National College of Ireland

Configuration Manual

MSc Research Project

MSc in FinTech

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MSc Project Submission Sheet

School of Computing

Student Name:	Ashish Srivastava
Student ID:	22196412
Programme:	MSc in FinTech **Year:** 2024
Module:	MSc Research project
Lecturer:	Noel Cosgrove, Sean Heeney
Submission Due Date:	12Th August 2024
Project Title:	Project mBridge and the Future of Cross-Border Payments: Assessing the Adequacy of Gold Reserves in a Multi-Currency World
Word Count:	6476 **Page Count:** 22

I hereby certify that the information contained in this (my submission) is information pertaining to research I conducted for this project. All information other than my own contribution will be fully referenced and listed in the relevant bibliography section at the rear of the project.
ALL internet material must be referenced in the bibliography section. Students are required to use the Referencing Standard specified in the report template. To use other author's written or electronic work is illegal (plagiarism) and may result in disciplinary action.

Signature: Ashish Srivastava

Date: 12/8/24

PLEASE READ THE FOLLOWING INSTRUCTIONS AND CHECKLIST

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Attach a Moodle submission receipt of the online project submission, to each project (including multiple copies).	□
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Signature:	
Date:	
Penalty Applied (if applicable):	

Configuration Manual

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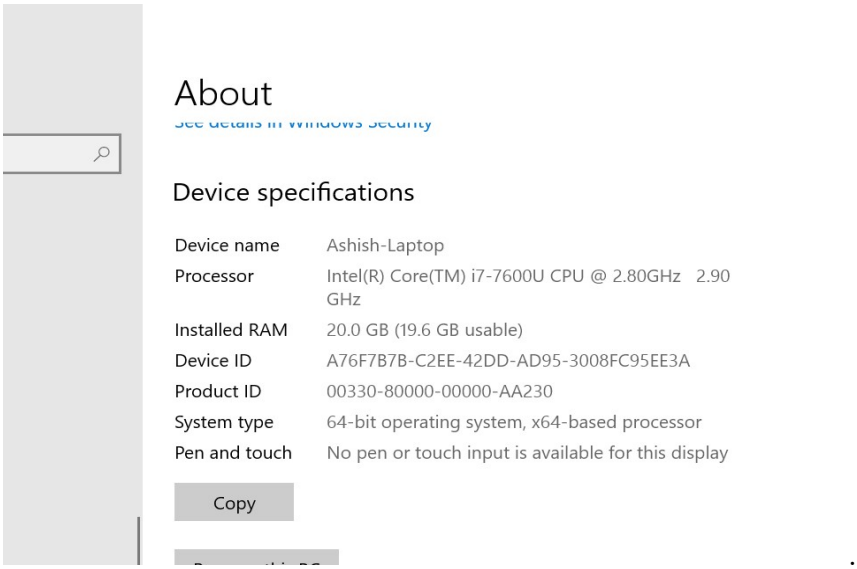
Student ID: 22196412

1 Hardware/Software specification



2 Coding notebook

Google colab is used for this purpose due to its all pervasiveness with coding languages.

3 Coding language used

Python 3.11.8 is for all coding purposes.

4 Libraries used

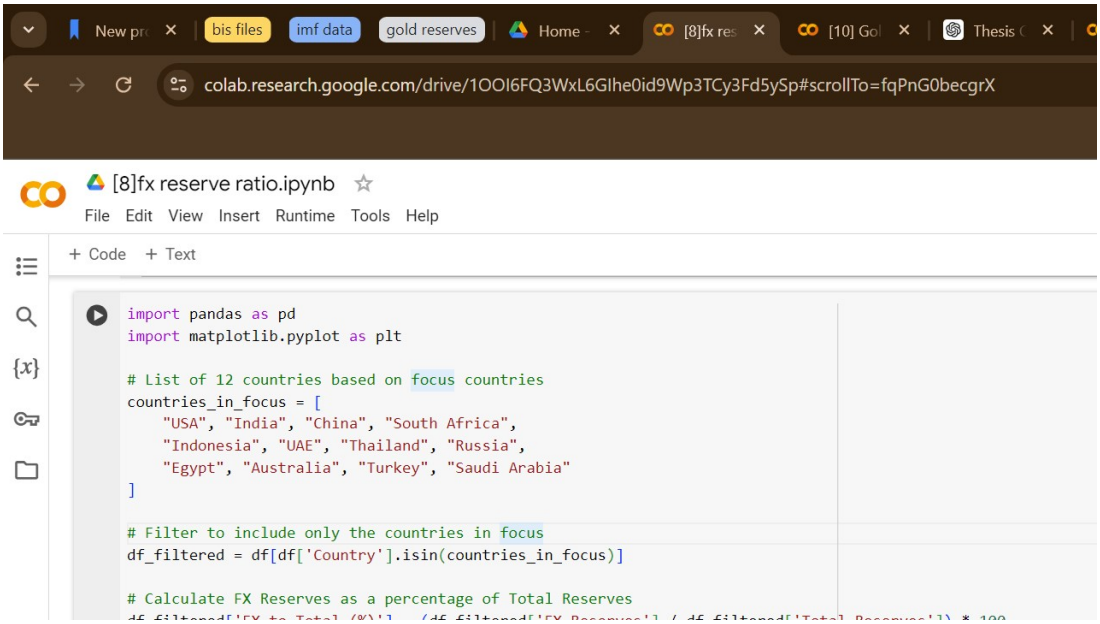
1. **pandas**: Used for data manipulation and analysis, particularly for handling and processing tabular data in DataFrames.
2. **matplotlib.pyplot**: Utilized for creating static, interactive, and animated visualizations, such as plots and charts.
3. **numpy**: Employed for numerical computations, especially for handling arrays and performing mathematical operations.
4. **seaborn**: Applied for statistical data visualization, providing an interface to draw attractive and informative statistical graphics.

5 Example implementation

CODE:

```
import pandas as pd
import matplotlib.pyplot as plt

# List of 12 countries based on focus countries
countries_in_focus = [
   "USA", "India", "China", "South Africa",
   "Indonesia", "UAE", "Thailand", "Russia",
   "Egypt", "Australia", "Turkey", "Saudi Arabia"
]

# Filter to include only the countries in focus
df_filtered = df[df['Country'].isin(countries_in_focus)]

# Calculate FX Reserves as a percentage of Total Reserves
df_filtered['FX to Total (%)'] = (df_filtered['FX Reserves'] / df_filtered['Total Reserves']) * 100

# Sort the dataframe by percentage for better visualization
df_filtered = df_filtered.sort_values('FX to Total (%)', ascending=False)

# List of country names
country_names = df_filtered['Country'].tolist()

# Plotting the percentage as a bar chart
fig, ax = plt.subplots(figsize=(10, 6))

# Plot the FX Reserves to Total Reserves percentage
bars = ax.barh(df_filtered['Country'], df_filtered['FX to Total (%)'], color='skyblue')

# Add percentage labels to each bar
for bar in bars:
   ax.text(bar.get_width() + 1, bar.get_y() + bar.get_height()/2, f'{bar.get_width():.1f}%', ha='center',
va='center', fontsize=10, fontweight='bold')

# Customize the plot with improved visuals
ax.set_xlabel('FX Reserves to Total Reserves (%)', fontsize=14, fontweight='bold')
ax.set_title('FX Reserves as a Percentage of Total Reserves by Country', fontsize=16, fontweight='bold',
color='darkblue')
ax.set_xlim(0, 100)  # Limit the x-axis to 100% for better readability

# Show the plot with tight layout for better spacing
plt.tight_layout()
plt.show()

# Output the list of country names
country_names
```

INPUT:



OUTPUT: