

## #Problem Statement:

we have been given a product note for the Nippon India Short Term Fund. Our task is to develop a QA system capable of responding to inquiries related to the document.

Dataset: <https://mf.nipponindiaim.com/FundsAndPerformance/ProductNotes/NipponIndia-Short-Term-Fund-Jan-2024.pdf>

Steps to be implemented-

- 1.Read/Load PDF
- 2.Configure chat completion api from OpenAI
- 3.Use in-context learning

```
!pip install openai PyPDF2

Requirement already satisfied: openai in
/usr/local/lib/python3.11/dist-packages (1.70.0)
Collecting PyPDF2
  Downloading pypdf2-3.0.1-py3-none-any.whl.metadata (6.8 kB)
Requirement already satisfied: anyio<5,>=3.5.0 in
/usr/local/lib/python3.11/dist-packages (from openai) (4.9.0)
Requirement already satisfied: distro<2,>=1.7.0 in
/usr/local/lib/python3.11/dist-packages (from openai) (1.9.0)
Requirement already satisfied: httpx<1,>=0.23.0 in
/usr/local/lib/python3.11/dist-packages (from openai) (0.28.1)
Requirement already satisfied: jiter<1,>=0.4.0 in
/usr/local/lib/python3.11/dist-packages (from openai) (0.9.0)
Requirement already satisfied: pydantic<3,>=1.9.0 in
/usr/local/lib/python3.11/dist-packages (from openai) (2.11.2)
Requirement already satisfied: sniffio in
/usr/local/lib/python3.11/dist-packages (from openai) (1.3.1)
Requirement already satisfied: tqdm>4 in
/usr/local/lib/python3.11/dist-packages (from openai) (4.67.1)
Requirement already satisfied: typing-extensions<5,>=4.11 in
/usr/local/lib/python3.11/dist-packages (from openai) (4.13.1)
Requirement already satisfied: idna>=2.8 in
/usr/local/lib/python3.11/dist-packages (from anyio<5,>=3.5.0->openai)
(3.10)
Requirement already satisfied: certifi in
/usr/local/lib/python3.11/dist-packages (from httpx<1,>=0.23.0-
>openai) (2025.1.31)
Requirement already satisfied: httpcore==1.* in
/usr/local/lib/python3.11/dist-packages (from httpx<1,>=0.23.0-
>openai) (1.0.7)
Requirement already satisfied: h11<0.15,>=0.13 in
/usr/local/lib/python3.11/dist-packages (from httpcore==1.*-
>httpx<1,>=0.23.0->openai) (0.14.0)
Requirement already satisfied: annotated-types>=0.6.0 in
```

```
/usr/local/lib/python3.11/dist-packages (from pydantic<3,>=1.9.0-  
>openai) (0.7.0)  
Requirement already satisfied: pydantic-core==2.33.1 in  
/usr/local/lib/python3.11/dist-packages (from pydantic<3,>=1.9.0-  
>openai) (2.33.1)  
Requirement already satisfied: typing-inspection>=0.4.0 in  
/usr/local/lib/python3.11/dist-packages (from pydantic<3,>=1.9.0-  
>openai) (0.4.0)  
Downloading pypdf2-3.0.1-py3-none-any.whl (232 kB)  
232.6/232.6 kB 6.0 MB/s eta  
0:00:00
```

```
import openai  
from PyPDF2 import PdfReader  
  
from google.colab import drive,userdata  
drive.mount('/content/drive')  
API_KEY=userdata.get('OPENAI_API_KEY')  
  
Mounted at /content/drive  
  
openai.api_key=API_KEY  
  
pdf_path="/content/drive/MyDrive/Colab  
Notebooks/datasets/Financial_Chatbot/NipponIndia-Short-Term-Fund-Jan-  
2024.pdf"  
  
def extract_text_from_pdf(file_path):  
    reader=PdfReader(file_path)  
    text=''  
    for page in reader.pages:  
        content=page.extract_text()  
        if content:  
            text += content;  
    return text;  
  
document_text=extract_text_from_pdf(pdf_path)  
print(document_text)
```

Investment Horizon: 1 - 3 years  
Contact your Mutual Fund Distributor | Call 1860 266 0111#,  
91-22-6925 9696# (For investors outside India) |  
Visit [mf.nipponindiaim.com](https://mf.nipponindiaim.com)  
#Charges applicable.Nippon India  
Short Term Fund  
(An open ended short term debt scheme investing in  
instruments such that the Macaulay duration of the  
portfolio is between 1 to 3 years . Relatively High interest  
rate risk and moderate Credit Risk)  
Mutual Fund investments are subject to market risks, read all scheme  
related documents carefully.This product is suitable for investors who

are seeking\*

- Income over short term
  - Investment in debt & money market instruments with portfolio Macaulay Duration between 1 -3 years
  - \*Investors should consult their financial advisors if in doubt about whether the product is suitable for them.
- Benchmark Riskometer Nippon India Short Term Fund  
CRISIL Short Duration Debt  
B-II Index

Investors understand that their principal will be at Moderate risk  
Benchmark Riskometer is at Moderate risk  
Product label Potential Risk Class  
About Nippon India Short Term Fund

The primary investment objective of the scheme is to generate stable returns -

turns for investors with a short term investment horizon by investing in

Debt & Money Market Instruments.

Current Investment Strategy

❖The fund Investments would predominantly be into corporate bonds,

G-Secs and money market instruments predominantly into 1 - 5 years

duration bucket

❖Strategy is to enhance returns through asset allocation and shape of the yield curve

❖Better credit quality assets (75-85% AAA) ; 70-100% in upto 3 years

assets and 0-30% in 3 to 5 years assets, 15-20% tactical allocation to G-

Secs/SDLs based on absolute yield and spread views

❖The fund would run moderate duration strategy, which would be maintained in the range of 1.25 years to 2.75 years

Note : Above mentioned current investment strategy is based on the prevailing market conditions and is subject to change within the limits of the SID basis the fund manager's view .

Who should invest?

❖Investors seeking accrual return with the potential for moderate capital gains along with downward curve shift and steepness would aid relatively better returns

❖Investors seeking protection in rising yields scenario due to roll down

benefit and high absolute yields

❖Ideal for Investors with moderate appetite for volatility and investment

horizon of around 1 - 3 years  
 Inception Date  
 Fund Manager#December 18, 2002  
 Sushil Budhia , Vivek Sharma  
 Minimum Application  
 Amount  
 BenchmarkRs. 5,000 & in multiples of Rs.1 thereafter  
 CRISIL Short Duration B -II Index  
 Month end AUM as on  
 January 31, 2024 Rs. 5, 967.53 Crs  
 Plans & Options  
 Exit Load\*\*  
 (\*\* If charged, the same shall  
 be credited to the scheme  
 immediately net of goods &  
 service tax, if any)i)Growth Plan/Direct Plan - Growth Plan :  
 Growth Option  
 ii)a) IDCW Plan/ Direct Plan - IDCW Plan  
 - IDCW Option  
 b) IDCW Plan/ Direct Plan - IDCW Plan  
 with the frequency of Monthly,  
 Quarterly)  
 Both the above mentioned IDCW  
 plan/ Direct Plan - IDCW Plan offers  
 Payout of IDCW and Reinvestment  
 of IDCW facility.  
 Nil  
 #Kinjal Desai : Dedicated Fund Manager for Overseas Investments  
 Note - IDCW: Income Distribution cum capital withdrawal Options/Plans.  
 Rating Profile as on January 31, 2024  
 The emphasis of the fund is to invest predominantly into high  
 rated AAA  
 and equivalent securities which aims to generate a healthy risk  
 return  
 ratio .  
 Asset Allocation as on January 31, 2024Scheme Attributes as on  
 January 31, 2024  
 Weighted Average YTM \* 7.85%  
 Weighted Average Maturity 3.47 Years  
 Modified Duration 2.69 Years  
 Portfolio as on January 31, 2024  
 Company/Issuer Rating% of  
 Assets  
 Certificate of Deposit 1.56%  
 Axis Bank Limited CRISIL A1+ 1.56%  
 Commercial Paper 0.82%  
 HDFC Bank Limited CRISIL A1+ 0.82%  
 Corporate Bond 57.43%  
 REC Limited CRISIL AAA 6.83%

Small Industries Dev Bank of India ICRA  
 AAA/CRISIL  
 AAA 5.21%  
 National Bank For Agriculture and Rural  
 Development CRISIL  
 AAA/ICRA  
 AAA 5.02%  
 Power Finance Corporation Limited CRISIL AAA 3.91%  
 Bharti Telecom Limited CRISIL AA+ 3.55%  
 Muthoot Finance Limited CRISIL AA+ 3.35%  
 HDFC Bank Limited CRISIL AAA 3.04%  
 LIC Housing Finance Limited CRISIL AAA 2.92%  
 India Grid Trust InvIT Fund (India Grid Trust  
 Group) CRISIL AAA 2.65%  
 Torrent Power Limited (Torrent group) CRISIL AA+ 2.65%  
 Mahindra & Mahindra Financial Services  
 Limited CRISIL AAA 2%  
 PNB Housing Finance Limited ICRA AA 1.68%  
 Titan Company Limited CRISIL AAA 1.67%  
 Samvardhana Motherson International  
 Limited FITCH AAA 1.5%  
 Grasim Industries Limited CRISIL AAA 1.5%  
 360 One Prime Limited CRISIL AA 1.42%  
 Tata Capital Limited ICRA AAA 1.26%  
 HDB Financial Services Limited CRISIL AAA 1.08%  
 Summit Digital Infrastructure Limited  
 (BROOKFIELD GROUP) CRISIL AAA 0.84%  
 Jamnagar Utilities & Power Private Limited  
 (Mukesh Ambani Group) CRISIL AAA 0.84%  
 Swarna Tollway Private Limited (MACQUARIE  
 GROUP) CRISIL AAA 0.72%  
 Larsen & Toubro Limited CRISIL AAA 0.59%  
 Tata Capital Housing Finance Limited CRISIL AAA 0.57%  
 Power Grid Corporation of India Limited CRISIL AAA 0.54%  
 Kotak Mahindra Prime Limited CRISIL AAA 0.5%  
 The Federal Bank Limited FITCH AA 0.45%  
 Shriram Finance Limited CRISIL AA+ 0.42%  
 NTPC Limited CRISIL AAA 0.41%  
 Bajaj Housing Finance Limited CRISIL AAA 0.25%  
 NHPC Limited CARE AAA 0.05%  
 India Infradebt Limited (India Infradebt  
 Limited) CRISIL AAA 0.02%  
 Government Bond 23.95%  
 Government of India SOV 23.95%

\*In case of semi annual YTM, it has been annualised Risk factors :  
 Trading volumes and settlement periods may restrict liquidity  
 in equity and debt investments . Investment in Debt is subject to  
 price, credit,  
 and interest rate risk. The NAV of the Scheme may be affected,

inter alia, by changes in the market conditions, interest rates, trading volumes, settlement periods and transfer procedures. The NAV may also be subjected to risk associated with investment in derivatives, foreign securities or script lending as may be permissible by the Scheme Information Document.

Disclaimers : The information herein above is meant only for general reading purposes and the views being expressed only constitute opinions and therefore cannot be considered as guidelines, recommendations or as a professional guide for the readers. Before making any investments, the readers are advised to seek independent professional advice, verify the contents in order to arrive at an informed investment decision.

None of the Sponsor, the Investment Manager, the Trustee, their respective directors, employees, associates or representatives shall be liable in any way for any direct, indirect, special, incidental, consequential, punitive or exemplary damages, including on account of lost profits arising from the information contained in this material.

Mutual Fund Investments are subject to market risks, read all scheme related documents carefully. State Government Securities 7.81% Treasury Bill 0.33%

Government of India 0.33%

Corporate Debt Market Development Fund 0.26%

Corporate Debt Market Development Fund

Class A 0.26%

PTC 2.17%

Sansar Trust (PTC of pools from Shriram

Transport Finance Corporation) ICRA AAA(SO) 1.55%

First Business Receivables Trust (Mukesh

Ambani Group (PTC backed by receivables

from Reliance group entities)) CRISIL

AAA(SO)/CRISIL

L AAA(SO) 0.61%

Cash & Other Receivables 5.68%

Grand Total 100%

#Creating Question Asking functionality

```
def ask_question(question, context):
    messages = [
        {"role": "system", "content": "You are a helpful assistant for answering questions about mutual fund documents."},
        {"role": "user", "content": f"Here is a product note:\n\n{context}"},
        {"role": "user", "content": f"Based on the above product note, answer this question:\n\n{question}"} ]
```

```
response=openai.ChatCompletion.create(  
    model="gpt-4",  
    messages=messages,  
    temperature=0.2  
)  
return response.choices[0].message['content']
```

#Test the Chatbot **1st Question**

```
question = "What are the key features of the Nippon India Short Term  
Fund?"  
answer = ask_question(question,document_text)  
  
print("Q:", question)  
print("A:", answer)
```

Q: What are the key features of the Nippon India Short Term Fund?

A: The key features of the Nippon India Short Term Fund are:

1. **Fund Type:** Open-ended short-term debt scheme.
2. **Investment Horizon:** Suitable for investors with a 1 to 3-year investment horizon.
3. **Objective:** To generate stable returns through investment in debt and money market instruments.
4. **Portfolio Duration:** Macaulay duration between 1 to 3 years; currently maintained in the range of 1.25 to 2.75 years.
5. **Current Strategy:**
  - Predominantly invests in corporate bonds, G-Secs, and money market instruments in the 1–5 year bucket.
  - 70-100% in up to 3-year assets, 0-30% in 3–5-year assets.
  - 15-20% tactical allocation to G-Secs/SDLs.
  - Emphasis on high credit quality (75–85% AAA rated).
6. **Risk Profile:** Moderate risk—relatively high interest rate risk and moderate credit risk.
7. **Who Should Invest:**
  - Investors seeking short-term income with moderate volatility.
  - Those looking for accrual returns with potential moderate capital gains.
  - Suitable in a rising yield scenario due to roll-down benefit and high absolute yields.
8. **Benchmark:** CRISIL Short Duration Debt B-II Index.
9. **Minimum Investment:** ₹5,000 and in multiples of ₹1 thereafter.
10. **Fund Managers:** Sushil Budhia, Vivek Sharma.
11. **AUM (Jan 31, 2024):** ₹5,967.53 Crores.
12. **Exit Load:** Nil.
13. **YTM and Maturity (as on Jan 31, 2024):**
  - Weighted Average YTM: 7.85%
  - Weighted Average Maturity: 3.47 years

- Modified Duration: 2.69 years

This fund is best suited for investors with a short-term horizon who seek moderate returns with a focus on capital preservation and high credit quality investments.

## 2nd Question

```
question = "Who should consider investing in the Nippon India Short Term Fund?"
answer = ask_question(question, document_text)
print("Q:", question)
print("A:", answer)
```

Q: Who should consider investing in the Nippon India Short Term Fund?

A: This fund is suitable for investors seeking income over a short term, particularly with an investment horizon of 1 to 3 years. It is ideal for those with a moderate risk appetite who are looking for accrual returns with the potential for moderate capital gains. The fund may also suit investors aiming for protection in rising yield scenarios due to roll-down benefits and high absolute yields.

## 3rd Question

```
question = "What is the current investment strategy of the Nippon India Short Term Fund?"
answer = ask_question(question, document_text)
print("Q:", question)
print("A:", answer)
```

Q: What is the current investment strategy of the Nippon India Short Term Fund?

A: The current strategy focuses on investing predominantly in corporate bonds, G-Secs, and money market instruments within the 1-5 year duration bucket. The fund targets 70-100% allocation to assets up to 3 years and 0-30% in 3-5 year assets. Approximately 75-85% of the portfolio comprises AAA-rated securities. A tactical allocation of 15-20% is made to G-Secs/SDLs based on absolute yield and spread views. The fund maintains a moderate duration strategy, ranging between 1.25 to 2.75 years.

## 4th question

```
question = "What are the key risk factors associated with this scheme?"
answer = ask_question(question, document_text)
print("Q:", question)
print("A:", answer)
```

Q: What are the key risk factors associated with this scheme?

A: Key risk factors include price, credit, and interest rate risks related to debt investments. The NAV of the scheme may also be impacted by market conditions, interest rate changes, trading



volumes, and settlement delays. Additional risks may arise from investments in derivatives, foreign securities, or securities lending, as permitted by the Scheme Information Document.

