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# Initial Evaluation

initial evaluation

This short initial evaluation is designed to assess your knowledge of analytics before beginning this course. It will give us important insight into what you and your fellow students know before beginning the course, and will help us improve the course in the future. Please answer the questions as honestly as possible.

You will get credit for completing this evaluation, but there are **no right or wrong answers (every answer will be marked as correct)**. Completing the evaluation is **worth 1% of your final grade** in this course.

## Question 1.1 - Software

1 point possible (graded)
Do you have any experience using a programming language? Examples are R, python, C, C++, Java, php, and SQL.

- ○ Yes, I am comfortable using a programming language.
- ◉ Yes, but I am not very comfortable using it.
- ○ Yes, but very minimally.
- ○ No, I have never used a programming language.

Submit You have used 0 of 1 attempt

## Question 1.2 - Software

1 point possible (graded)
Have you ever used any analytics software? Some examples are R, SAS, Stata, pandas, and Microsoft Excel Statistical Add-ins, like XLMiner and the Analysis ToolPak.

- Yes, I'm very comfortable using analytics software.
- Yes, but I'm not very comfortable using the software.
- Yes, but very minimally.
- No, I have never used analytics software.

Submit You have used 0 of 1 attempt

## Question 2.1 - Linear Regression

1 point possible (graded)
Have you ever learned about the method of linear regression?

- Yes, I've learned about linear regression before.
- No, I've never learned about linear regression.
- I'm not sure.

Submit You have used 0 of 1 attempt

## Question 2.2 - Linear Regression

1 point possible (graded)

Which of the following situations is a linear regression model designed to handle? If you don't know the answer, just select "I don't know".

- Situation 1: A factory wants to decide how many machines of different types to purchase so that they can increase their production next month. They want to maximize total revenue, while not spending more than $100,000 on new machines.
- Situation 2: A clothing store wants to predict their total revenue next month using the total sales this month, the types of styles that will be released next month, and seasonality.
- Situation 3: A medical researcher wants to predict whether or not a patient will be re-admitted to the hospital, using information from the patient's medical record (e.g. demographic information, medical history, doctor's free-text notes).
- Situation 4: An airline wants to use historical data to segment their customers into different categories to better understand the different types of customers they have and to target them with advertisements.
- Situation 5: A chicken feed company wants to decide what percentage of four different grains to use to create a new product. They want to minimize the total cost of the product, while making sure that it meet all of the nutritional requirements for chicken feed.
- Situations 2 and 3.
- Situations 1 and 5.
- Situations 1, 2, 3, 4, and 5.
- None of the above situations.
- I don't know.

Submit

You have used 0 of 1 attempt

## Question 2.3 - Linear Regression

1 point possible (graded)
Have you ever created a linear regression model using any software package?

- ○ Yes, within the past year.
- ○ Yes, but not within the past year.
- ○ No.
- ○ I'm not sure.

Submit You have used 0 of 1 attempt

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## Question 3.1 - Logistic Regression

1 point possible (graded)
Have you ever learned about the method of logistic regression?

- ○ Yes, I've learned about logistic regression before.
- ○ No, I've never learned about logistic regression.
- ○ I'm not sure.

Submit You have used 0 of 1 attempt

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## Question 3.2 - Logistic Regression

1 point possible (graded)
Which of the following situations is a logistic regression model designed to handle? If you don't know the answer, just select "I don't know".

- Situation 1: A factory wants to decide how many machines of different types to purchase so that they can increase their production next month. They want to maximize total revenue, while not spending more than $100,000 on new machines.
- Situation 2: A clothing store wants to predict their total revenue next month using the total sales this month, the types of styles that will be released next month, and seasonality.
- Situation 3: A medical researcher wants to predict whether or not a patient will be re-admitted to the hospital, using information from the patient's medical record (e.g. demographic information, medical history, doctor's free-text notes).
- Situation 4: An airline wants to use historical data to segment their customers into different categories to better understand the different types of customers they have and to target them with advertisements.
- Situation 5: A chicken feed company wants to decide what percentage of four different grains to use to create a new product. They want to minimize the total cost of the product, while making sure that it meet all of the nutritional requirements for chicken feed.
- Situations 2 and 3.
- Situations 1 and 5.
- Situations 1, 2, 3, 4, and 5.
- None of the above situations.
- I don't know.

Submit

You have used 0 of 1 attempt

## Question 3.3 - Logistic Regression

1 point possible (graded)
Have you ever created a logistic regression model using any software package?

- Yes, within the past year.
- Yes, but not within the past year.
- No.
- I'm not sure.

Submit You have used 0 of 1 attempt

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## Question 4.1 - CART and Random Forests

1 point possible (graded)
Have you ever learned about the methods of CART and Random Forests?

- Yes, I've learned about both of them.
- I've learned about one of these methods.
- No, I've never learned about either of them.
- I'm not sure.

Submit You have used 0 of 1 attempt

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## Question 4.2 - CART and Random Forests

1 point possible (graded)

Which of the following situations is a CART or Random Forest model designed to handle? If you don't know the answer, just select "I don't know".

- Situation 1: A factory wants to decide how many machines of different types to purchase so that they can increase their production next month. They want to maximize total revenue, while not spending more than $100,000 on new machines.
- Situation 2: A clothing store wants to predict their total revenue next month using the total sales this month, the types of styles that will be released next month, and seasonality.
- Situation 3: A medical researcher wants to predict whether or not a patient will be re-admitted to the hospital, using information from the patient's medical record (e.g. demographic information, medical history, doctor's free-text notes).
- Situation 4: An airline wants to use historical data to segment their customers into different categories to better understand the different types of customers they have and to target them with advertisements.
- Situation 5: A chicken feed company wants to decide what percentage of four different grains to use to create a new product. They want to minimize the total cost of the product, while making sure that it meet all of the nutritional requirements for chicken feed.
- Situations 2 and 3.
- Situations 1 and 5.
- Situations 1, 2, 3, 4, and 5.
- None of the above situations.
- I don't know.

Submit You have used 0 of 1 attempt

## Question 4.3 - CART and Random Forests

1 point possible (graded)
Have you ever created a CART or Random Forest model using any software package?

- Yes, I've created at least one of these models within the past year.
- Yes, I've created at least one of these models, but not within the past year.
- No, I've never created either of these models.
- I'm not sure.

Submit You have used 0 of 1 attempt

## Question 5.1 - Bag of Words

1 point possible (graded)
Have you ever learned about the text analytics method called "bag of words"?

- Yes, I've learned about the bag of words method.
- No, I've never learned about the bag of words method.
- I'm not sure.

Submit You have used 0 of 1 attempt

## Question 5.2 - Bag of Words

1 point possible (graded)

Which of the following situations is the bag of words approach designed to handle? If you don't know the answer, just select "I don't know".

- Situation 1: A factory wants to decide how many machines of different types to purchase so that they can increase their production next month. They want to maximize total revenue, while not spending more than $100,000 on new machines.
- Situation 2: A clothing store wants to predict their total revenue next month using the total sales this month, the types of styles that will be released next month, and seasonality.
- Situation 3: A medical researcher wants to predict whether or not a patient will be re-admitted to the hospital, using information from the patient's medical record (e.g. demographic information, medical history, doctor's free-text notes).
- Situation 4: An airline wants to use historical data to segment their customers into different categories to better understand the different types of customers they have and to target them with advertisements.
- Situation 5: A chicken feed company wants to decide what percentage of four different grains to use to create a new product. They want to minimize the total cost of the product, while making sure that it meet all of the nutritional requirements for chicken feed.
- Situations 2 and 3.
- Situations 1 and 5.
- Situations 1, 2, 3, 4, and 5.
- None of the above situations.
- I don't know.

Submit You have used 0 of 1 attempt

## Question 5.3 - Bag of Words

1 point possible (graded)
Have you ever created a bag of words model using any software package?

- Yes, within the past year.
- Yes, but not within the past year.
- No.
- I'm not sure.

Submit You have used 0 of 1 attempt

## Question 6.1 - Clustering

1 point possible (graded)
Have you ever learned about Hierarchical Clustering or K-Means Clustering?

- Yes, I've learned about both of them.
- I've learned about one of these methods.
- No, I've never learned about either of them.
- I'm not sure.

Submit You have used 0 of 1 attempt

## Question 6.2 - Clustering

1 point possible (graded)

Which of the following situations is a clustering model designed to handle? If you don't know the answer, just select "I don't know".

- Situation 1: A factory wants to decide how many machines of different types to purchase so that they can increase their production next month. They want to maximize total revenue, while not spending more than $100,000 on new machines.
- Situation 2: A clothing store wants to predict their total revenue next month using the total sales this month, the types of styles that will be released next month, and seasonality.
- Situation 3: A medical researcher wants to predict whether or not a patient will be re-admitted to the hospital, using information from the patient's medical record (e.g. demographic information, medical history, doctor's free-text notes).
- Situation 4: An airline wants to use historical data to segment their customers into different categories to better understand the different types of customers they have and to target them with advertisements.
- Situation 5: A chicken feed company wants to decide what percentage of four different grains to use to create a new product. They want to minimize the total cost of the product, while making sure that it meet all of the nutritional requirements for chicken feed.
- Situations 2 and 3.
- Situations 1 and 5.
- Situations 1, 2, 3, 4, and 5.
- None of the above situations.
- I don't know.

Submit

You have used 0 of 1 attempt

## Question 6.3 - Clustering

1 point possible (graded)

Have you ever created a Hierarchical Clustering or K-means Clustering model using any software package?

- ○ Yes, I've created at least one of these models within the past year.
- ○ Yes, I've created at least one of these models, but not within the past year.
- ○ No, I've never created either of these models.
- ○ I'm not sure.

Submit

You have used 0 of 1 attempt

## Question 7.1 - Visualization

1 point possible (graded)
Have you ever learned about data visualization (e.g. scatterplots, line plots, heat maps, geographical maps)?

- ○ Yes, I've learned about data visualization, including scatterplots, line plots, heat maps, and geographical maps.
- ○ I've learned about some data visualization, but not all of the types listed above.
- ○ No, I've never learned about data visualization.
- ○ I'm not sure.

Submit You have used 0 of 1 attempt

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## Question 7.2 - Visualization

1 point possible (graded)
Which of the following situations is data visualization designed to handle? If you don't know the answer, just select "I don't know".

- Situation 1: A factory wants to decide how many machines of different types to purchase so that they can increase their production next month. They want to maximize total revenue, while not spending more than $100,000 on new machines.
- Situation 2: A clothing store wants to predict their total revenue next month using the total sales this month, the types of styles that will be released next month, and seasonality.
- Situation 3: A medical researcher wants to predict whether or not a patient will be re-admitted to the hospital, using information from the patient's medical record (e.g. demographic information, medical history, doctor's free-text notes).
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- Situation 5: A chicken feed company wants to decide what percentage of four different grains to use to create a new product. They want to minimize the total cost of the product, while making sure that it meet all of the nutritional requirements for chicken feed.
- Situations 2 and 3.
- Situations 1 and 5.
- Situations 1, 2, 3, 4, and 5.
- None of the above situations.
- I don't know.

Submit

You have used 0 of 1 attempt

## Question 7.3 - Visualization

1 point possible (graded)
Have you ever created a data visualization (e.g. scatterplot, line plot, heat map, geographical map) using any software package?

- ○ Yes, within the past year.
- ○ Yes, but not within the past year.
- ○ No.
- ○ I'm not sure.

Submit You have used 0 of 1 attempt

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## Question 8.1 - Linear Optimization

1 point possible (graded)
Have you ever learned about linear optimization (also called linear programming)?

- ○ Yes, I've learned about linear optimization.
- ○ No, I've never learned about linear optimization.
- ○ I'm not sure.

Submit You have used 0 of 1 attempt

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## Question 8.2 - Linear Optimization

1 point possible (graded)

Which of the following situations is a linear optimization model designed to handle? If you don't know the answer, just select "I don't know".

- Situation 1: A factory wants to decide how many machines of different types to purchase so that they can increase their production next month. They want to maximize total revenue, while not spending more than $100,000 on new machines.
- Situation 2: A clothing store wants to predict their total revenue next month using the total sales this month, the types of styles that will be released next month, and seasonality.
- Situation 3: A medical researcher wants to predict whether or not a patient will be re-admitted to the hospital, using information from the patient's medical record (e.g. demographic information, medical history, doctor's free-text notes).
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- Situation 5: A chicken feed company wants to decide what percentage of four different grains to use to create a new product. They want to minimize the total cost of the product, while making sure that it meet all of the nutritional requirements for chicken feed.
- Situations 2 and 3.
- Situations 1 and 5.
- Situations 1, 2, 3, 4, and 5.
- None of the above situations.
- I don't know.

Submit You have used 0 of 1 attempt

## Question 8.3 - Linear Optimization

1 point possible (graded)
Have you ever created a linear optimization model using any software package?

- Yes, within the past year.
- Yes, but not within the past year.
- No.
- I'm not sure.

Submit You have used 0 of 1 attempt

## Question 9.1 - Integer Optimization

1 point possible (graded)
Have you ever learned about integer optimization (also called integer programming)?

- Yes, I've learned about integer optimization.
- No, I've never learned about integer optimization.
- I'm not sure.

Submit You have used 0 of 1 attempt

## Question 9.2 - Integer Optimization

1 point possible (graded)

Which of the following situations is an integer optimization model designed to handle? If you don't know the answer, just select "I don't know".

- Situation 1: A factory wants to decide how many machines of different types to purchase so that they can increase their production next month. They want to maximize total revenue, while not spending more than $100,000 on new machines.
- Situation 2: A clothing store wants to predict their total revenue next month using the total sales this month, the types of styles that will be released next month, and seasonality.
- Situation 3: A medical researcher wants to predict whether or not a patient will be re-admitted to the hospital, using information from the patient's medical record (e.g. demographic information, medical history, doctor's free-text notes).
- Situation 4: An airline wants to use historical data to segment their customers into different categories to better understand the different types of customers they have and to target them with advertisements.
- Situation 5: A chicken feed company wants to decide what percentage of four different grains to use to create a new product. They want to minimize the total cost of the product, while making sure that it meet all of the nutritional requirements for chicken feed.
- Situations 2 and 3.
- Situations 1 and 5.
- Situations 1, 2, 3, 4, and 5.
- None of the above situations.
- I don't know.

Submit You have used 0 of 1 attempt

## Question 9.3 - Integer Optimization

1 point possible (graded)

Have you ever created an integer optimization model using any software package?

- Yes, within the past year.
- Yes, but not within the past year.
- No.
- I'm not sure.

Submit You have used 0 of 1 attempt

Great job! You can now proceed to the first lecture of this unit.

If you are curious about the different analytics methods mentioned in this evaluation, stay tuned - you will be learning about all of the methods mentioned throughout this course.