Welcome
We will start promptly at 11 AM ET

Please add your questions to the chat box, we will address them during the Q&A. If you are unable to hear speakers just let us know in the chat box.

Following the webinar, you will receive a link to the recording. You can find a copy of all our webinar recordings at

www.caia.org/caia-infoseries
www.fdpinstitute.org/webinars
FDP Candidate Orientation
Q2–2023 Exam
Test Center April 10 – 23, 2023
Remote Proctor Exam April 23 & 24, 2023

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www.FDPInstitute.org
Agenda

Part I
• FDP Charter

Part II
• LO & Practice Question Review

Part III
• Exam Structure & Format

Part IV
• Candidate Experience

Q&A
Part I

FDP Charter
FDP Charterholders:

- Will occupy a unique position in the financial industry.
- Will be sought after by various financial industry segment employers.

**Why?**

- Big Data’s Potential: Industry leaders have long recognized Big Data’s potential for increasing revenues, creating efficiencies, and managing risk.
- Big Data’s Challenge: The sheer amount of data collected by the finance industry poses a challenge – how to extract maximum value from it.

**FDP Charterholder’s role:**

- How to evaluate Big Data’s potential: Big Data and Alternative Data sets are expensive and require careful evaluation before vast resources are allocated to their acquisition. FDP Charterholders, with their domain knowledge and understanding of machine learning tools, will be in a perfect position to perform this task.
- Which problems the quant team should focus on: Not every financial problem can be solved using a combination of machine learning and Big Data. FDP Charterholders can identify areas with the highest ROI and direct corporate resources in that direction.
- How to interpret the results: Understanding the solutions generated by many machine learning algorithms requires domain knowledge and appreciation of these algorithms. FDP Charterholders can interpret the results generated by these algorithms and recognize their benefits and limitations.
- How to communicate the results: The best solutions will be worthless if the end-user does not understand them, leading to poor execution and lost opportunities. FDP Charterholders are translators who can work with advisors, portfolio managers, and clients to ensure that the results are clearly understood and implemented correctly.
“Employers increasingly seek professionals, who have the skills to apply data science tools to solve their most challenging problems.”
Part II

Learning Objectives & Practice Question Review
TOPIC 4  
Classification, Clustering, and Naïve Bayes

READING 4.2  

LEARNING OBJECTIVE 4.2.1

| Action words defined in Study Guide |

A k-means clustering has been applied to the following 7 observations. The Euclidean distances of each observation to its cluster’s center are given below. What is the inertia of Cluster A?

<table>
<thead>
<tr>
<th>Euclidean Distance from Cluster’s Center</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cluster A</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>4</td>
</tr>
</tbody>
</table>

A. 5.1  
B. 8.0  
C. 26.0  
D. 64.0

Inertia = \( \sum_{i=1}^{n} d_i^2 = 3^2 + 1^2 + 4^2 = 26 \)
Marilyn Taylor is a quantitative analyst responsible for finding new investment ideas in the equity space. In the past, she has used unsupervised learning techniques to filter firms from a larger list, and this technique seems to have worked well for her. She mainly considers firm characteristics, such as P/E ratio, P/B ratio, and size, for her analysis.

Recently, she has come across Volta Electric Company, which looks interesting to her. Currently, it has a P/E ratio of 16.5, a P/B ratio of 2.3, and a size value of 4.6 billion. To compare Volta with some other companies, she pulled out information on 3 companies that she had analyzed in the past. Out of the 3 companies, 2 were recommended for investment and 1 was not recommended. Following table provides information on the three companies.

<table>
<thead>
<tr>
<th>Name</th>
<th>P/E Ratio</th>
<th>P/B Ratio</th>
<th>Size ($ billions)</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Healthcare</td>
<td>14</td>
<td>2.1</td>
<td>5.9</td>
<td>Invest</td>
</tr>
<tr>
<td>Wholesome Foods</td>
<td>17</td>
<td>1.5</td>
<td>6.7</td>
<td>Invest</td>
</tr>
<tr>
<td>Real Tech</td>
<td>21</td>
<td>1.8</td>
<td>7.8</td>
<td>Do not invest</td>
</tr>
</tbody>
</table>

A. Marilyn uses Euclidean distance to measure the difference between a new company and the companies she has analyzed in the past. What are the Euclidean distances between Volta and the 3 companies listed in the table above?

If we take a majority vote of the distances, what would be the recommendation by Marilyn for Volta? Explain how you decided on this.

(5 points)
A. Marilyn uses Euclidean distance to measure the difference between a new company and the companies she has analyzed in the past. What are the Euclidean distances between Volta and the 3 companies listed in the table above?

If we take a majority vote of the distances, what would be the recommendation by Marilyn for Volta? Explain how you decided on this.

(5 points)

**SAMPLE QUESTION (repeated for reference)**

**SAMPLE ANSWER**

<table>
<thead>
<tr>
<th>Euclidean distance between Volta and:</th>
<th>Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northern Healthcare</td>
<td>$\sqrt{(16.5 - 14)^2 + (2.3 - 2.1)^2 + (4.6 - 5.9)^2} = 2.82$</td>
</tr>
<tr>
<td>Wholesome Foods</td>
<td>$\sqrt{(16.5 - 17)^2 + (2.3 - 1.5)^2 + (4.6 - 6.7)^2} = 2.30$</td>
</tr>
<tr>
<td>Real Tech</td>
<td>$\sqrt{(16.5 - 21)^2 + (2.3 - 1.8)^2 + (4.6 - 7.8)^2} = 5.54$</td>
</tr>
</tbody>
</table>

The recommendation would be to invest in Volta. If we consider the distances between Volta and the three companies analyzed earlier, we see that two of the companies are quite close in terms of the Euclidean distance and the recommendations for both of these companies is to invest in them. Majority voting requires us to look at all the points that are close to point we are trying to classify and assigns the majority class from the closest points to the new point.
Examination Structure

- 80 multiple choice questions (75%)
- 3-4 multi-part constructed responses (25%)

<table>
<thead>
<tr>
<th>Topics</th>
<th>Approximate Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Introduction to Data Science</td>
<td>5-12</td>
</tr>
<tr>
<td>2. Linear and Logistic Regression, Support Vector Machines, Regularization, and Time Series</td>
<td>10-15</td>
</tr>
<tr>
<td>3. Decision Trees, Supervised Segmentation, and Ensemble Methods</td>
<td>10-15</td>
</tr>
<tr>
<td>4. Classification, Clustering, and Naïve Bayes</td>
<td>5-12</td>
</tr>
<tr>
<td>5. Neural Networks and Reinforcement Learning</td>
<td>5-12</td>
</tr>
<tr>
<td>6. Performance Evaluation, Back-testing, and False Discoveries</td>
<td>5-12</td>
</tr>
<tr>
<td>7. Text Mining</td>
<td>5-12</td>
</tr>
<tr>
<td>8. Ethical and Privacy Issues</td>
<td>5-12</td>
</tr>
<tr>
<td>9. Fintech Applications</td>
<td>25-40</td>
</tr>
</tbody>
</table>
Examination Format
(both exam types)

Session 1: 80 multiple choice questions
135 minutes

Optional break

Session 2: 3-4 multi-part constructed responses
65 minutes

Non-disclosure agreement (must be completed within 5 minutes) 5 minutes
Exam instructions 10 minutes
80 Multiple Choice (MC) Questions 135 minutes
Break (optional) 20 minutes
3-4 Constructed Response Questions 65 minutes
Comment Period (optional) 2 minutes

Total Exam Session Time 4 hours

RPT candidates: reminder that your security login process is part of your optional break time
Study & Preparation

• **Study Curriculum Materials** – approx. 200+ hours to prepare
• **Practice Questions** – familiarize yourself with types of questions
• **Sample Exam** – replicates structure of the actual exam
• **Demo Exam** – replicates login procedures and test environment
• **Calculator Tutorial** – understanding how to use the online calculator
• Lessons learned & **FAQ**
Post Exam: Candidate Performance Report

• The FDP Candidate Performance Report is intended to aid in self-assessment by indicating your areas of relative strength and weakness among the topics in the exam, compared to a reference group.

• The reference group is comprised of all candidates whose total test scores were within the bottom quartile of those who passed the exam during the testing window in which you sat for the exam.

<table>
<thead>
<tr>
<th>FDP Examination Topics</th>
<th>Relative Performance Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction to Data Science</td>
<td>Above</td>
</tr>
<tr>
<td>Linear &amp; Logistic Regression, Support Vector Machines, Regularization, and Time Series</td>
<td>Above</td>
</tr>
<tr>
<td>Decision Trees, Supervised Segmentation, and Ensemble Methods</td>
<td>Above</td>
</tr>
<tr>
<td>Classification, Clustering, and Naïve Bayes</td>
<td>Below</td>
</tr>
<tr>
<td>Neural Networks and Reinforcement Learning</td>
<td>Equal</td>
</tr>
<tr>
<td>Performance Evaluation, Back-Testing, and False Discoveries</td>
<td>Above</td>
</tr>
<tr>
<td>Text Mining</td>
<td>Equal</td>
</tr>
<tr>
<td>Ethical &amp; Privacy Issues</td>
<td>Above</td>
</tr>
<tr>
<td>Fintech Applications</td>
<td>Equal</td>
</tr>
</tbody>
</table>
Part IV

Candidate Experience
Candidate Checklist

- Register for the FDP Exam
- Obtain the Curriculum
- Reserve Exam Seat
  - Option 1 - Test Center
  - Option 2 - Online Proctoring
- Sit for the Exam
- Complete Online Course Requirements
- Sign Code of Ethics
- Provide Two References
Reserve Your Exam Seat!

Option 1
At a Prometric Test Site
April 10–23

• Exam window: April 10 – 23, 2023*
• Candidates can not bring their personal calculator.
  • A scientific calculator is provided in the software.
• Seats have to be reserved by March 22, 2023

Option 2
Remote Proctored Testing
April 23 & 24

• RPT Days: April 23 – 24, 2023*
• Candidates can not bring their personal calculator.
  • A scientific calculator is provided in the software.
• Applications for RPT have to be received by March 17, 2023
• Seats have to be reserved by March 22, 2023
• *Once you have selected a remote proctored exam, you may not re-schedule an appointment at a later date at any physical site.

All FDP Candidates, registered for the Q2–2023 FDP exam are eligible to test the Prometric exam software. Learn if your hardware, your exam environment, or your webcam meet the requirements.
Unlimited access to the Prometric Scientific calculator

Familiarize yourself with the Prometric platform
Exam Day Prep

ID Policy

• Two valid (not expired) forms of ID
  • ☞ Make sure your name in your FDP profile MATCHES that on your ID
• Both must have a signature
• One must have a photo
• Passport preferred
• The name on your IDs must exactly match the name with which you schedule your exam.

Check the Prometric website for COVID related protocols
Exam Day Items Permitted

**Test Center**
- Identification
- Test center locker key
- Approved face mask

**Remote Testing**
- Identification
- A clear glass with water
- Four clean sheets of paper
- One pencil
- Two Tissues

Refer to the Candidate Handbook for items not permitted in the testing environment.
Q2–2023 Shortcuts
(click on the item you would like to learn more about)

Reserve Your Exam Seat by March 22
Tutorial link
practice your calculator questions
DEMO RPT exam
Test your system, experience the log-in procedures
Webinars
www.fdpinstitute.org/webinars

Q2–2023 Exam Participants

Candidate Handbook
Candidate Study Guide
Practice Questions (exam reg required)
Sample Exam (exam reg required)

Kaplan Prep Course
Q4–2023 Exam

Interested in the Q4–2023 Exam? Curriculum readings and Learning Objectives will be updated.

Create Your FDP Profile

Exam Dates: October 9–22, 2023
RPT Days on October 22 & 23

Early Registration Opens June 1, 2023

Q4–2023 FDP Charter Information Session
June 6, 2023
Upcoming Webinars:

Developing an Improved Investment Style Analysis Algorithm and His Journey to the FDP Designation

Register Here: https://bit.ly/3XnrwIn

How Should Long-Term Investors Form Portfolios?

Register Here: https://bit.ly/3RS2ccp
Thank You

Contact Us:

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- @FDPIInstitute
- Linkedin.com/company/FDP Institute