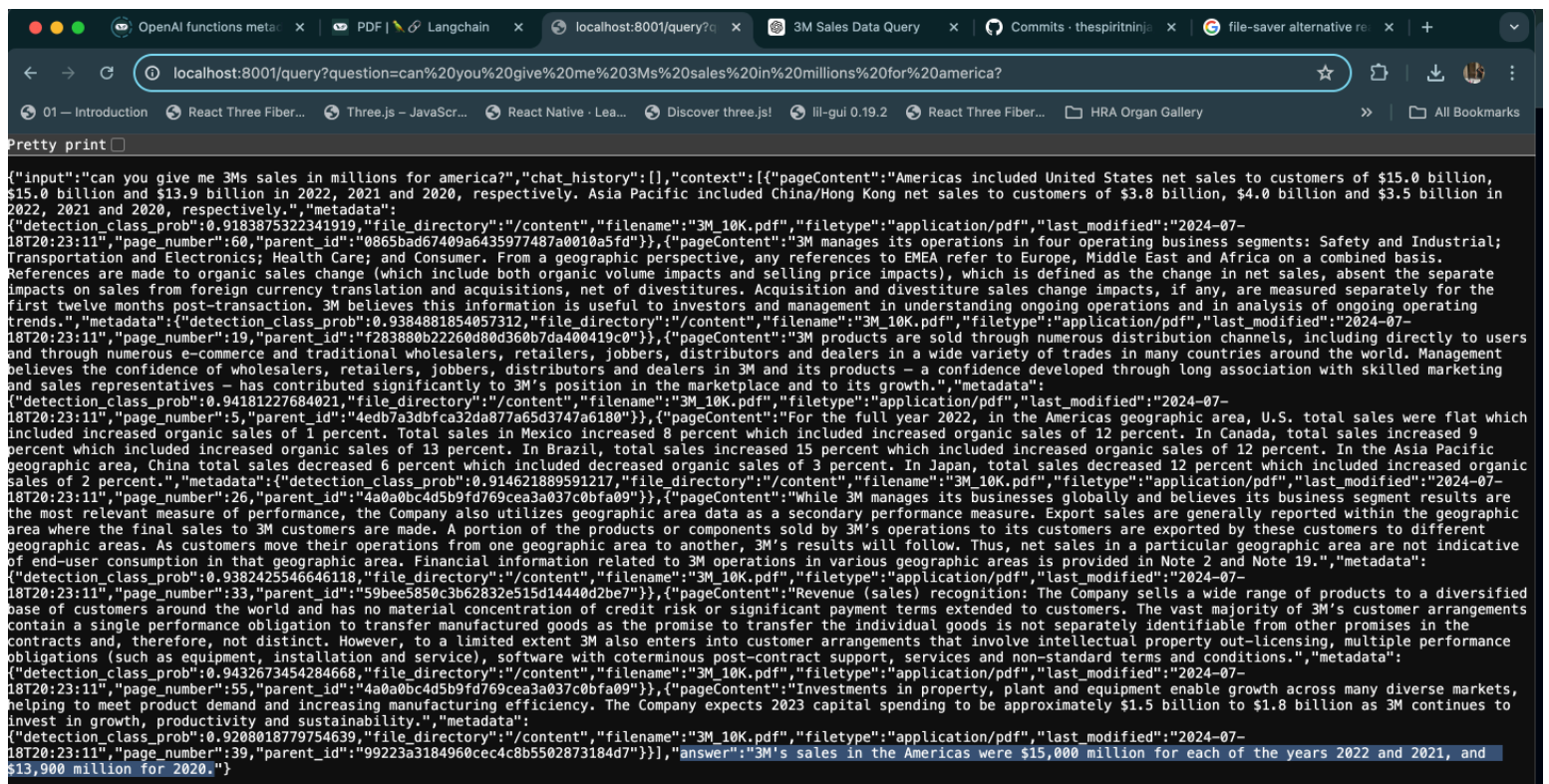
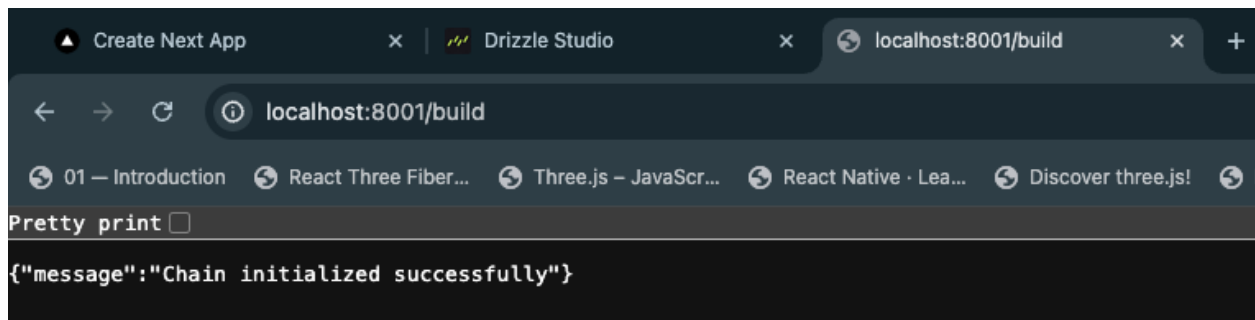
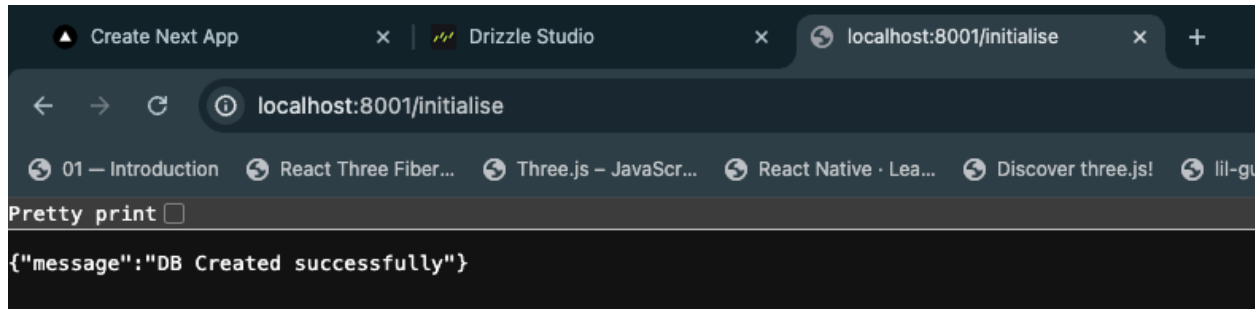


:Example Usage and Journey Document:

Backend Development:

- For the application to interact with I created a RESTful Backend service on NodeJS and used chromadb to store the pdf data as chunks for context info.
- The query was being processed correctly and I did get responses from the RAG-Model that I had designed primitively for the usecase. [PFB Screenshots]



- However, for some reason I found out that the chroma db was not storing the page context coordinates [i.e numericals] in the vectorDB
- I needed the page coordinates as highlighting the context was a big use case from my end that I wanted to have implemented.
- I did not want to spend more than a day rectifying the issue as I had to respect the 48HR timeline. Also, the query response data structure is bound to change and has to be adapted to your model response in the future.
- I decided to proceed with a sample JSON query response data [attached with the email] to build and display on the application.
- Please feel free to go through the backend server code, I'd appreciate your reviews on it as well.

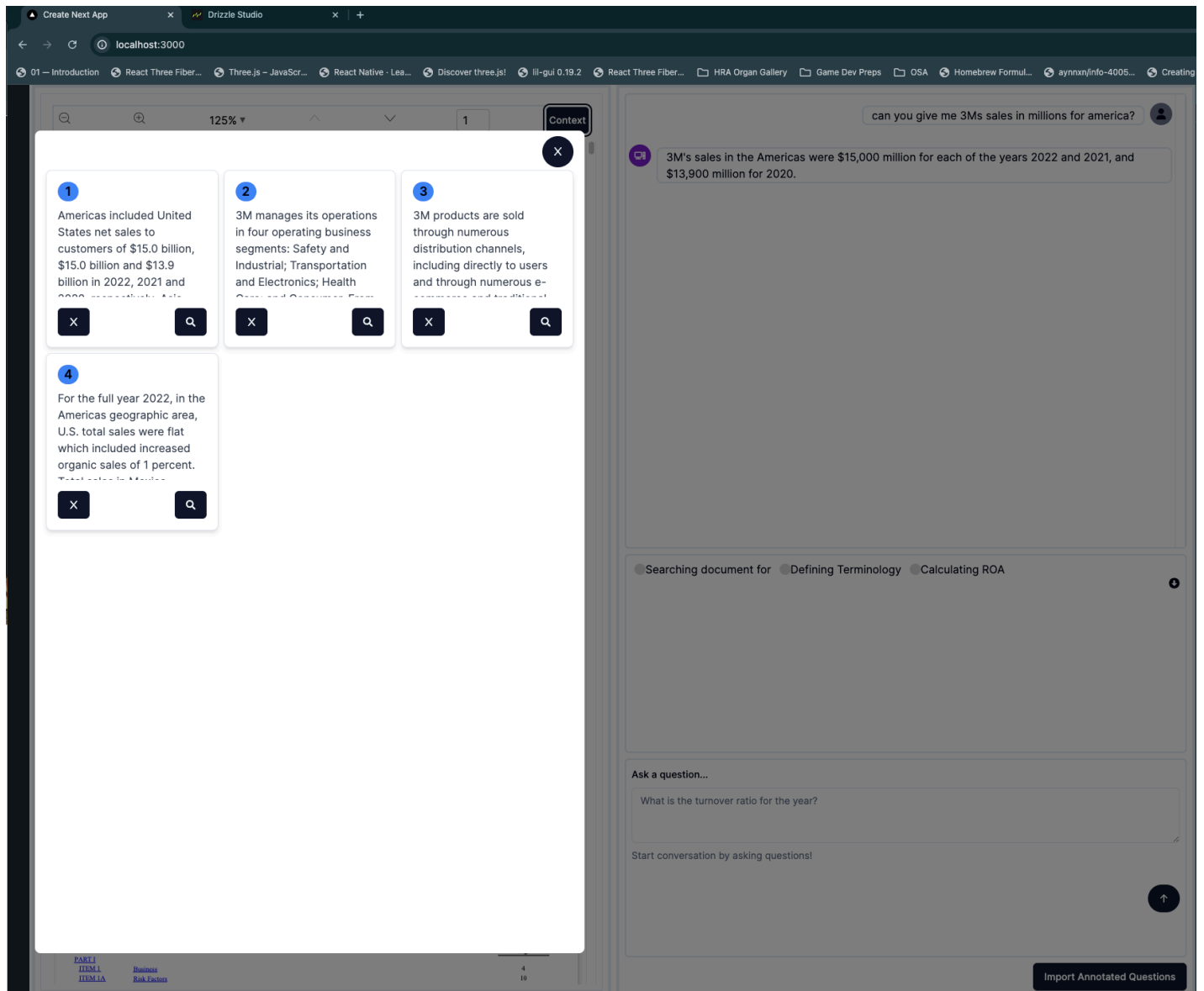
Frontend Development:

- I've built the frontend using NextJS and have integrated a Postgres DB using Drizzle ORM to store and retrieve questions data.
- This is how the frontend looks like:

The screenshot displays a web application interface. On the left, a document viewer shows a SEC Form 10-K for 3M Company, dated December 31, 2022. The document is titled "UNITED STATES SECURITIES AND EXCHANGE COMMISSION FORM 10-K" and includes sections for "ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934" and "TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934". The document is for the fiscal year ended December 31, 2022, and the transition period from 2020 to 2021. The document is filed with the Commission file number 1-3285 and is titled "3M COMPANY". The document includes a table of contents and a table of securities.

On the right, a chat interface is visible. It features a search bar with the text "can you give me 3Ms sales in millions for america?". Below the search bar, a chat bubble contains the response: "3M's sales in the Americas were \$15,000 million for each of the years 2022 and 2021, and \$13,900 million for 2020." Below the chat bubble, there are three tabs: "Searching document for", "Defining Terminology", and "Calculating ROA". Below the tabs, there is a section titled "Ask a question..." with a text input field containing the text "What is the turnover ratio for the year?". Below the input field, there is a button labeled "Start conversation by asking questions!". At the bottom right, there is a button labeled "Import Annotated Questions".

- Please note that I've used a sample response(static) data which I expected to work with and the frontend is not connected to the backend as I couldn't get the coordinates details returned from the server.
- The left part of the screen has a PDF Viewer and is interactable, also the context button on the top right is supposed to be populated/updated w.r.t every response you receive for the question asked.
- Upon clicking the context button a modal is shown and when you click on the search button it takes you to the page and shows the context highlighted as shown below.
The highlighted context is only possible through the coordinates.



Drizzle Studio interface showing a document viewer on the left and a chat interface on the right.

Document Viewer (Left Panel):

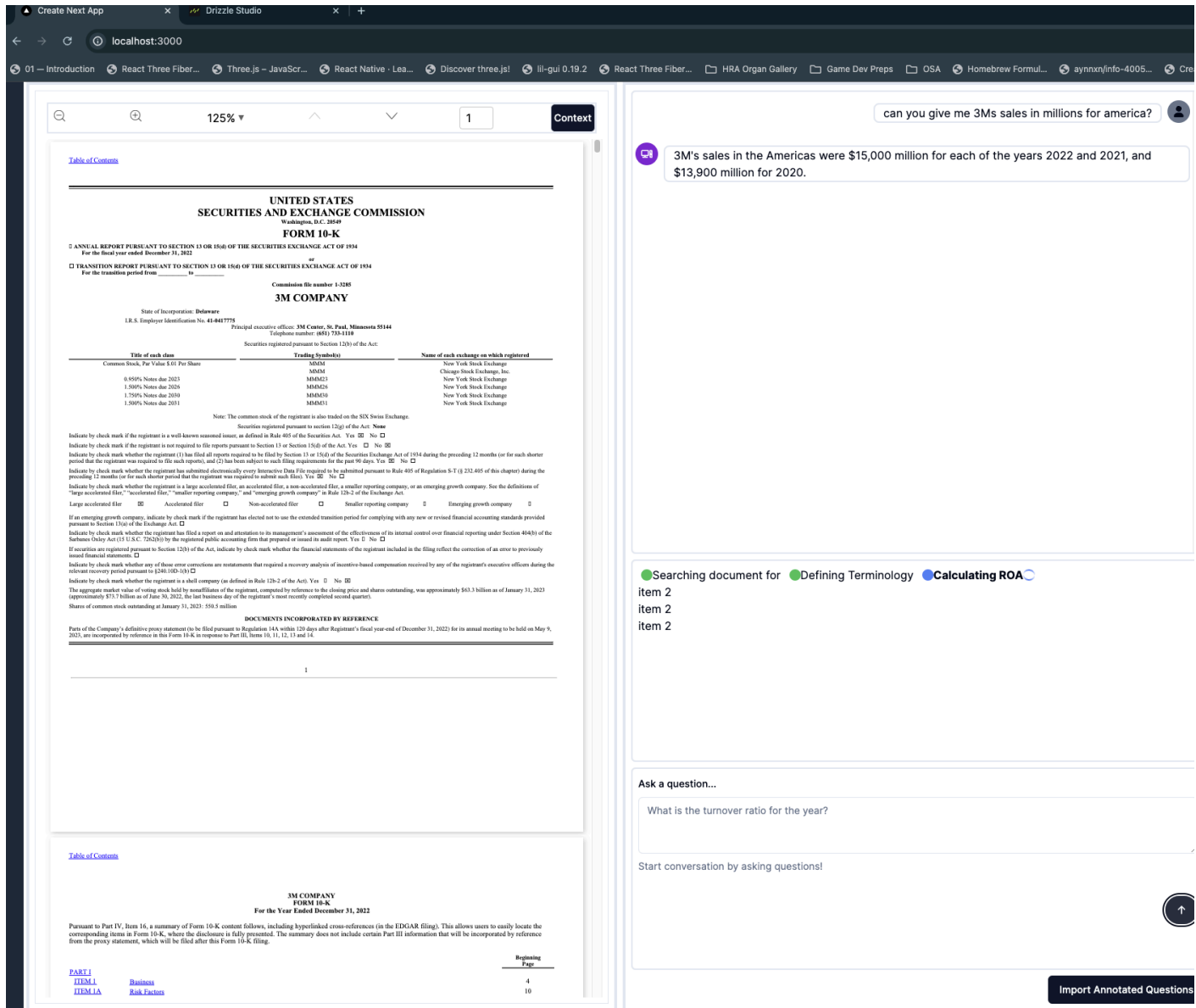
- Search bar: 125% zoom, 19 pages, Context button.
- Table of Contents: Item 7: Management's Discussion and Analysis of Financial Condition and Results of Operations.
- Section 7: Management's Discussion and Analysis of Financial Condition and Results of Operations.
- Forward-looking statements in Item 7 may involve risks and uncertainties that could cause results to differ materially from those projected (refer to the section entitled "Cautionary Note Concerning Factors That May Affect Future Results" in Item 1 and the risk factors provided in Item 1A for discussion of these risks and uncertainties).
- Additional information about results of operations and financial condition for 2021 and 2020 can be found in "Management's Discussion and Analysis of Financial Condition and Results of Operations" sections in 3M's Current Report on Form 8-K dated April 26, 2022 (which updated 3M's 2021 Annual Report on Form 10-K).
- OVERVIEW
- 3M is a diversified global manufacturer, technology innovator and marketer of a wide variety of products and services. Effective in the first quarter of 2022, 3M made the following changes:
 - Changes in measure of segment operating performance used by 3M's chief operating decision maker—impacting 3M's disclosed measure of segment profit/loss (business segment operating income). See additional information in Note 19. 3M's disclosed disaggregated revenue was also updated as a result of the changes to segment reporting. See additional information in Note 2.
 - Changes to non-GAAP measures—certain amounts adjusted for special items. Refer to the *Certain amounts adjusted for special items - (non-GAAP measures)* section below for additional information.
- Information provided herein reflects the impact of these changes for all periods presented.
- 3M's business is segmented by product, by geographic area, and by business unit. Geographic areas include Europe, Middle East and Africa, Asia, Latin America, and the Americas. Business units include 3M's various divisions, which are defined as the change in net sales, absent the separate impacts on sales from foreign currency translation and acquisitions, of divestitures, acquisitions and divestitures sales change impacts, if any, are measured separately for the first twelve months post-transaction. 3M believes this information will be accurate and consistent with the information disclosed in its annual and quarterly reports.
- 3M is impacted by the global pandemic and related effects associated with the coronavirus (COVID-19). Risk factors with respect to COVID-19 can be found in Item 1A "Risk Factors" in this document. Given the diversity of 3M's businesses, some of the factors relative to COVID-19 increase the demand for 3M products, while others decrease demand or make it more difficult for 3M to serve customers. Certain resulting impacts are referenced in various discussions within this Item 7. Overall, the impact of the COVID-19 pandemic on 3M's consolidated results of operations was primarily driven by factors related to changes in demand for products and disruption in global supply chains. 3M is not able to predict the extent to which the COVID-19 pandemic may have a material effect on its consolidated results of operations or financial condition.
- In 2022, 3M's costs for significant litigation (see *Certain amounts adjusted for special items - (non-GAAP measures)* section below) totaled approximately \$2.3 billion pre-tax and included, among things, pre-tax charges associated with steps toward resolving Conshohocken litigation and associated with additional commitments to address PFAS-related matters at its Zwijndrecht, Belgium site (approximately \$1.7 billion and \$355 million, respectively, in 2022). These matters are further discussed in Note 14. In 2022, 3M also completed the split-off of its Food Safety Division business resulting in a pre-tax gain of \$2.7 billion and committed to a plan to exit PFAS manufacturing by the end of 2023 resulting in a 2022 pre-tax charge of \$9.8 billion related to impairment as discussed in Note 15. See *Certain amounts adjusted for special items - (non-GAAP measures)* section below for additional discussion of these and other special items.
- Table of Contents
- 3M Belgium has experienced interruptions to portions of the manufacturing at its site in Zwijndrecht, Belgium, as more fully discussed in Note 6. As discussed in Note 16, 3M Belgium received agreement with authorities in June 2022 to begin the process toward restarting operations at the Zwijndrecht facility. 3M Belgium has provided information required by the Flemish environmental authorities to receive agreement from the authorities to restart operations, and has done so for production or sampling purposes. Belgian government authorities continue to maintain oversight of these operations and compliance with applicable requirements. In December 2022, 3M Belgium received an official indicative report from the Flemish Environmental Inspectorate and continues to work with the government authorities to comply with applicable legal requirements. See further discussion in Note 16.
- 3M is also impacted by the Russia-Ukraine conflict. In light of a number of factors, 3M suspended operations of its subsidiaries in Russia in March 2022, the net sales of which were less than one percent of 3M's consolidated net sales for 2021. Further, in September 2022, management committed to a plan to exit and dispose of the related net assets through an intended sale of the subsidiaries. The associated charge in 2022 related to this action is further discussed in Note 15. 3M also has other operations that source certain raw materials from suppliers in Russia and have experienced related supply disruption due to the conflict. Further supply disruption could lead to downstream customer impacts.
- Though 3M monitors relevant factors as well as options to mitigate potential impacts, it is not able to predict the extent to which these circumstances may have a material effect on 3M's consolidated results of operations or financial condition. Relevant risk factors can be found in Item 1A "Risk Factors" in this Annual Report on Form 10-K.

Chat Interface (Right Panel):

- Search bar: can you give me 3Ms sales in millions for america?
- Response: 3M's sales in the Americas were \$15,000 million for each of the years 2022 and 2021, and \$13,900 million for 2020.
- Buttons: Searching document for, Defining Terminology, Calculating ROA.
- Ask a question...: What is the turnover ratio for the year?
- Start conversation by asking questions!
- Import Annotated Questions button.

[I clicked search button on the second card]

- The right hand panel is divided into 3 different sections:
 - The first is the chat-window which is static by virtue of the sample data, this is supposed to be added as per the response keeps updated. For the assessment purpose I've only kept one entry.
 - The second section has the loading timeline, for now it's only a place holder and is ready to be populated w.r.t the responses that I get from your model.



3] Lastly we have the text input which will query the question to the backend, the submit button for now only stores the data in the postgres db with a unique q_id, the response from the model and its context and defaults annotated to false. [PFB Screenshot]

local.drizzle.studio							
01 — Introduction React Three Fiber... Three.js — JavaScr... React Native · Lea... Discover three.js! ill-gui 0.19.2 React Three Fiber... HRA Organ Gallery Game Dev Preps OSA Homebrew Formul... aynxn/info-4005...							
ID < > Filters Columns Add record 1 row • 21ms < 50 0 > ↺ ↻							
q_id	question	model_answer	model_context	is_annotated	annotated_answer	annotated_context	
9fa7e4aa-3709-4643-87c4-b1cad30cbe95	can you give...	3M's sales in the Americas we...	{{"pageContent":"Americas in...	FALSE	EMPTY STRING	{{"pageContent":"Americas inc...	

- As mentioned in the assessment requirement we also wanted a feature for the user to annotate the response and be able to retrieve the annotated responses as well
- The response section in the chat window is editable and user can interact with it. Upon editing the answer the user can click on the button and it saves the response in the postgres DB. You can also have the context removed from the context modal before hitting save and it will retain the info.

Create Next App

Drizzle Studio

localhost:3000

01 — Introduction

React Three Fiber...

Three.js — JavaScr...

React Native · Lea...

Discover three.js!

ll-gui 0.19.2

React Three Fiber...

HRA Organ Gallery

Game Dev Preps

OSA

Homebrew Formul...

aynnn/info-4005...

Creating

125%

1

Context

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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2022

or

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____

Commission file number 3-3285

3M COMPANY

State of Incorporation: Delaware

L.R.S. Employer Identification No. 41-0417725

Principal executive offices: 3M Center, St. Paul, Minnesota 55144

Telephone number: (651) 733-1188

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, Par Value \$0.01 Per Share	MMM	New York Stock Exchange
8.000% Notes due 2023	MMMD23	Chicago Stock Exchange, Inc.
1.500% Notes due 2026	MMMD26	New York Stock Exchange
1.750% Notes due 2030	MMMD30	New York Stock Exchange
1.500% Notes due 2031	MMMD31	New York Stock Exchange

Note: The common stock of the registrant is also traded on the SIX Swiss Exchange.

Securities registered pursuant to section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (17 CFR 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☒ Accelerated filer ☐ Non-accelerated filer ☐ Smaller reporting company ☐ Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Securities Exchange Act of 1934 (17 CFR 232.404(b)) by the registered public accounting firm that prepared or issued its audit report. Yes ☐ No ☒

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are statements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to 1240.10D-1(b). ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ☐ No ☒

The aggregate market value of voting stock held by nonaffiliates of the registrant, computed by reference to the closing price and shares outstanding, was approximately \$63.3 billion as of January 31, 2023 (approximately \$73.7 billion as of June 30, 2022, the last business day of the registrant's most recently completed second quarter).

Shares of common stock outstanding as January 31, 2023: 596.5 million

DOCUMENTS INCORPORATED BY REFERENCE

Parts of the Company's definitive proxy statement (to be filed pursuant to Regulation 14A within 120 days after Registrant's fiscal year-end of December 31, 2023) for its annual meeting to be held on May 9, 2023, are incorporated by reference in this Form 10-K in response to Part III, Items 16, 11, 12, 13 and 14.

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3M COMPANY

FORM 10-K

For the Year Ended December 31, 2022

Pursuant to Part IV, Item 16, a summary of Form 10-K content follows, including hyperlinked cross-references (in the EDGAR filing). This allows users to easily locate the corresponding items in Form 10-K, where the disclosure is fully presented. The summary does not include certain Part III information that will be incorporated by reference from the proxy statement, which will be filed after this Form 10-K filing.

PART I

ITEM 1

ITEM 1A

Business

Risk Factors

Beginning Page

4

10

can you give me 3Ms sales in millions for america?

3M's sales in the Americas were \$15 Billion for each of the years 2022 and 2021, and \$13,900 million for 2020.

Edit Answer

Searching document for

Defining Terminology

Calculating ROA

item 2

item 2

item 2

Ask a question...

What is the turnover ratio for the year?

Start conversation by asking questions!

Import Annotated Questions

The screenshot shows the Drizzle Studio web application. The browser address bar displays 'local.drizzle.studio'. The application interface includes a top navigation bar with tabs for 'Create Next App' and 'Drizzle Studio'. Below this is a breadcrumb trail: '01 - Introduction' > 'React Three Fiber...' > 'Three.js - JavaScr...' > 'React Native - Lea...' > 'Discover three.js!' > 'lll-gui 0.19.2' > 'React Three Fiber...' > 'HRA Organ Gallery' > 'Game Dev Preps' > 'OSA' > 'Homebrew Formul...' > 'aynnxn/info-4005...'. The main content area features a table with columns: 'q_id', 'question', 'model_answer', 'model_contex', 'is_annotated', 'annotated_answer', 'annotated_cc', 'created_at', and 'updated_at'. A single record is displayed with the following values: '9fa7e4aa-', 'can you give...', '3M's sales in the Americas were \$15,000 million ..', '["pageCo...', 'TRUE', '3M's sales in the Americas were \$15 Billion for eac...', '["pageCo...', '2024-07-24', and '2024-07-24'. The interface also includes buttons for 'Filters', 'Columns', and 'Add record', along with pagination controls showing '1 row • 15ms' and '50' items per page.

q_id	question	model_answer	model_contex	is_annotated	annotated_answer	annotated_cc	created_at	updated_at
9fa7e4aa-	can you give...	3M's sales in the Americas were \$15,000 million ..	["pageCo...	TRUE	3M's sales in the Americas were \$15 Billion for eac...	["pageCo...	2024-07-24	2024-07-24

- Finally to import the annotated response, you can click the Import button on bottom right and it will get all the annotated response in the db. This can be later reconfigured per our requirements and we can add a modal which asks for all the dates, user and other filters.
- I've also uploaded the Excel file with the email.

Finishing Thoughts:

1. These were the threshold goals that I wanted to achieve in the 48Hr timeline that was set for completing the frontend. I hope you'll take this build into consideration. I thoroughly enjoyed building this interface.
2. I would love to hear back your views on the interface and hope to have an opportunity to continue working on this, as I believe there is definitely room for improvements.
3. That being said I genuinely believe this would meet your expectations as a preliminary V1 build of the interface.