LAB EXERCISE-1

TOPIC:ER DIAGRAM

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1-MCA-B

DOMAIN: INVESTMENT MANAGEMENT SYSTEM

ENTITIES:

1. Product
2. Investor
3. Services
4. Consultant
5. Advice
6. Person
7. Client
8. Research Department
9. Markets
10. Feedback

Attributes and Data Types:

Product:

- **Product ID**: (**Integer**) A unique identifier for each product in the system
- **Name**: (**String**) The name or title of the product
- **Description**: (**Text**) A brief description or summary of the product's purpose and features
- **Type**: (**String**) The type of financial instrument or product (e.g., mutual fund, ETF, stock, bond)
- **Price**: (**Integer**) Price of the product
- **Interest Rate**: (**Integer**) Interest generated by the product
- **Maturity Date**: (**Date**) Details of the maturity
- **Availability**: (**Boolean**)Availability of the product

Investor:

- **Investor ID: (Integer)** A unique identifier for each investor in the system.
- **Name: (String)**The full name of the investor.
- **Age: (Integer)**Age of the Investor.
- **Contact: (Integer)**Contact details such as phone number and email address.
- **Nationality: (String)** The investor's nationality or citizenship.
- **Income: (Integer)**Annual income of the investor, used for regulatory and suitability assessments.
- **Investment Preferences: (String)** Preferences for specific types of investments or asset classes (e.g., stocks, bonds, real estate).
- **Tax Information: (Text)**The investor's tax identification details.
- **Portfolio Details: (Text)**Details of the Portfolio of the investor

Services:

- **Service ID: (Integer)** A unique identifier for each service offered by the firm.
- **Service Name: (String)** The name or title of the service provided (e.g., Portfolio Management, Financial Planning, Advisory Services).
- **Service Type: (Boolean)** The type of service offered (e.g., discretionary, advisory, execution-only).

  Service Providers: (String) External entities or partners involved in delivering or supporting the service (e.g., custodians, third-party administrators).
- **Fee Structure: (Integer)** The fee schedaaule or pricing model associated with the service (e.g., flat fee, percentage of assets under management, hourly rate).
- **Target Audience: (String)** The intended clients or investor types for whom the service is designed (e.g., retail investors, high-net-worth individuals, institutional clients).
- **Availability: (Boolean)** Availability of the service

Consultant:

- **Consultant ID: (Integer)** A unique identifier for each consultant in the system.
- **Name: (String)** The full name of the consultant or consulting firm.
- **Contact Information: (Text)** Contact details such as phone number, email address, and office address.
- **Consulting Firm: (Text)** The name of the consulting firm the consultant is associated with.
- **Specialization: (Text)** Areas of expertise or specialization offered by the consultant e.g., investment advisory, financial planning, risk management.
- **Credentials: (String)** Professional certifications, licenses, or qualifications held by the consultant.
- **Experience: (Integer)** Years of experience in the financial services industry or specific areas of expertise.
- **Client Focus: (String)**Types of clients served by the consultant e.g., individual investors, institutional

Advice:

- **Advice ID**: **(Integer)** A unique identifier for each piece of advice or recommendation.
- **Date**: **(Date)**The date on which the advice was provided.
- **Client ID**: (**Integer**) Identifier for the client receiving the advice.
- **Subject**: (**String**) Brief description or summary of the advice topic e.g., portfolio allocation, retirement planning, tax strategy.
- **Detailed Advice**: (**Text**)Comprehensive details and recommendations provided to the client.
- **Investment Strategy**: (**Text**)Specific investment strategy or approach recommended e.g., asset allocation, diversification.
- **Risk Assessment**: (**Text**) Assessment of the risks associated with the recommended strategy or investment.

Person:

Person ID: (Integer) A unique identifier for each person in the system.

Name: (String) The person's name.

Age: (Integer) The person's Age.

Gender: (Gender) The person's gender.

Nationality/Citizenship: (String) The person's nationality or citizenship.

Contact Information: (Integer) Contact details such as phone number, email address, and mailing address.

Employment Information: (Text) Details of the person's employment status, including current and past positions.

Role: (Text) The role or position of the person within the organization or as a client e.g., client, consultant, advisor, employee.

Department: (Text) The department or division within the organization where the person works, if applicable.

Client:

Client ID: (Integer) A unique identifier for each client in the system.

Client Type: (string) Type of client e.g., individual, joint, trust, institutional investor.

Client Name: (String) The full name or legal name of the client.

Contact Information: (Text) Contact details such as phone number, email address

Client Representative: (String) Name and contact details of the primary contact person representing the client, if applicable.

Age: (Integer) Age of the client.

Nationality: (String) The client's nationality or citizenship, if applicable.

Investment Objectives: (Text) Client's financial goals and objectives e.g., retirement planning, wealth accumulation, income generation.

Research Department:

- **Methodology ID**: A unique identifier for each research methodology in the system.
- **Methodology Name**: The name or title of the research methodology.
- **Description**: A detailed description or summary of the methodology, including its purpose and objectives.
- **Data Collection**: Methods and sources used to collect relevant data e.g., financial statements, market data, economic indicators.
- **Quantitative Techniques**: Statistical or mathematical techniques used for data analysis e.g., regression analysis, time series analysis, Monte Carlo simulation.
- **Qualitative Techniques**: Approaches used to analyze non-numeric data e.g., interviews, case studies, content analysis.
- **Risk Assessment**: Procedures for assessing and managing risks associated with the research process e.g., data quality, model risk.
- **Validation and Verification**: Processes for validating and verifying research findings and conclusions.
- **Peer Review**: Procedures for peer review or external validation of research methodologies and results.

Markets:

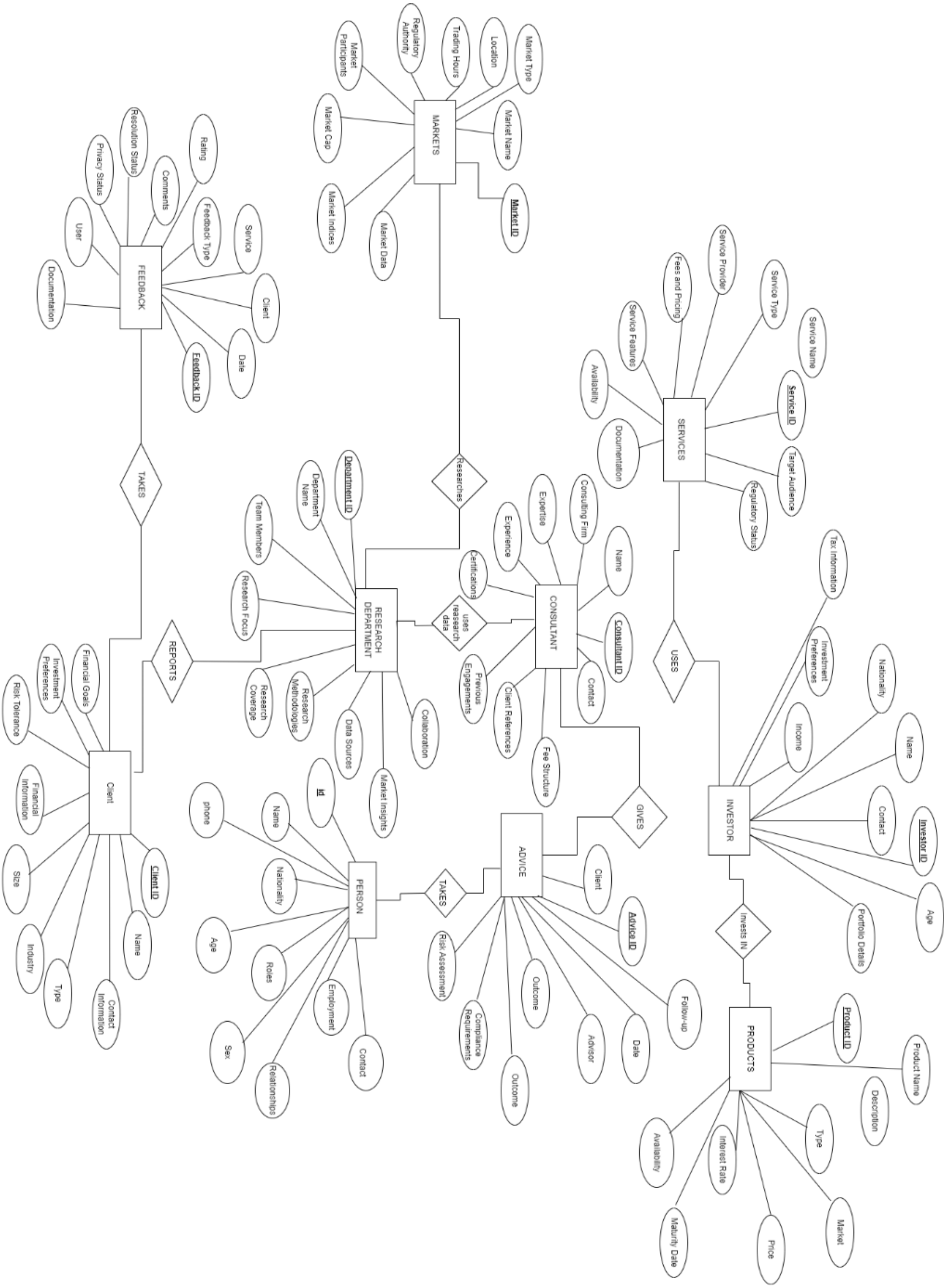
- **Market ID**: (**Integer**)A unique identifier for each market in the system.
- **Market Name**: (**String**)The name or title of the market e.g., New York Stock Exchange, NASDAQ, London Stock Exchange.
- **Market Type**: (**String**)The type of market e.g., stock market, bond market, commodity market, foreign exchange market.
- **Geographic Region**: (**Location**)The geographical region or country where the market operates e.g., US, Europe, Asia-Pacific.

- **Asset Class**: (**String**)The category of assets traded in the market e.g., equities, bonds, derivatives, commodities.
- **Trading Hours**:(**Time**) The hours during which trading activities occur in the market e.g., regular trading hours, after-hours trading.
- **Regulatory Authority**: (**String**)The regulatory authority or agencies overseeing the market's operations and participants.
- **Market Participants**: (**Text**)Types of participants active in the market e.g., individual investors, institutional investors, market makers, brokers.
- **Market Structure**: (**Text**)The organizational structure and rules governing trading and settlement in the market e.g., auction market, dealer market.
- **Market Indices**: (**String**)Major indices that track the performance of the market.

Feedback:

- **Feedback ID**: (**Integer**) A unique identifier for each feedback entry in the system.
- **Date**: (**Date**)The date when the feedback was provided.
- **Sender ID**: (**Integer**)Identifier of the person or entity providing the feedback e.g., client ID, consultant ID.
- **Recipient ID**: (**Integer**)Identifier of the person or team receiving the feedback e.g., department ID, specific employee ID.
- **Feedback Type**: (**Text**)Classification of the feedback e.g., suggestion, complaint, compliment, improvement idea.
- **Subject**: (**Text**) Brief description or summary of the feedback topic.
- **Resolution Status**: (**String**)Current status of the feedback resolution process e.g., open, in progress, resolved.
- **Action Taken**: (**Boolean**)Steps taken or actions planned in response to the feedback.

ER Diagram:


MARKETS
Market Participants
Regulatory Authority
Trading Hours
Location
Market Type
Market Cap
Market Name
Market Indices
Market Data
Market ID
FEEDBACK
Resolution Status
Rating
Privacy Status
Comments
User
Feedback Type
Service
Documentation
Client
Date
Feedback ID
TAKES
Researches
SERVICES
Service Provider
Fees and Pricing
Service Type
Service Features
Service Name
Availability
Service ID
Documentation
Target Audience
Regulatory Status
RESEARCH DEPARTMENT
Department ID
Department Name
Team Members
Research Focus
Research Coverage
Research Methodologies
Data Sources
Collaboration
Market Insights
uses reasearch data
CONSULTANT
Expertise
Consulting Firm
Experience
Certifications
Name
Consultant ID
Previous Engagements
Client References
Contact
Fee Structure
REPORTS
USES
Client
Financial Goals
Investment Preferences
Risk Tolerance
Financial Information
Size
Industry
Type
Contact Information
Name
Client ID
INVESTOR
Tax Information
Investment Preferences
Nationality
Income
Name
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Investor ID
Age
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GIVES
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Nationality
Age
Roles
Employment
Sex
Relationships
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TAKES
ADVICE
Client
Advice ID
Risk Assessment
Outcome
Compliance Requirements
Outcome
Advisor
Date
Follow-up
Invests IN
PRODUCTS
Product ID
Product Name
Description
Type
Interest Rate
Availability
Market
Price
Maturity Date