634.936349   690.131111
std    1335.307706  1411.965354
min       0.000000     0.000000
25%      30.000000    19.905000
50%     159.130000   110.860000
75%     519.070000   741.220000
max    6889.460000  8684.070000  )
```

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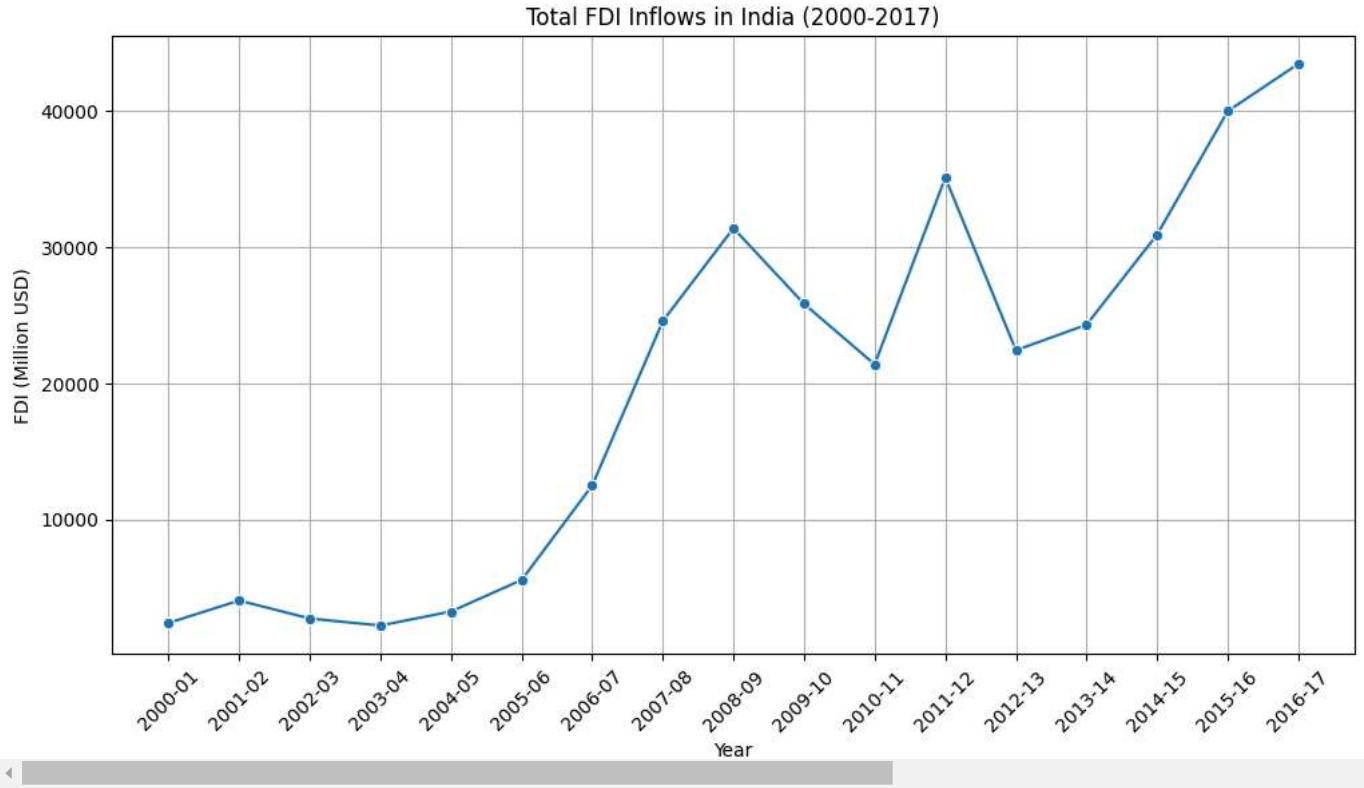
DATA IS CLEAN AND PREPROCESSED

```
import matplotlib.pyplot as plt
import seaborn as sns

df_melted = df.melt(id_vars=["Sector"], var_name="Year", value_name="FDI (Million USD)")
df_melted["Year"] = df_melted["Year"].astype(str)

# Overall FDI trend over the years
plt.figure(figsize=(12, 6))
sns.lineplot(data=df_melted, x="Year", y="FDI (Million USD)", estimator="sum", ci=None, marker="o")
plt.xticks(rotation=45)
plt.title("Total FDI Inflows in India (2000-2017)")
plt.xlabel("Year")
plt.ylabel("FDI (Million USD)")
plt.grid(True)
plt.show()
```

```
<ipython-input-11-dded623d41c9>:9: FutureWarning:

The `ci` parameter is deprecated. Use `errorbar=None` for the same effect.

  sns.lineplot(data=df_melted, x="Year", y="FDI (Million USD)", estimator="sum", ci=None, marker="o")
```



```
# Top 10 sectors receiving highest total FDI from 2000-2017
top_sectors = df.set_index("Sector").sum(axis=1).nlargest(10)

# Bar plot for top sectors
plt.figure(figsize=(12, 6))
sns.barplot(x=top_sectors.values, y=top_sectors.index, palette="viridis")
plt.title("Top 10 Sectors by Total FDI Inflows (2000-2017)")
plt.xlabel("Total FDI (Million USD)")
plt.ylabel("Sector")
plt.grid(axis="x", linestyle="--", alpha=0.7)
plt.show()
```

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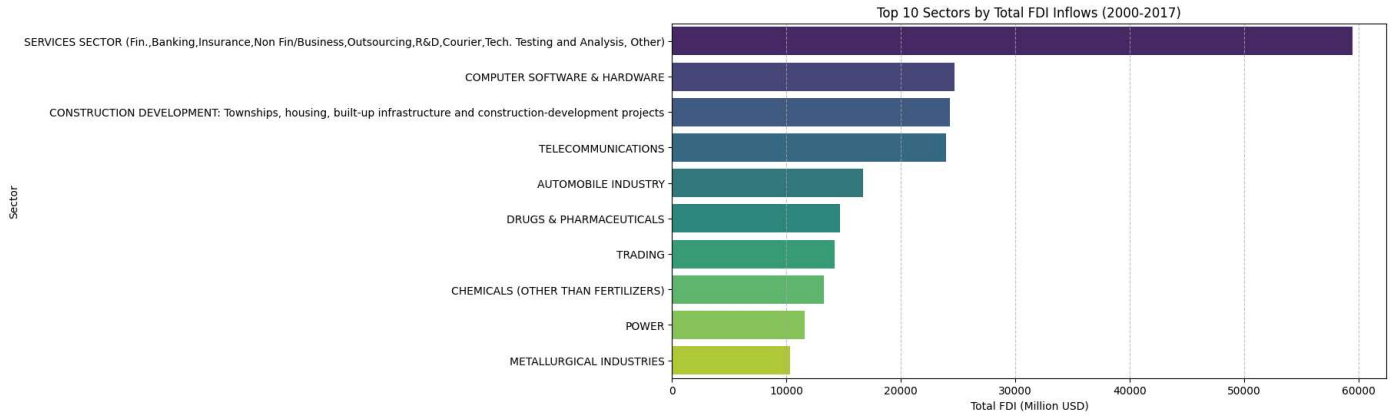
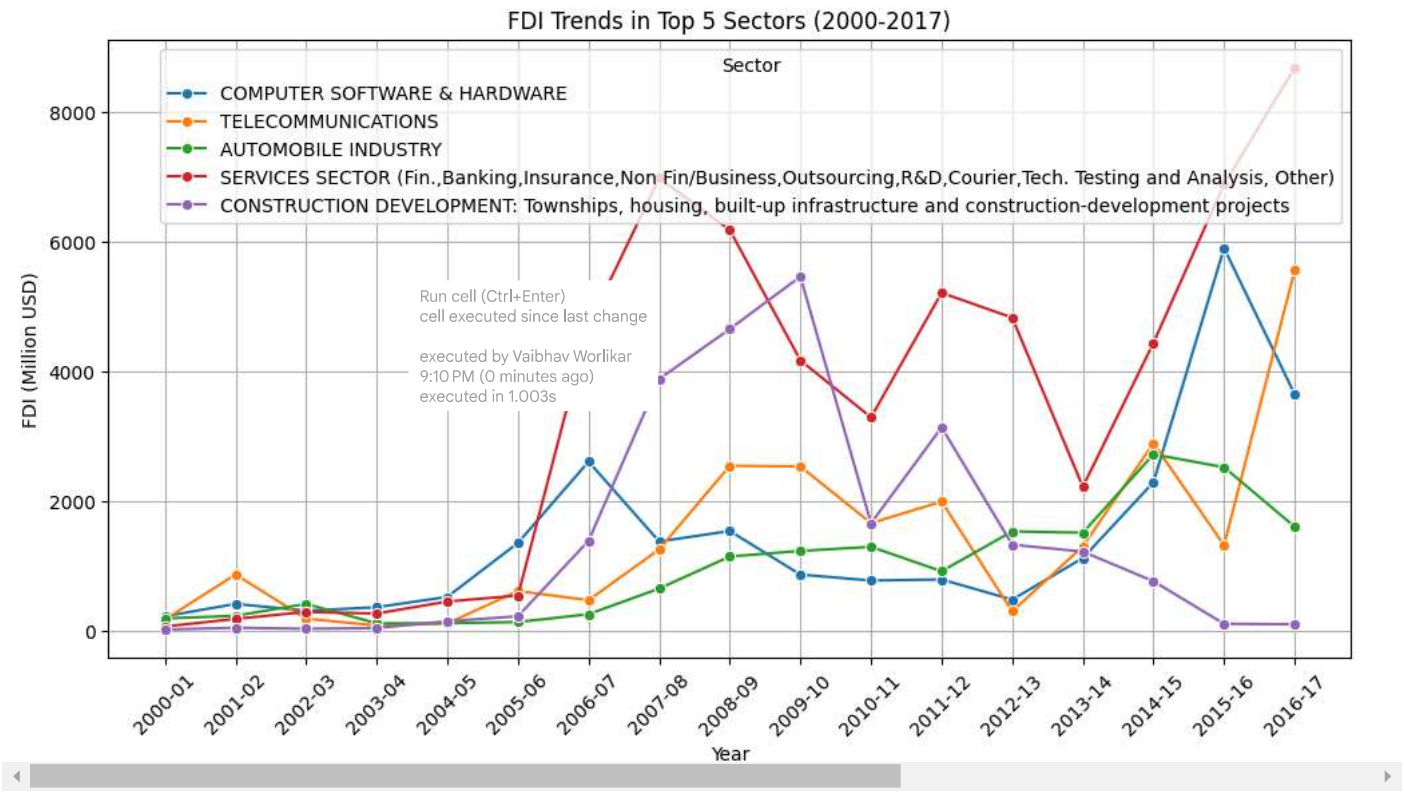
```
<ipython-input-12-2bdf3627e071>:6: Futu
Passing `palette` without assigning `hu                l be removed in v0.14.0. Assign the `y` variable to `hue` and set `legenc
  sns.barplot(x=top_sectors.values, y=top_sectors.index, palette="viridis")
```



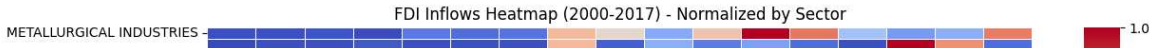

```
top_5_sectors = top_sectors.index[:5]
df_top_sectors = df_melted[df_melted["Sector"].isin(top_5_sectors)]

plt.figure(figsize=(12, 6))
sns.lineplot(data=df_top_sectors, x="Year", y="FDI (Million USD)", hue="Sector", marker="o")
plt.xticks(rotation=45)
plt.title("FDI Trends in Top 5 Sectors (2000-2017)")
plt.xlabel("Year")
plt.ylabel("FDI (Million USD)")
plt.legend(title="Sector")
plt.grid(True)
plt.show()
```




```
heatmap_data = df.set_index("Sector")
heatmap_data_normalized = heatmap_data.div(heatmap_data.max(axis=1), axis=0)

plt.figure(figsize=(14, 10))
sns.heatmap(heatmap_data_normalized, cmap="coolwarm", linewidths=0.5, cbar=True)
plt.title("FDI Inflows Heatmap (2000-2017) - Normalized by Sector")
plt.xlabel("Year")
plt.ylabel("Sector")
plt.show()
```



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