In this project, I chose to focus on a file with the imports and exports of India, detailed from 1997-2022.

In the extraction step, (Step 1) I attempted to do the path\_to\_file with pathlib using the if/else statement that surrounded the majority of my code. This step has worked on my computer, however inside of the loop, I go back to using the Desktop version of the csv with the full location written out, as I couldn’t figure out how to use the shortened version throughout. This location will have to be changed when running on someone else’s computer! I then cleaned up the data by removing commas in numbers and NaN values as well.

In the transformation step (Step 3), I dropped the “Total Trade” column because I wanted to focus more on the Exports and Imports specifically in the summary section. Thus, the “Total Trade” column was irrelevant to my final results.

In a combination of the load and user input steps (Steps 4 and 2), I asked the user to enter the end of the file that the new transformed file would end with. If the end of the file the user enters is not “csv” or “json”, the user is prompted to enter another time, until they enter one of the two correct endings.

In the summary step (Step 5), I first printed the number of rows and columns of the new file created with the end the user specified (that also does not have the “Total Trade” column as it was deleted previously). For the last part of my summary, I printed the percentage of trade for each country that is positive (exports from India to that country > imports to India from that country) and the percentage of trade for each country that is negative (exports from India to that country < imports to India from that country). I chose to show the percentage because I eliminated NaN values, so each country didn’t always have data for each year for imports and exports between India. It’s interesting to see the countries with higher export and import percentages. For example, Barbados and Burundi are both 100% exports in the years with data included, which means that India has always (since 1997) exported more than imported from these countries. Argentina, on the other hand, has 0% exports, which means that India has always (since 1947) imported more than exported from Argentina.

Output from my computer:

\*\*The Percent Negative Trade Balance is further down, not all of the columns would fit across. Tricky to read but the percentages do add to 100%, so having the positive trade balance next to the country name should provide sufficient insight.

The file exports and imports of india(1997-2022) - exports and imports.csv exists

Enter "csv" or "json"csv

csv

Number of records: 5201

Number of columns: 7

Country Percent Positive Trade Balance \

0 AFGHANISTAN 88.00

0 ALBANIA 75.00

0 ALGERIA 56.00

0 AMERI SAMOA 38.10

0 ANDORRA 84.21

0 ANGOLA 23.81

0 ANGUILLA 54.55

0 ANTARTICA 41.67

0 ANTIGUA 95.00

0 ARGENTINA 0.00

0 ARMENIA 87.50

0 ARUBA 93.33

0 AUSTRALIA 0.00

0 AUSTRIA 16.00

0 AZERBAIJAN 40.00

0 BAHAMAS 65.22

0 BAHARAIN IS 48.00

0 BANGLADESH PR 100.00

0 BARBADOS 100.00

0 BELARUS 16.00

0 BELGIUM 4.00

0 BELIZE 90.00

0 BENIN 80.00

0 BERMUDA 82.35

0 BHUTAN 64.00

0 BOLIVIA 64.00

0 BOSNIA-HRZGOVIN 73.91

0 BOTSWANA 52.17

0 BR VIRGN IS 47.62

0 BRAZIL 56.00

0 BRUNEI 40.00

0 BULGARIA 72.00

0 BURKINA FASO 54.17

0 BURUNDI 100.00

0 C AFRI REP 90.48

0 CAMBODIA 100.00

0 CAMEROON 44.00

0 CANADA 44.00

0 CANARY IS 100.00

0 CAPE VERDE IS 47.06

0 CAYMAN IS 72.22

0 CHAD 45.00

0 CHANNEL IS 75.00

0 CHILE 16.00

0 CHINA P RP 0.00

0 CHRISTMAS IS. 58.82

0 COCOS IS 42.86

0 COLOMBIA 72.00

0 COMOROS 82.61

0 CONGO D. REP. 66.67

0 CONGO P REP 52.00

0 COOK IS 80.00

0 COSTA RICA 52.00

0 COTE D' IVOIRE 28.00

0 CROATIA 92.00

0 CUBA 80.00

0 CYPRUS 84.00

0 CZECH REPUBLIC 20.00

0 DENMARK 92.00

0 DJIBOUTI 100.00

0 DOMINIC REP 65.22

0 DOMINICA 100.00

0 ECUADOR 52.00

0 EGYPT A RP 76.00

0 EL SALVADOR 100.00

0 EQUTL GUINEA 35.00

0 ERITREA 83.33

0 ESTONIA 56.00

0 ETHIOPIA 100.00

0 FALKLAND IS 33.33

0 FAROE IS. 81.25

0 FIJI IS 100.00

0 FINLAND 0.00

0 FR GUIANA 71.43

0 FR POLYNESIA 100.00

0 FR S ANT TR 62.50

0 FRANCE 52.00

0 GABON 0.00

0 GAMBIA 100.00

0 GEORGIA 95.65

0 GERMANY 4.00

0 GHANA 68.00

0 GIBRALTAR 94.12

0 GREECE 100.00

0 GREENLAND 87.50

0 GRENADA 95.24

0 GUADELOUPE 100.00

0 GUAM 92.86

0 GUATEMALA 100.00

0 GUERNSEY 0.00

0 GUINEA 44.00

0 GUINEA BISSAU 0.00

0 GUYANA 76.00

0 HAITI 100.00

0 HEARD MACDONALD 0.00

0 HONDURAS 100.00

0 HONG KONG 84.00

0 HUNGARY 88.00

0 ICELAND 88.00

0 INDONESIA 0.00

0 IRAN 32.00

0 IRAQ 24.00

0 IRELAND 60.00

0 ISRAEL 92.00

0 ITALY 80.00

0 JAMAICA 100.00

0 JAPAN 4.00

0 JORDAN 12.00

0 KAZAKHSTAN 48.00

0 KENYA 100.00

0 KIRIBATI REP 80.00

0 KOREA DP RP 68.00

0 KOREA RP 0.00

0 KUWAIT 24.00

0 KYRGHYZSTAN 96.00

0 LAO PD RP 68.18

0 LATVIA 64.00

0 LEBANON 100.00

0 LESOTHO 93.75

0 LIBERIA 75.00

0 LIBYA 64.00

0 LIECHTENSTEIN 45.83

0 LITHUANIA 52.00

0 LUXEMBOURG 16.00

0 MACAO 66.67

0 MACEDONIA 60.00

0 MADAGASCAR 96.00

0 MALAWI 96.00

0 MALAYSIA 0.00

0 MALDIVES 100.00

0 MALI 96.00

0 MALTA 88.00

0 MARSHALL ISLAND 42.11

0 MARTINIQUE 100.00

0 MAURITANIA 100.00

0 MAURITIUS 100.00

0 MAYOTTE 100.00

0 MEXICO 52.00

0 MICRONESIA 100.00

0 MOLDOVA 91.30

0 MONACO 47.37

0 MONGOLIA 88.00

0 MONTENEGRO 100.00

0 MONTSERRAT 81.82

0 MOROCCO 0.00

0 MOZAMBIQUE 84.00

0 MYANMAR 28.00

0 N. MARIANA IS. 58.33

0 NAMIBIA 92.00

0 NAURU RP 20.83

0 NEPAL 84.00

0 NETHERLAND 100.00

0 NETHERLANDANTIL 90.00

0 NEW CALEDONIA 48.00

0 NEW ZEALAND 16.00

0 NICARAGUA 100.00

0 NIGER 95.83

0 NIGERIA 24.00

0 NIUE IS 37.50

0 NORFOLK IS 57.14

0 NORWAY 12.00

0 OMAN 56.00

0 PACIFIC IS 100.00

0 PAKISTAN IR 96.00

0 PALAU 69.23

0 PANAMA C Z 45.45

0 PANAMA REPUBLIC 68.00

0 PAPUA N GNA 28.00

0 PARAGUAY 88.00

0 PERU 64.00

0 Petroleum Products 33.33

0 PHILIPPINES 100.00

0 PITCAIRN IS. 60.00

0 POLAND 96.00

0 PORTUGAL 100.00

0 PUERTO RICO 100.00

0 QATAR 0.00

0 REUNION 100.00

0 ROMANIA 32.00

0 RUSSIA 24.00

0 RWANDA 100.00

0 SAMOA 80.95

0 SAN MARINO 33.33

0 SAO TOME 100.00

0 SAUDI ARAB 24.00

0 SENEGAL 52.00

0 SERBIA 100.00

0 SEYCHELLES 100.00

0 SIERRA LEONE 95.83

0 SINGAPORE 56.00

0 SLOVAK REP 60.00

0 SLOVENIA 84.00

0 SOLOMON IS 16.00

0 SOMALIA 96.00

0 SOUTH AFRICA 0.00

0 SOUTH SUDAN 66.67

0 SPAIN 100.00

0 SRI LANKA DSR 100.00

0 ST HELENA 66.67

0 ST KITT N A 100.00

0 ST LUCIA 88.89

0 ST PIERRE 80.00

0 ST VINCENT 33.33

0 STATE OF PALEST 100.00

0 SUDAN 88.00

0 SURINAME 60.87

0 SWAZILAND 60.00

0 SWEDEN 0.00

0 SWITZERLAND 0.00

0 SYRIA 100.00

0 TAIWAN 0.00

0 TAJIKISTAN 66.67

0 TANZANIA REP 88.00

0 THAILAND 32.00

0 TIMOR LESTE 88.24

0 TOGO 100.00

0 TOKELAU IS 50.00

0 TONGA 94.12

0 TRINIDAD 70.83

0 TUNISIA 48.00

0 TURKEY 92.00

0 TURKMENISTAN 100.00

0 TURKS C IS 81.82

0 TUVALU 72.73

0 U ARAB EMTS 80.00

0 U K 72.00

0 U S A 96.00

0 UGANDA 100.00

0 UKRAINE 0.00

0 UNION OF SERBIA & MONTENEGRO 89.47

0 UNSPECIFIED 45.45

0 URUGUAY 92.00

0 US MINOR OUTLYING ISLANDS 50.00

0 UZBEKISTAN 64.00

0 VANUATU REP 52.94

0 VATICAN CITY 50.00

0 VENEZUELA 40.00

0 VIETNAM SOC REP 88.00

0 VIRGIN IS US 86.96

0 WALLIS F IS 72.73

0 YEMEN REPUBLC 76.00

0 ZAMBIA 56.00

0 ZIMBABWE 84.00

Percent Negative Trade Balance

0 12.00

0 25.00

0 44.00

0 57.14

0 15.79

0 76.19

0 45.45

0 58.33

0 5.00

0 100.00

0 12.50

0 6.67

0 100.00

0 84.00

0 60.00

0 34.78

0 52.00

0 0.00

0 0.00

0 84.00

0 96.00

0 10.00

0 20.00

0 17.65

0 36.00

0 36.00

0 26.09

0 47.83

0 52.38

0 44.00

0 60.00

0 24.00

0 45.83

0 0.00

0 9.52

0 0.00

0 56.00

0 56.00

0 0.00

0 52.94

0 27.78

0 50.00

0 25.00

0 84.00

0 100.00

0 41.18

0 42.86

0 28.00

0 17.39

0 33.33

0 48.00

0 20.00

0 48.00

0 72.00

0 8.00

0 20.00

0 16.00

0 80.00

0 8.00

0 0.00

0 34.78

0 0.00

0 48.00

0 24.00

0 0.00

0 65.00

0 16.67

0 44.00

0 0.00

0 66.67

0 18.75

0 0.00

0 100.00

0 23.81

0 0.00

0 25.00

0 48.00

0 100.00

0 0.00

0 4.35

0 96.00

0 32.00

0 5.88

0 0.00

0 6.25

0 0.00

0 0.00

0 7.14

0 0.00

0 100.00

0 56.00

0 100.00

0 24.00

0 0.00

0 75.00

0 0.00

0 16.00

0 12.00

0 12.00

0 100.00

0 68.00

0 76.00

0 40.00

0 8.00

0 20.00

0 0.00

0 96.00

0 88.00

0 52.00

0 0.00

0 20.00

0 32.00

0 100.00

0 76.00

0 4.00

0 31.82

0 36.00

0 0.00

0 6.25

0 25.00

0 36.00

0 54.17

0 48.00

0 84.00

0 33.33

0 40.00

0 4.00

0 4.00

0 100.00

0 0.00

0 4.00

0 12.00

0 57.89

0 0.00

0 0.00

0 0.00

0 0.00

0 48.00

0 0.00

0 8.70

0 52.63

0 12.00

0 0.00

0 9.09

0 100.00

0 16.00

0 72.00

0 33.33

0 8.00

0 79.17

0 16.00

0 0.00

0 10.00

0 52.00

0 84.00

0 0.00

0 4.17

0 76.00

0 50.00

0 42.86

0 88.00

0 44.00

0 0.00

0 4.00

0 23.08

0 54.55

0 32.00

0 72.00

0 12.00

0 36.00

0 66.67

0 0.00

0 20.00

0 4.00

0 0.00

0 0.00

0 100.00

0 0.00

0 68.00

0 76.00

0 0.00

0 19.05

0 66.67

0 0.00

0 76.00

0 48.00

0 0.00

0 0.00

0 4.17

0 44.00

0 40.00

0 16.00

0 84.00

0 4.00

0 100.00

0 33.33

0 0.00

0 0.00

0 33.33

0 0.00

0 11.11

0 20.00

0 66.67

0 0.00

0 12.00

0 39.13

0 40.00

0 100.00

0 100.00

0 0.00

0 100.00

0 33.33

0 12.00

0 68.00

0 11.76

0 0.00

0 44.44

0 5.88

0 29.17

0 52.00

0 8.00

0 0.00

0 18.18

0 18.18

0 20.00

0 28.00

0 4.00

0 0.00

0 100.00

0 10.53

0 54.55

0 8.00

0 37.50

0 36.00

0 47.06

0 50.00

0 60.00

0 12.00

0 13.04

0 27.27

0 24.00

0 44.00

0 16.00