import pandas as pd  
import matplotlib.pyplot as plt  
from docx import Document  
from docx.shared import Inches  
import numpy as np  
  
  
# read Excel file  
Fin\_Statement = pd.ExcelFile("C:\\Users\\kavya\\Desktop\\Sreekanth\\GIL\\Annual Reports\\Stone plus.xlsx")  
Balance\_Sheet = pd.read\_excel(Fin\_Statement, 'Balance Sheet', header=None)  
ProfitAndLossSheet = pd.read\_excel(Fin\_Statement, 'Income Statement', header=None)  
  
# read Industry excel file  
Industry\_Statement = pd.ExcelFile("C:\\Users\\kavya\\Desktop\\Sreekanth\\GIL\\SME Analytics\\Industry Standards\\Average\_for\_ratios.xlsx")  
Balance\_Sheet\_Industry = pd.read\_excel(Industry\_Statement, 'Balance Sheet', header=None)  
ProfitAndLossSheet\_Industry = pd.read\_excel(Industry\_Statement, 'Income Statement', header=None)  
# initializing lists of different ratios  
Year\_List = list()  
Current\_Ratio\_List = list()  
Current\_Ratio\_Industry\_List = list()  
Quick\_Ratio\_List = list()  
Quick\_Ratio\_Industry\_List = list()  
Return\_On\_Assets\_List = list()  
Return\_On\_Assets\_Industry\_List = list()  
Return\_On\_Equity\_List = list()  
Return\_On\_Equity\_Industry\_List = list()  
Gross\_Margin\_List = list()  
Gross\_Margin\_Industry\_List = list()  
Profit\_Margin\_List = list()  
Profit\_Margin\_Industry\_List = list()  
Operating\_Margin\_List = list()  
Operating\_Margin\_Industry\_List = list()  
Asset\_TurnOver\_List = list()  
Asset\_TurnOver\_Industry\_List = list()  
Accounts\_Receivable\_Turnover\_List = list()  
Accounts\_Receivable\_Turnover\_Industry\_List = list()  
Accounts\_Payable\_Days\_List = list()  
Accounts\_Payable\_Days\_Industry\_List = list()  
Average\_Days\_Sales\_List = list()  
Average\_Days\_Sales\_Industry\_List = list()  
Days\_Receivable\_List = list()  
Days\_Receivable\_Industry\_List = list()  
Inventory\_TurnOver\_List = list()  
Inventory\_TurnOver\_Industry\_List = list()  
Inventory\_TurnOver\_Period\_List = list()  
Inventory\_TurnOver\_Period\_Industry\_List = list()  
Fixed\_Asset\_TurnOver\_List = list()  
Fixed\_Asset\_TurnOver\_Industry\_List = list()  
Working\_Capital\_TurnOver\_List = list()  
Working\_Capital\_TurnOver\_Industry\_List = list()  
Debt\_Ratio\_List = list()  
Debt\_ratio\_Industry\_List = list()  
Debt\_Equity\_Ratio\_List = list()  
Debt\_Equity\_Ratio\_Industry\_List = list()  
  
# Common size analysis  
Revenue\_List = list()  
Revenue\_Industry\_List = list()  
Beginning\_Inventory\_Percentage\_List = list()  
Beginning\_Inventory\_Industry\_Percentage\_List = list()  
Purchases\_Percentage\_List = list()  
Purchases\_Industry\_Percentage\_List = list()  
Freight\_Expenses\_Percentage\_List = list()  
Freight\_Expenses\_Industry\_Percentage\_List = list()  
Ending\_Inventory\_Percentage\_List = list()  
Ending\_Inventory\_Industry\_Percentage\_List = list()  
Bill\_Of\_Materials\_Percentage\_List = list()  
Bill\_Of\_Materials\_Industry\_Percentage\_List = list()  
Labour\_Charges\_Percentage\_List = list()  
Labour\_Charges\_Per\_Working\_Hour\_List = list()  
Labour\_Charges\_Industry\_Percentage\_List = list()  
Sub\_Contract\_Expenses\_Percentage\_List = list()  
Sub\_Contract\_Expenses\_Industry\_Percentage\_List = list()  
Cost\_Of\_Goods\_Sold\_Percentage\_List = list()  
Cost\_Of\_Goods\_Sold\_Percentage\_Industry\_List = list()  
Gross\_Profit\_Percentage\_List = list()  
Gross\_Profit\_Industry\_Percentage\_List = list()  
Business\_Development\_Expenses\_Percentage\_List = list()  
Business\_Development\_Expenses\_Industry\_Percentage\_List = list()  
Fuel\_Expenses\_Percentage\_List = list()  
Fuel\_Expenses\_Industry\_Percentage\_List = list()  
Conveyance\_Expenses\_Percentage\_List = list()  
Conveyance\_Expenses\_Industry\_Percentage\_List = list()  
Telephone\_Expenses\_Percentage\_List = list()  
Telephone\_Expenses\_Industry\_Percentage\_List = list()  
Selling\_And\_Admin\_Expenses\_Percentage\_List = list()  
Selling\_And\_Admin\_Expenses\_Industry\_Percentage\_List = list()  
Electricity\_Expenses\_Percentage\_List = list()  
Electricity\_Expenses\_Industry\_Percentage\_List = list()  
Vehicle\_Maintenance\_Percentage\_List = list()  
Vehicle\_Maintenance\_Industry\_Percentage\_List = list()  
Machine\_Maintenance\_Percentage\_List = list()  
Machine\_Maintenance\_Industry\_Percentage\_List = list()  
Rent\_Percentage\_List = list()  
Rent\_Industry\_Percentage\_List = list()  
Consumables\_Percentage\_List = list()  
Consumables\_Industry\_Percentage\_List = list()  
Bank\_Charges\_Percentage\_List = list()  
Bank\_Charges\_Industry\_Percentage\_List = list()  
Other\_Operating\_Expenses\_Percentage\_List = list()  
Other\_Operating\_Expenses\_Industry\_Percentage\_List = list()  
EBITDA\_Percentage\_List = list()  
EBITDA\_Industry\_Percentage\_List = list()  
Depreciation\_Expense\_Percentage\_List = list()  
Depreciation\_Industry\_Expense\_Percentage\_List = list()  
Amortization\_Expense\_Percentage\_List = list()  
Amortization\_Expense\_Industry\_Percentage\_List = list()  
Operating\_Profit\_Percentage\_List = list()  
Operating\_Profit\_Industry\_Percentage\_List = list()  
Bank\_Interest\_Expense\_Percentage\_List = list()  
Bank\_Interest\_Expense\_Industry\_Percentage\_List = list()  
Other\_Interest\_Expense\_Percentage\_List = list()  
Other\_Interest\_Expense\_Industry\_Percentage\_List = list()  
Total\_Interest\_Expense\_Percentage\_List = list()  
Total\_Interest\_Expense\_Industry\_Percentage\_List = list()  
Interest\_Expense\_Per\_Working\_Hour\_List = list()  
Other\_Expenses\_Percentage\_List = list()  
Other\_Expenses\_Industry\_Percentage\_List = list()  
Bank\_Interest\_Income\_Percentage\_List = list()  
Bank\_Interest\_Income\_Industry\_Percentage\_List = list()  
Other\_Interest\_Income\_Percentage\_List = list()  
Other\_Interest\_Income\_Industry\_Percentage\_List = list()  
Total\_Interest\_Income\_Percentage\_List = list()  
Total\_Interest\_Income\_Industry\_Percentage\_List = list()  
Net\_Income\_Before\_Taxes\_Percentage\_List = list()  
Net\_Income\_Before\_Taxes\_Industry\_Percentage\_List = list()  
Income\_Tax\_Expense\_Percentage\_List = list()  
Income\_Tax\_Expense\_Industry\_Percentage\_List = list()  
Net\_Income\_Percentage\_List = list()  
Net\_Income\_Industry\_Percentage\_List = list()  
  
# Asset trend analysis list  
Cash\_and\_Cash\_Equivalents\_list = list()  
Cash\_and\_Cash\_Equivalents\_Industry\_list = list()  
Cash\_and\_Cash\_Equivalents\_percentage\_change\_list = list()  
Deposit\_list = list()  
Deposit\_percentage\_change\_list = list()  
Accounts\_Receivable\_List = list()  
Accounts\_Receivable\_percentage\_change\_List = list()  
Inventory\_List = list()  
Inventory\_Industry\_List = list()  
Inventory\_percentage\_change\_List = list()  
Prepaid\_Expenses\_List = list()  
Prepaid\_Expenses\_percentage\_change\_List = list()  
Other\_Current\_Assets\_List = list()  
Other\_Current\_Assets\_percentage\_change\_List = list()  
Total\_Current\_Assets\_List = list()  
Total\_Current\_Assets\_Industry\_List = list()  
Total\_Current\_Assets\_percentage\_change\_List = list()  
Property\_Plant\_And\_Equipment\_percentage\_change\_List = list()  
Other\_Long\_Term\_Assets\_percentage\_change\_List = list()  
Intangible\_Assets\_percentage\_change\_List = list()  
Good\_Will\_percentage\_change\_List = list()  
Total\_Long\_Term\_Assets\_percentage\_change\_List = list()  
Total\_Assets\_percentage\_change\_List = list()  
  
number\_of\_years = 0  
for number in range(1, 5):  
 Total\_Equity = Balance\_Sheet[number][39]  
 if Total\_Equity == 0:  
 number\_of\_years = number\_of\_years  
 else:  
 number\_of\_years = number\_of\_years + 1  
print(number\_of\_years)  
for Col in range(1, number\_of\_years+1):  
 Year = Balance\_Sheet[Col][0]  
 Year\_List.append(Year)  
 Current\_Assets = Balance\_Sheet[Col][8]  
 Current\_Assets\_Industry = Balance\_Sheet\_Industry[Col][8]  
 Current\_Liabilities = Balance\_Sheet[Col][26]  
 Current\_Liabilities\_Industry = Balance\_Sheet\_Industry[Col][26]  
 # Current\_Ratio  
 Current\_Ratio = Current\_Assets/Current\_Liabilities  
 Current\_Ratio\_Industry = Current\_Assets\_Industry/Current\_Liabilities\_Industry  
 # Appending the ratio to the list  
 Current\_Ratio\_List.append(Current\_Ratio)  
 Current\_Ratio\_Industry\_List.append(Current\_Ratio\_Industry)  
 Inventory = Balance\_Sheet[Col][4]  
 Quick\_Assets = Current\_Assets-Inventory  
 Inventory\_Industry = Balance\_Sheet\_Industry[Col][4]  
 Quick\_Assets\_Industry = Current\_Assets\_Industry-Inventory\_Industry  
 # Quick Ratio  
 Quick\_Ratio = Quick\_Assets/Current\_Liabilities  
 Quick\_Ratio\_Industry = Quick\_Assets\_Industry/Current\_Liabilities\_Industry  
 # Appending the ratio to the list  
 Quick\_Ratio\_List.append(Quick\_Ratio)  
 Quick\_Ratio\_Industry\_List.append(Quick\_Ratio\_Industry)  
 Net\_Income = ProfitAndLossSheet[Col][51]  
 Net\_Income\_Industry = ProfitAndLossSheet\_Industry[Col][51]  
 Total\_Assets = Balance\_Sheet[Col][18]  
 Total\_Assets\_Industry = Balance\_Sheet\_Industry[Col][18]  
 # Return On Assets  
 Return\_On\_Assets = (Net\_Income/Total\_Assets)\*100  
 Return\_On\_Assets\_Industry = (Net\_Income\_Industry/Total\_Assets\_Industry)\*100  
 # Appending the ratio to the list  
 Return\_On\_Assets\_List.append(Return\_On\_Assets)  
 Return\_On\_Assets\_Industry\_List.append(Return\_On\_Assets\_Industry)  
 Owners\_Equity = Balance\_Sheet[Col][37]  
 Owners\_Equity\_Industry = Balance\_Sheet\_Industry[Col][37]  
 # Return On Equity  
 Return\_On\_Equity = (Net\_Income/Owners\_Equity)\*100  
 Return\_On\_Equity\_Industry = (Net\_Income\_Industry/Owners\_Equity\_Industry)\*100  
 # Appending the ratio to the list  
 Return\_On\_Equity\_List.append(Return\_On\_Equity)  
 Return\_On\_Equity\_Industry\_List.append(Return\_On\_Equity\_Industry)  
 Gross\_Profit = ProfitAndLossSheet[Col][11]  
 Gross\_Profit\_Industry = ProfitAndLossSheet\_Industry[Col][11]  
 Revenue = ProfitAndLossSheet[Col][1]  
 Revenue\_Industry = ProfitAndLossSheet\_Industry[Col][1]  
 # Gross Margin  
 Gross\_Margin = (Gross\_Profit/Revenue)\*100  
 Gross\_Margin\_Industry = (Gross\_Profit\_Industry/Revenue\_Industry)\*100  
 # Appending the ratio to the list  
 Gross\_Margin\_List.append(Gross\_Margin)  
 Gross\_Margin\_Industry\_List.append(Gross\_Margin\_Industry)  
 # Profit Margin  
 Profit\_Margin = (Net\_Income/Revenue)\*100  
 Profit\_Margin\_Industry = (Net\_Income\_Industry/Revenue\_Industry)\*100  
 # Appending the ratio to the list  
 Profit\_Margin\_List.append(Profit\_Margin)  
 Profit\_Margin\_Industry\_List.append(Profit\_Margin\_Industry)  
 Operating\_Income = ProfitAndLossSheet[Col][35]  
 Operating\_Income\_Industry = ProfitAndLossSheet\_Industry[Col][35]  
 # Operating Margin  
 Operating\_Margin = (Operating\_Income/Revenue)\*100  
 Operating\_Margin\_Industry = (Operating\_Income\_Industry/Revenue\_Industry)\*100  
 # Appending the ratio to the list  
 Operating\_Margin\_List.append(Operating\_Margin)  
 Operating\_Margin\_Industry\_List.append(Operating\_Margin\_Industry)  
 # Asset Turn Over ratio  
 Asset\_TurnOver = Revenue/Total\_Assets  
 Asset\_TurnOver\_Industry = Revenue\_Industry/Total\_Assets\_Industry  
 # Appending the ratio to the list  
 Asset\_TurnOver\_List.append(Asset\_TurnOver)  
 Asset\_TurnOver\_Industry\_List.append(Asset\_TurnOver\_Industry)  
 Ending\_Accounts\_Receivable = Balance\_Sheet[Col][3]  
 Ending\_Accounts\_Receivable\_Industry = Balance\_Sheet\_Industry[Col][3]  
 Beginning\_Accounts\_Receivable = Balance\_Sheet[Col+1][3]  
 Beginning\_Accounts\_Receivable\_Industry = Balance\_Sheet\_Industry[Col+1][3]  
 if Beginning\_Accounts\_Receivable == 0:  
 Beginning\_Accounts\_Receivable = Ending\_Accounts\_Receivable  
 Average\_Accounts\_Receivable = (Ending\_Accounts\_Receivable + Beginning\_Accounts\_Receivable)/2  
 if Beginning\_Accounts\_Receivable\_Industry == 0:  
 Beginning\_Accounts\_Receivable\_Industry = Ending\_Accounts\_Receivable\_Industry  
 Average\_Accounts\_Receivable\_Industry = (Ending\_Accounts\_Receivable\_Industry + Beginning\_Accounts\_Receivable\_Industry)/2  
 # Accounts Receivable Turn Over  
 Accounts\_Receivable\_Turnover = Revenue/Average\_Accounts\_Receivable  
 Accounts\_receivable\_Turnover\_Industry = Revenue\_Industry/Average\_Accounts\_Receivable\_Industry  
 # Appending the ratio to the list  
 Accounts\_Receivable\_Turnover\_List.append(Accounts\_Receivable\_Turnover)  
 Accounts\_Receivable\_Turnover\_Industry\_List.append(Accounts\_receivable\_Turnover\_Industry)  
 # Average Days Sales  
 Average\_Days\_Sales = Revenue/365  
 Average\_Days\_Sales\_Industry = Revenue\_Industry/365  
 # Appending the ratio to the list  
 Average\_Days\_Sales\_List.append(Average\_Days\_Sales)  
 Average\_Days\_Sales\_Industry\_List.append(Average\_Days\_Sales\_Industry)  
 # Days Receivable  
 Days\_Receivable = Ending\_Accounts\_Receivable/Average\_Days\_Sales  
 Days\_Receivable\_Industry = Ending\_Accounts\_Receivable\_Industry/Average\_Days\_Sales\_Industry  
 # Appending the ratio to the list  
 Days\_Receivable\_List.append(Days\_Receivable)  
 Days\_Receivable\_Industry\_List.append(Days\_Receivable\_Industry)  
 Cost\_Of\_Goods\_Sold = ProfitAndLossSheet[Col][10]  
 Cost\_Of\_Goods\_Sold\_Industry = ProfitAndLossSheet\_Industry[Col][10]  
 Ending\_Inventory = ProfitAndLossSheet[Col][6]  
 Ending\_Inventory\_Industry = Balance\_Sheet\_Industry[Col][4]  
 Beginning\_Inventory = ProfitAndLossSheet\_Industry[Col][3]  
 Beginning\_Inventory\_Industry = Balance\_Sheet\_Industry[Col+1][4]  
 Average\_Inventory = (Ending\_Inventory + Beginning\_Inventory)/2  
 if Beginning\_Inventory\_Industry == 0:  
 Beginning\_Inventory\_Industry = Ending\_Inventory\_Industry  
 Average\_Inventory\_Industry = (Ending\_Inventory\_Industry + Beginning\_Inventory\_Industry) / 2  
 # Inventory Turn Over  
 Inventory\_TurnOver = Cost\_Of\_Goods\_Sold/Average\_Inventory  
 Inventory\_TurnOver\_Industry = Cost\_Of\_Goods\_Sold\_Industry/Average\_Inventory\_Industry  
 # Appending the ratio to the list  
 Inventory\_TurnOver\_List.append(Inventory\_TurnOver)  
 Inventory\_TurnOver\_Industry\_List.append(Inventory\_TurnOver\_Industry)  
 # Inventory Turn Over Period  
 Inventory\_TurnOver\_Period = 365/Inventory\_TurnOver  
 Inventory\_TurnOver\_Period\_Industry = 365/Inventory\_TurnOver\_Industry  
 # Appending the ratio to the list  
 Inventory\_TurnOver\_Period\_List.append(Inventory\_TurnOver\_Period)  
 Inventory\_TurnOver\_Period\_Industry\_List.append(Inventory\_TurnOver\_Period\_Industry)  
 # Fixed Asset Turn Over  
 Fixed\_Asset\_TurnOver = Cost\_Of\_Goods\_Sold/Total\_Assets  
 Fixed\_Asset\_TurnOver\_Industry = Cost\_Of\_Goods\_Sold\_Industry/Total\_Assets\_Industry  
 # Appending the ratio to the list  
 Fixed\_Asset\_TurnOver\_List.append(Fixed\_Asset\_TurnOver)  
 Fixed\_Asset\_TurnOver\_Industry\_List.append(Fixed\_Asset\_TurnOver\_Industry)  
 # Working Capital Turn Over  
 Working\_Capital\_TurnOver = Revenue/(Current\_Assets - Current\_Liabilities)  
 Working\_Capital\_TurnOver\_Industry = Revenue\_Industry/(Current\_Assets\_Industry-Current\_Liabilities\_Industry)  
 # Appending the ratio to the list  
 Working\_Capital\_TurnOver\_List.append(Working\_Capital\_TurnOver)  
 Working\_Capital\_TurnOver\_Industry\_List.append(Working\_Capital\_TurnOver\_Industry)  
 Total\_Liabilities = Balance\_Sheet[Col][33]  
 Total\_Liabilities\_Industry = Balance\_Sheet\_Industry[Col][33]  
 # Debt Ratio  
 Debt\_Ratio = Total\_Liabilities/Total\_Assets  
 Debt\_Ratio\_Industry = Total\_Liabilities\_Industry/Total\_Assets\_Industry  
 # Appending the ratio to the list  
 Debt\_Ratio\_List.append(Debt\_Ratio)  
 Debt\_ratio\_Industry\_List.append(Debt\_Ratio\_Industry)  
 # Debt to Equity Ratio  
 Debt\_Equity\_Ratio = Total\_Assets/Owners\_Equity  
 Debt\_Equity\_Ratio\_Industry = Total\_Assets\_Industry/Owners\_Equity\_Industry  
 # Appending the ratio to the list  
 Debt\_Equity\_Ratio\_List.append(Debt\_Equity\_Ratio)  
 Debt\_Equity\_Ratio\_Industry\_List.append(Debt\_Equity\_Ratio\_Industry)  
  
 # Common Size Analysis  
 # Appending the revenue to the list  
 Revenue\_List.append(Revenue)  
 # as a % of sales  
 Beginning\_Inventory\_Percentage = (Beginning\_Inventory/Revenue)\*100  
 Beginning\_Inventory\_Percentage\_List.append(Beginning\_Inventory\_Percentage)  
  
 Beginning\_Inventory\_Industry\_Percentage = (Beginning\_Inventory\_Industry/Revenue\_Industry)\*100  
 Beginning\_Inventory\_Industry\_Percentage\_List.append(Beginning\_Inventory\_Industry\_Percentage)  
  
 Purchases = ProfitAndLossSheet[Col][4]  
 Purchases\_Percentage = (Purchases/Revenue)\*100  
 Purchases\_Percentage\_List.append(Purchases\_Percentage)  
  
 Purchases\_Industry = ProfitAndLossSheet\_Industry[Col][4]  
 Purchases\_Industry\_Percentage = (Purchases\_Industry/Revenue\_Industry)\*100  
 Purchases\_Industry\_Percentage\_List.append(Purchases\_Industry\_Percentage)  
  
 Freight\_Expenses = ProfitAndLossSheet[Col][5]  
 Freight\_Expenses\_Percentage = (Freight\_Expenses/Revenue)\*100  
 Freight\_Expenses\_Percentage\_List.append(Freight\_Expenses\_Percentage)  
  
 Freight\_Expenses\_Industry = ProfitAndLossSheet\_Industry[Col][5]  
 Freight\_Expenses\_Industry\_Percentage = (Freight\_Expenses\_Industry/Revenue\_Industry)\*100  
 Freight\_Expenses\_Industry\_Percentage\_List.append(Freight\_Expenses\_Industry\_Percentage)  
  
 Ending\_Inventory\_Percentage = (Ending\_Inventory/Revenue)\*100  
 Ending\_Inventory\_Percentage\_List.append(Ending\_Inventory\_Percentage)  
  
 Ending\_Inventory\_Industry\_Percentage = (Ending\_Inventory\_Industry/Revenue\_Industry)\*100  
 Ending\_Inventory\_Industry\_Percentage\_List.append(Ending\_Inventory\_Industry\_Percentage)  
  
 Bill\_Of\_Materials = ProfitAndLossSheet[Col][7]  
 Bill\_Of\_Materials\_Percentage = (Bill\_Of\_Materials/Revenue)\*100  
 Bill\_Of\_Materials\_Percentage\_List.append(Bill\_Of\_Materials\_Percentage)  
  
 Bill\_Of\_Materials\_Industry = ProfitAndLossSheet\_Industry[Col][7]  
 Bill\_Of\_Materials\_Industry\_Percentage = (Bill\_Of\_Materials\_Industry/Revenue\_Industry)\*100  
 Bill\_Of\_Materials\_Industry\_Percentage\_List.append(Bill\_Of\_Materials\_Industry\_Percentage)  
  
 Labour\_Charges = ProfitAndLossSheet[Col][8]  
 Labour\_Charges\_Percentage = (Labour\_Charges/Revenue)\*100  
 Labour\_Charges\_Percentage\_List.append(Labour\_Charges\_Percentage)  
  
 Labour\_Charges\_Per\_Working\_Hour = Labour\_Charges/2592  
 Labour\_Charges\_Per\_Working\_Hour\_List.append(Labour\_Charges\_Per\_Working\_Hour)  
  
 Sub\_Contract\_Expenses = ProfitAndLossSheet[Col][9]  
 Sub\_Contract\_Expenses\_Percentage = (Sub\_Contract\_Expenses/Revenue)\*100  
 Sub\_Contract\_Expenses\_Percentage\_List.append(Sub\_Contract\_Expenses\_Percentage)  
  
 Cost\_Of\_Goods\_Sold = ProfitAndLossSheet[Col][10]  
 Cost\_Of\_Goods\_Sold\_Percentage = (Cost\_Of\_Goods\_Sold/Revenue)\*100  
 Cost\_Of\_Goods\_Sold\_Percentage\_List.append(Cost\_Of\_Goods\_Sold\_Percentage)  
  
 Cost\_Of\_Goods\_Sold\_Industry = ProfitAndLossSheet\_Industry[Col][10]  
 Cost\_Of\_Goods\_Sold\_Percentage\_Industry = (Cost\_Of\_Goods\_Sold\_Industry/Revenue\_Industry)\*100  
 Cost\_Of\_Goods\_Sold\_Percentage\_Industry\_List.append(Cost\_Of\_Goods\_Sold\_Percentage\_Industry)  
  
 Gross\_Profit\_Percentage\_List.append(Gross\_Margin)  
  
 Accounts\_Payable = Balance\_Sheet[Col][20]  
 Accounts\_Payable\_Days = (Accounts\_Payable \* 365 / Cost\_Of\_Goods\_Sold)  
 Accounts\_Payable\_Days\_List.append(Accounts\_Payable\_Days)  
  
 Accounts\_Payable\_Industry = Balance\_Sheet\_Industry[Col][20]  
 Accounts\_Payable\_Days\_Industry = (Accounts\_Payable\_Industry \* 365 / Cost\_Of\_Goods\_Sold\_Industry)  
 Accounts\_Payable\_Days\_Industry\_List.append(Accounts\_Payable\_Days\_Industry)  
  
 Business\_Development\_Expenses = ProfitAndLossSheet[Col][13]  
 Business\_Development\_Expenses\_Percentage = (Business\_Development\_Expenses/Revenue)\*100  
 Business\_Development\_Expenses\_Percentage\_List.append(Business\_Development\_Expenses\_Percentage)  
  
 Fuel\_Expenses = ProfitAndLossSheet[Col][14]  
 Fuel\_Expenses\_Percentage = (Fuel\_Expenses/Revenue)\*100  
 Fuel\_Expenses\_Percentage\_List.append(Fuel\_Expenses\_Percentage)  
  
 Conveyance\_Expenses = ProfitAndLossSheet[Col][15]  
 Conveyance\_Expenses\_Percentage = (Conveyance\_Expenses/Revenue)\*100  
 Conveyance\_Expenses\_Percentage\_List.append(Conveyance\_Expenses\_Percentage)  
  
 Telephone\_Expenses = ProfitAndLossSheet[Col][16]  
 Telephone\_Expenses\_Percentage = (Telephone\_Expenses/Revenue)\*100  
 Telephone\_Expenses\_Percentage\_List.append(Telephone\_Expenses\_Percentage)  
  
 Selling\_And\_Admin\_Expenses = ProfitAndLossSheet[Col][18]  
 Selling\_And\_Admin\_Expenses\_Percentage = (Selling\_And\_Admin\_Expenses/Revenue)\*100  
 Selling\_And\_Admin\_Expenses\_Percentage\_List.append(Selling\_And\_Admin\_Expenses\_Percentage)  
  
 Electricity\_Expenses = ProfitAndLossSheet[Col][20]  
 Electricity\_Expenses\_Percentage = (Electricity\_Expenses/Revenue)\*100  
 Electricity\_Expenses\_Percentage\_List.append(Electricity\_Expenses\_Percentage)  
  
 Vehicle\_Maintenance = ProfitAndLossSheet[Col][21]  
 Vehicle\_Maintenance\_Percentage = (Vehicle\_Maintenance/Revenue)\*100  
 Vehicle\_Maintenance\_Percentage\_List.append(Vehicle\_Maintenance\_Percentage)  
  
 Machine\_Maintenance = ProfitAndLossSheet[Col][22]  
 Machine\_Maintenance\_Percentage = (Machine\_Maintenance/Revenue)\*100  
 Machine\_Maintenance\_Percentage\_List.append(Machine\_Maintenance\_Percentage)  
  
 Rent = ProfitAndLossSheet[Col][23]  
 Rent\_Percentage = (Rent/Revenue)\*100  
 Rent\_Percentage\_List.append(Rent\_Percentage)  
  
 Consumables = ProfitAndLossSheet[Col][24]  
 Consumables\_Percentage = (Consumables/Revenue)\*100  
 Consumables\_Percentage\_List.append(Consumables\_Percentage)  
  
 Bank\_Charges = ProfitAndLossSheet[Col][25]  
 Bank\_Charges\_Percentage = (Bank\_Charges/Revenue)\*100  
 Bank\_Charges\_Percentage\_List.append(Bank\_Charges\_Percentage)  
  
 Other\_Operating\_Expenses = ProfitAndLossSheet[Col][27]  
 Other\_Operating\_Expenses\_Percentage = (Other\_Operating\_Expenses/Revenue)\*100  
 Other\_Operating\_Expenses\_Percentage\_List.append(Other\_Operating\_Expenses\_Percentage)  
  
 EBITDA = ProfitAndLossSheet[Col][29]  
 EBITDA\_Percentage = (EBITDA/Revenue)\*100  
 EBITDA\_Percentage\_List.append(EBITDA\_Percentage)  
  
 Depreciation\_Expense = ProfitAndLossSheet[Col][31]  
 Depreciation\_Expense\_Percentage = (Depreciation\_Expense/Revenue)\*100  
 Depreciation\_Expense\_Percentage\_List.append(Depreciation\_Expense\_Percentage)  
  
 Amortization\_Expense = ProfitAndLossSheet[Col][32]  
 Amortization\_Expense\_Percentage = (Amortization\_Expense/Revenue)\*100  
 Amortization\_Expense\_Percentage\_List.append(Amortization\_Expense\_Percentage)  
  
 Other\_Expenses = ProfitAndLossSheet[Col][33]  
 Other\_Expenses\_Percentage = (Other\_Expenses / Revenue)\*100  
 Other\_Expenses\_Percentage\_List.append(Other\_Expenses\_Percentage)  
  
 Operating\_Profit = ProfitAndLossSheet[Col][35]  
 Operating\_Profit\_Percentage = (Operating\_Profit/Revenue)\*100  
 Operating\_Profit\_Percentage\_List.append(Operating\_Profit\_Percentage)  
  
 Bank\_Interest\_Expense = ProfitAndLossSheet[Col][37]  
 Bank\_Interest\_Expense\_Percentage = (Bank\_Interest\_Expense/Revenue)\*100  
 Bank\_Interest\_Expense\_Percentage\_List.append(Bank\_Interest\_Expense\_Percentage)  
  
 Other\_Interest\_Expense = ProfitAndLossSheet[Col][38]  
 Other\_Interest\_Expense\_Percentage = (Other\_Interest\_Expense/Revenue)\*100  
 Other\_Interest\_Expense\_Percentage\_List.append(Other\_Interest\_Expense\_Percentage)  
  
 Total\_Interest\_Expense = ProfitAndLossSheet[Col][40]  
 Total\_Interest\_Expense\_Percentage = (Total\_Interest\_Expense/Revenue)\*100  
 Total\_Interest\_Expense\_Percentage\_List.append(Total\_Interest\_Expense\_Percentage)  
  
 Interest\_Expense\_Per\_Working\_Hour = Total\_Interest\_Expense/2592  
  
 Interest\_Expense\_Per\_Working\_Hour\_List.append(Interest\_Expense\_Per\_Working\_Hour)  
  
 Bank\_Interest\_Income = ProfitAndLossSheet[Col][42]  
 Bank\_Interest\_Income\_Percentage = (Bank\_Interest\_Income/Revenue)\*100  
 Bank\_Interest\_Income\_Percentage\_List.append(Bank\_Interest\_Income\_Percentage)  
  
 Other\_Interest\_Income = ProfitAndLossSheet[Col][43]  
 Other\_Interest\_Income\_Percentage = (Other\_Interest\_Income/Revenue)\*100  
 Other\_Interest\_Income\_Percentage\_List.append(Other\_Interest\_Income\_Percentage)  
  
 Total\_Interest\_Income = ProfitAndLossSheet[Col][45]  
 Total\_Interest\_Income\_Percentage = (Total\_Interest\_Income/Revenue)\*100  
 Total\_Interest\_Income\_Percentage\_List.append(Total\_Interest\_Income\_Percentage)  
  
 Net\_Income\_Before\_Taxes = ProfitAndLossSheet[Col][47]  
 Net\_Income\_Before\_Taxes\_Percentage = (Net\_Income\_Before\_Taxes/Revenue)\*100  
 Net\_Income\_Before\_Taxes\_Percentage\_List.append(Net\_Income\_Before\_Taxes\_Percentage)  
  
 Income\_Tax\_Expense = ProfitAndLossSheet[Col][49]  
 Income\_Tax\_Expense\_Percentage = (Income\_Tax\_Expense/Revenue)\*100  
 Income\_Tax\_Expense\_Percentage\_List.append(Income\_Tax\_Expense\_Percentage)  
  
 Net\_Income = ProfitAndLossSheet[Col][51]  
 Net\_Income\_Percentage = (Net\_Income/Revenue)\*100  
 Net\_Income\_Percentage\_List.append(Net\_Income\_Percentage)  
  
document = Document()  
  
  
# Common Size Analysis  
  
  
# Assets Trend Analysis  
for i in range(1, number\_of\_years+1):  
 Cash\_and\_Cash\_Equivalents = Balance\_Sheet[Col][1]  
 Cash\_and\_Cash\_Equivalents\_list.append(Cash\_and\_Cash\_Equivalents)  
  
 Deposit = Balance\_Sheet[Col][2]  
 Deposit\_list.append(Deposit)  
  
 Accounts\_Receivable = Balance\_Sheet[Col][3]  
 Accounts\_Receivable\_List.append(Accounts\_Receivable)  
  
 Inventory = Balance\_Sheet[Col][4]  
 Inventory\_List.append(Inventory)  
  
 Prepaid\_Expenses = Balance\_Sheet[Col][5]  
 Prepaid\_Expenses\_List.append(Prepaid\_Expenses)  
  
 Other\_Current\_Assets = Balance\_Sheet[Col][6]  
 Other\_Current\_Assets\_List.append(Other\_Current\_Assets)  
  
 Total\_Current\_Assets = Balance\_Sheet[Col][8]  
 Total\_Current\_Assets\_List.append(Other\_Current\_Assets)  
  
document.add\_heading("Liquidity Ratios")  
table = document.add\_table(rows=1, cols=4)  
hdr\_cells = table.rows[0].cells  
hdr\_cells[0].text = 'Ratio Name'  
for i in range(len(Year\_List)):  
 hdr\_cells[i + 1].text = str(Year\_List[i])  
#hdr\_cells[1].text = str(Year\_List[0])  
#hdr\_cells[2].text = str(Year\_List[1])  
#hdr\_cells[3].text = str(Year\_List[2])  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Current Ratio'  
for i in range(len(Year\_List)):  
 row\_cells[i+1].text = str(round(Current\_Ratio\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Quick Ratio'  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Quick\_Ratio\_List[i], 2))  
row\_cells = table.add\_row().cells  
  
plt.plot(Year\_List, Current\_Ratio\_List, 'r', Year\_List, Current\_Ratio\_Industry\_List, 'g')  
#plt.plot(Year\_List, Current\_Ratio\_List)  
plt.xlabel('Year')  
plt.title('Current ratio')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Current ratio')  
document.add\_picture('Current ratio.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Quick\_Ratio\_List, 'r', Year\_List, Quick\_Ratio\_Industry\_List, 'g')  
#plt.plot(Year\_List, Quick\_Ratio\_List)  
plt.xlabel('Year')  
plt.title('Quick Ratio')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Quick ratio')  
document.add\_picture('Quick ratio.png', width=Inches(4))  
plt.close()  
  
document.add\_heading("Profitability Ratios")  
table = document.add\_table(rows=1, cols=4)  
hdr\_cells = table.rows[0].cells  
hdr\_cells[0].text = 'Ratio Name'  
for i in range(len(Year\_List)):  
 hdr\_cells[i + 1].text = str(Year\_List[i])  
#hdr\_cells[1].text = str(Year\_List[0])  
#hdr\_cells[2].text = str(Year\_List[1])  
#hdr\_cells[3].text = str(Year\_List[2])  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Return On Assets'  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Return\_On\_Assets\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Return On Equity'  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Return\_On\_Equity\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Gross Margin'  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Gross\_Margin\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Profit Margin'  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Profit\_Margin\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Operating Margin'  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Operating\_Margin\_List[i], 2))  
  
plt.plot(Year\_List, Return\_On\_Assets\_List, 'r', Year\_List, Return\_On\_Assets\_Industry\_List, 'g')  
plt.xlabel('Year')  
plt.title('Return on Assets ')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Return on Assets')  
document.add\_picture('Return on Assets.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Return\_On\_Equity\_List, 'r', Year\_List, Return\_On\_Equity\_Industry\_List, 'g')  
plt.xlabel('Year')  
plt.title('Return On Equity ')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Return on Equity')  
document.add\_picture('Return on Equity.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Gross\_Margin\_List, 'r', Year\_List, Gross\_Margin\_Industry\_List, 'g')  
plt.xlabel('Year')  
plt.title('Gross Margin ')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Gross Margin')  
document.add\_picture('Gross Margin.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Profit\_Margin\_List, 'r', Year\_List, Profit\_Margin\_Industry\_List, 'g')  
plt.xlabel('Year')  
plt.title('Profit Margin')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Profit Margin')  
document.add\_picture('Profit Margin.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Operating\_Margin\_List, 'r', Year\_List, Operating\_Margin\_Industry\_List, 'g')  
plt.xlabel('Year')  
plt.title('Operating Margin')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Operating Margin')  
document.add\_picture('Operating Margin.png', width=Inches(4))  
plt.close()  
  
document.add\_heading("Activity Turn over Ratios")  
table = document.add\_table(rows=1, cols=4)  
hdr\_cells = table.rows[0].cells  
hdr\_cells[0].text = 'Ratio Name'  
for i in range(len(Year\_List)):  
 hdr\_cells[i + 1].text = str(Year\_List[i])  
#hdr\_cells[1].text = str(Year\_List[0])  
#hdr\_cells[2].text = str(Year\_List[1])  
#hdr\_cells[3].text = str(Year\_List[2])  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Asset Turn Over'  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Asset\_TurnOver\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Accounts Receivable Turnover'  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Accounts\_Receivable\_Turnover\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Average Days Sales'  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Average\_Days\_Sales\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Days Receivable'  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Days\_Receivable\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Days Payable'  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Accounts\_Payable\_Days\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Inventory Turnover'  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Inventory\_TurnOver\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Inventory Turnover Period'  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Inventory\_TurnOver\_Period\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Working Capital Turnover'  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Working\_Capital\_TurnOver\_List[i], 2))  
  
plt.plot(Year\_List, Asset\_TurnOver\_List, 'r', Year\_List, Asset\_TurnOver\_Industry\_List, 'g')  
plt.xlabel('Year')  
plt.title('Asset TurnOver')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Asset TurnOver')  
document.add\_picture('Asset TurnOver.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Average\_Days\_Sales\_List, 'r', Year\_List, Average\_Days\_Sales\_Industry\_List, 'g')  
plt.xlabel('Year')  
plt.title('Average Days Sales')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Average Days Sales')  
document.add\_picture('Average Days Sales.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Days\_Receivable\_List, 'r', Year\_List, Days\_Receivable\_Industry\_List, 'g')  
plt.xlabel('Year')  
plt.title('Days Receivables')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Days Receivables')  
document.add\_picture('Days Receivables.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Accounts\_Payable\_Days\_List, 'r', Year\_List, Accounts\_Payable\_Days\_Industry\_List, 'g')  
plt.xlabel('Year')  
plt.title('Days Payable')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Days Payable')  
document.add\_picture('Days Payable.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Inventory\_TurnOver\_List, 'r', Year\_List, Inventory\_TurnOver\_Industry\_List, 'g')  
plt.xlabel('Year')  
plt.title('Inventory')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Inventory Turn Over')  
document.add\_picture('Inventory Turn Over.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Inventory\_TurnOver\_Period\_List, 'r', Year\_List, Inventory\_TurnOver\_Period\_Industry\_List, 'g')  
plt.xlabel('Year')  
plt.title('Inventory Turn Over Period')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Inventory Turn Over Period')  
document.add\_picture('Inventory Turn Over Period.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Working\_Capital\_TurnOver\_List, 'r', Year\_List, Working\_Capital\_TurnOver\_Industry\_List, 'g')  
plt.xlabel('Year')  
plt.title('Working Capital Turnover')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Inventory Turn Over Period')  
document.add\_picture('Inventory Turn Over Period.png', width=Inches(4))  
plt.close()  
  
document.add\_heading("Solvency Ratios")  
table = document.add\_table(rows=1, cols=4)  
hdr\_cells = table.rows[0].cells  
hdr\_cells[0].text = 'Ratio Name'  
for i in range(len(Year\_List)):  
 hdr\_cells[i + 1].text = str(Year\_List[i])  
#hdr\_cells[1].text = str(Year\_List[0])  
#hdr\_cells[2].text = str(Year\_List[1])  
#hdr\_cells[3].text = str(Year\_List[2])  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Debt Ratio'  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Debt\_Ratio\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Debt To Equity Ratio'  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Debt\_Equity\_Ratio\_List[i], 2))  
  
plt.plot(Year\_List, Debt\_Ratio\_List, 'r', Year\_List, Debt\_ratio\_Industry\_List, 'g')  
plt.xlabel('Year')  
plt.title('Debt Ratio')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Debt Ratio')  
document.add\_picture('Debt Ratio.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Debt\_Equity\_Ratio\_List, 'r', Year\_List, Debt\_Equity\_Ratio\_Industry\_List, 'g')  
plt.xlabel('Year')  
plt.title('Debt Equity Ratio')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Debt Equity Ratio')  
document.add\_picture('Debt Equity Ratio.png', width=Inches(4))  
plt.close()  
  
document.add\_heading(" Common Size Analysis of Income Statements")  
table = document.add\_table(rows=1, cols=4)  
hdr\_cells = table.rows[0].cells  
hdr\_cells[0].text = 'Ratio Name'  
for i in range(len(Year\_List)):  
 hdr\_cells[i + 1].text = str(Year\_List[i])  
#hdr\_cells[1].text = str(Year\_List[0])  
#hdr\_cells[2].text = str(Year\_List[1])  
#hdr\_cells[3].text = str(Year\_List[2])  
row\_cells = table.add\_row().cells  
  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Beginning Inventory '  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Beginning\_Inventory\_Percentage\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Purchases '  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Purchases\_Percentage\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Freight Expenses'  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Freight\_Expenses\_Percentage\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Ending Inventory '  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Ending\_Inventory\_Percentage\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Bill Of Materials '  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Bill\_Of\_Materials\_Percentage\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Labour Expenses '  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Labour\_Charges\_Percentage\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Labour Charges Per Working Hour'  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Labour\_Charges\_Per\_Working\_Hour\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Sub Contract Expenses '  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Sub\_Contract\_Expenses\_Percentage\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Cost Of Goods Sold '  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Cost\_Of\_Goods\_Sold\_Percentage\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Business Development Expenses '  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Business\_Development\_Expenses\_Percentage\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Fuel Expenses '  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Fuel\_Expenses\_Percentage\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Conveyance Expenses '  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Conveyance\_Expenses\_Percentage\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Telephone Expenses '  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Telephone\_Expenses\_Percentage\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Selling & Admin Expenses '  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Selling\_And\_Admin\_Expenses\_Percentage\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Electricity Charges '  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Electricity\_Expenses\_Percentage\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Vehicle Maintenance '  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Vehicle\_Maintenance\_Percentage\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Machine Maintenance '  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Machine\_Maintenance\_Percentage\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Rent '  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Rent\_Percentage\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Consumables '  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Consumables\_Percentage\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Bank Charges '  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Bank\_Charges\_Percentage\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Other Operating Expenses '  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Other\_Operating\_Expenses\_Percentage\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'EBITDA '  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(EBITDA\_Percentage\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Depreciation '  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Depreciation\_Expense\_Percentage\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Amortization '  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Amortization\_Expense\_Percentage\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Other Expenses '  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Other\_Expenses\_Percentage\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Bank Interest Expense '  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Bank\_Interest\_Expense\_Percentage\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Other Interest Expense '  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Bank\_Interest\_Expense\_Percentage\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Total Interest Expense '  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Total\_Interest\_Expense\_Percentage\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Interest Expense Per Working Hour'  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Interest\_Expense\_Per\_Working\_Hour\_List[i], 2))  
  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Bank Interest Income '  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Bank\_Interest\_Income\_Percentage\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Other Interest Income '  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Other\_Interest\_Income\_Percentage\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Total Interest Income '  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Total\_Interest\_Income\_Percentage\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Net Income Before Taxes '  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Net\_Income\_Before\_Taxes\_Percentage\_List[i], 2))  
row\_cells = table.add\_row().cells  
row\_cells[0].text = 'Income Tax Expense '  
for i in range(len(Year\_List)):  
 row\_cells[i + 1].text = str(round(Income\_Tax\_Expense\_Percentage\_List[i], 2))  
  
plt.plot(Year\_List, Revenue\_List)  
plt.xlabel('Year')  
plt.title('Revenue')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Revenue')  
document.add\_picture('Revenue.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Beginning\_Inventory\_Percentage\_List)  
plt.xlabel('Year')  
plt.title('Beginning Inventory')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Beginning Inventory')  
document.add\_picture('Beginning Inventory.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Purchases\_Percentage\_List)  
plt.xlabel('Year')  
plt.title('Purchases')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Purchases')  
document.add\_picture('Purchases.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Freight\_Expenses\_Percentage\_List)  
plt.xlabel('Year')  
plt.title('Freight Expenses')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Freight Expenses')  
document.add\_picture('Freight Expenses.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Ending\_Inventory\_Percentage\_List)  
plt.xlabel('Year')  
plt.title('Ending Inventory')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Ending Inventory')  
document.add\_picture('Ending Inventory.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Bill\_Of\_Materials\_Percentage\_List)  
plt.xlabel('Year')  
plt.title('Bill Of Materials')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Bill Of Materials')  
document.add\_picture('Bill Of materials.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Labour\_Charges\_Percentage\_List)  
plt.xlabel('Year')  
plt.title('Labour Charges')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Labour charges')  
document.add\_picture('Labour Charges.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Labour\_Charges\_Per\_Working\_Hour\_List)  
plt.xlabel('Year')  
plt.title('Labour Charges Per Working Hour')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Labour charges Per Working Hour')  
document.add\_picture('Labour Charges Per Working Hour.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Sub\_Contract\_Expenses\_Percentage\_List)  
plt.xlabel('Year')  
plt.title('Sub Contract Expenses')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Sub Contract Expenses')  
document.add\_picture('Sub Contract Expenses.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Cost\_Of\_Goods\_Sold\_Percentage\_List)  
plt.xlabel('Year')  
plt.title('Cost Of Goods Sold')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Cost of Goods Sold')  
document.add\_picture('Cost of Goods Sold.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Gross\_Profit\_Percentage\_List)  
plt.xlabel('Year')  
plt.title('Gross Profit as a % of sales')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Gross Profit as a %')  
document.add\_picture('Gross Profit as a %.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Business\_Development\_Expenses\_Percentage\_List)  
plt.xlabel('Year')  
plt.title('Business Development Expenses')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Business Development Expenses')  
document.add\_picture('Business Development Expenses.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Fuel\_Expenses\_Percentage\_List)  
plt.xlabel('Year')  
plt.title('Fuel Expenses')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Fuel Expenses')  
document.add\_picture('Fuel Expenses.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Conveyance\_Expenses\_Percentage\_List)  
plt.xlabel('Year')  
plt.title('Conveyance Expenses')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Conveyance Expenses')  
document.add\_picture('Conveyance Expenses.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Telephone\_Expenses\_Percentage\_List)  
plt.xlabel('Year')  
plt.title('Telephone Expenses')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Telephone Expenses')  
document.add\_picture('Telephone Expenses.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Selling\_And\_Admin\_Expenses\_Percentage\_List)  
plt.xlabel('Year')  
plt.title('Selling & Admin Expenses')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Selling & Admin Expenses')  
document.add\_picture('Selling & Admin Expenses.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Electricity\_Expenses\_Percentage\_List)  
plt.xlabel('Year')  
plt.title('Electricity Expenses')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Electricity Expenses')  
document.add\_picture('Electricity Expenses.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Vehicle\_Maintenance\_Percentage\_List)  
plt.xlabel('Year')  
plt.title('Vehicle Maintenance')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Vehicle Maintenance')  
document.add\_picture('Vehicle Maintenance.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Machine\_Maintenance\_Percentage\_List)  
plt.xlabel('Year')  
plt.title('Machine Maintenance')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Machine Maintenance')  
document.add\_picture('Machine Maintenance.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Rent\_Percentage\_List)  
plt.xlabel('Year')  
plt.title('Rent')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Rent')  
document.add\_picture('Rent.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Consumables\_Percentage\_List)  
plt.xlabel('Year')  
plt.title('Consumables')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Consumables as a %')  
document.add\_picture('Consumables as a %.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Bank\_Charges\_Percentage\_List)  
plt.xlabel('Year')  
plt.title('Bank Charges')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Bank Charges as a %')  
document.add\_picture('Bank Charges as a %.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Other\_Operating\_Expenses\_Percentage\_List)  
plt.xlabel('Year')  
plt.title('Other Operating Expenses')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Other Operating Expenses')  
document.add\_picture('Other Operating Expenses.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, EBITDA\_Percentage\_List)  
plt.xlabel('Year')  
plt.title('EBITDA as a % of sales')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('EBITDA as a % of sales')  
document.add\_picture('EBITDA as a % of sales.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Depreciation\_Expense\_Percentage\_List)  
plt.xlabel('Year')  
plt.title('Depreciation Expense')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Depreciation Expense')  
document.add\_picture('Depreciation Expense.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Amortization\_Expense\_Percentage\_List)  
plt.xlabel('Year')  
plt.title('Amortization Expense')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Amortization Expense')  
document.add\_picture('Amortization Expense.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Other\_Expenses\_Percentage\_List)  
plt.xlabel('Year')  
plt.title('Other Expenses')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Other Expense')  
document.add\_picture('Other Expense.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Operating\_Profit\_Percentage\_List)  
plt.xlabel('Year')  
plt.title('Operating profit')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Operating Profit')  
document.add\_picture('Operating Profit.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Bank\_Interest\_Expense\_Percentage\_List)  
plt.xlabel('Year')  
plt.title('Bank Interest Expense')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Bank Interest Expense')  
document.add\_picture('Bank Interest Expense.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Other\_Interest\_Expense\_Percentage\_List)  
plt.xlabel('Year')  
plt.title('Other Interest Expense')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Other Interest Expense')  
document.add\_picture('Other Interest Expense.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Total\_Interest\_Expense\_Percentage\_List)  
plt.xlabel('Year')  
plt.title('Total Interest Expense')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Total Interest Expense')  
document.add\_picture('Total Interest Expense.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Interest\_Expense\_Per\_Working\_Hour\_List)  
plt.xlabel('Year')  
plt.title('Total Interest Expense')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Total Interest Expense')  
document.add\_picture('Total Interest Expense.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Bank\_Interest\_Income\_Percentage\_List)  
plt.xlabel('Year')  
plt.title('Bank Interest Income')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Bank Interest Income')  
document.add\_picture('Bank Interest Income.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Other\_Interest\_Income\_Percentage\_List)  
plt.xlabel('Year')  
plt.title('Other Interest Income')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Other Interest Income')  
document.add\_picture('Other Interest Income.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Total\_Interest\_Income\_Percentage\_List)  
plt.xlabel('Year')  
plt.title('Total Interest Income')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Total Interest Income')  
document.add\_picture('Total Interest Income.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Net\_Income\_Before\_Taxes\_Percentage\_List)  
plt.xlabel('Year')  
plt.title('Net Income Before Taxes')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Net Income Before Taxes as a %')  
document.add\_picture('Net Income Before Taxes as a %.png', width=Inches(4))  
plt.close()  
  
plt.plot(Year\_List, Income\_Tax\_Expense\_Percentage\_List)  
plt.xlabel('Year')  
plt.title('Income Tax Expenses')  
plt.xticks(np.arange(min(Year\_List), max(Year\_List)+1, 1.0))  
plt.savefig('Income Tax Expenses as a %')  
document.add\_picture('Income Tax Expenses as a %.png', width=Inches(4))  
plt.close()  
document.save('Ratios.docx')  
  
print("OverOver")