

# MUDAC 2020 Challenge Questions

## Understanding Case Loads in U.S. District Courts

U.S. District courts resolve disputes by determining the facts and applying legal principles to decide who is right. There are a total of 94 district courts organized into 12 regional circuits with multiple offices within each district. Information from a subset of these 94 district courts will be used for MUDAC 2020.

The following statements should be considered when investigating the case loads in U.S. District Courts.

- [Level: Beginner] Identify districts that have a high (or low) filing rate
- [Level: Beginner/Intermediate] Identify demographic features of a district that could be used to distinguish districts with a high filing rate from districts with a low filing rate?

Notes: 1) The number of people that live in a district directly impacts the number of filings; thus, a rate (e.g. filings per 100,000 people) should be used in your investigation. 2) FIPS codes have been provided for counties within each district and these codes can be used to obtain various demographic features from the US Census Bureau. 3) Information within the brackets at the beginning of each statement indicates the anticipated level of knowledge required to provide the desired outcome.

## Trial Motions Under Consideration

A motion in a court trial is a procedural mechanism that allows the plaintiff or the defendant to bring contested issues before the court. MUDAC 2020 will focus on the following types of motions.

TERMINATING MOTIONS: Motions to terminate/close a case

- Motion to Dismiss: The court is requested to dismiss the case for some reason
- Motion of Summary Judgement: The court is requested to issue a judgement without a full trial

The **primary outcomes** under investigation for MUDAC 2020 are:

1. Whether or not the case was closed via a motion to dismiss
2. Whether or not the case was closed via a motion for summary judgement
3. Whether or not the case was settled before going to trial

NON-TERMINATING MOTIONS: Motions related to the discovery of evidence for the case

- The primary focus should be on the following non-terminating motions: 1) Motion to Limine (motion to exclude testimony), 2) Motion to Compel Discovery (motion to order a party to produce information), and 3) Motion for Discovery Sanctions (motion regarding the failure of a non-complying party to produce information)
- Decisions regarding non-terminating motions
  - Granted: Motion is approved by the court
  - Granted in Part: Only part of the motion is approved
  - Denied: Motion is not approved by the court
  - Denied as Moot: Motion is not approved by the court because the issue raised by the motion no longer exists

Note: Motions in a court trial take place at specific times and in a particular order; however, for purposes of anonymity all date information was removed from this data. Therefore, the time series nature of this data should be ignored for MUDAC 2020.

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## Investigating Disparities in Outcomes across Venues

A court venue is the physical location where a case is filed. A court venue is uniquely identified in this data by its district/office combination. Only cases from regional circuits 6, 7, and 8 are under consideration for MUDAC 2020.

The following questions should be considered when investigating the disparities in outcomes across court venues.

- [Level: Beginner/Intermediate] Which court venues are more (or less) sympathetic to a filer's motion to dismiss?
- [Level: Beginner/Intermediate] Which court venues are more (or less) sympathetic to a filer's motion for summary judgement?
- [Level: Beginner/Intermediate] Do certain court venues tend to favor the plaintiffs/defendants?

## What Influences the Outcomes of a Case

The MUDAC 2020 challenge is centered around the desire to better understand what influences the final outcome of a case. Recall, the primary outcomes of this investigation are 1) whether or not the case was terminated via a motion to dismiss, 2) whether or not the case was terminated via a motion for summary judgement, and 3) whether or not the case was settled before going to trial

The following statements should be considered when investigating a case's outcome.

- [Level: Beginner/Intermediate] Identify characteristics of a case that appear to be indicative of a case's outcome
- [Level: Intermediate] Identify any relevant demographic features of a district/court venue that may influence the outcome of a case
- [Level: Intermediate] Investigate any relationships that may exist between the outcome of a case and the various terminating motions that are made
- [Level: Intermediate] Investigate any relationships that may exist between the outcome of a case and the various non-terminating motions that are made
- [Level: Intermediate] Identify any relationships that may exist between the outcome of a case and whether or not a non-terminating motion is granted/denied

## Predicting the Outcome of a Case (Kaggle)

[Level: Advanced] The MUDAC 2020 challenge includes a prediction component. This part of the competition will take place in Kaggle (additional information regarding Kaggle will be provided separately). MUDAC 2020 requires teams to build a predictive model that provides a probability that a case will be closed by a summary judgement and a second predictive model that provides a probability that a case will be closed by a settlement.

- Model #1: Obtain a predicted probability that a case will be closed by a summary judgment
- Model #2: Obtain a predicted probability that a case will be closed by a settlement

Teams are encouraged to discuss their model building strategies in your presentation.

Notes: 1) The average precision metric will be used in Kaggle to evaluate the overall quality of your predictions. 2) A single file containing the predicted probabilities from each model should be submitted in Kaggle (see additional information regarding submitting predictions to Kaggle).