Automated Model Building:

The Competition

### Overview

For this competition, you are tasked with using the Darwin automated model building platform to solve a data science problem. You will have the freedom to select the data science problem of your choosing, given that you can present well-reasoned results that are both innovative and impactful. Your goal is to find a relevant problem, acquire the necessary data, and perform a series of experiments on this data. These experiments will be conducted to validate a hypothesis or to provide insightful information about the chosen problem.

### The Winners

The winning groups of this competition will receive a prize money award of up to $10,000, so give it your best shot! The breakdown of winner compensation will be as follows:

* First Place - $10,000
* Second Place - $3,000
* Third Place - $2,000

### Judging

You will be graded based upon your ability to detail the problem, methodology, results, and analysis of results in a written submission of 2-3 pages. A template for this written submission will be provided as a guideline.

Out of these submissions, 10 to 15 finalists will be chosen dependent upon presentation quality. These finalists will be asked to create a 2-3 minute video describing their submission, and will also be responsible for presenting a private,15-minute presentation to the judges. The judges will be grading participating teams based on the rubric below.

### Data Restrictions

Participants in this competition have the ability to select and use any data sets of their liking except for datasets located within the following repositories:

* UCI
* Kaggle

### Judging Rubric

|  |  |
| --- | --- |
| 15 points | **Problem Selection:** How was Darwin used? Was the problem selected meaningful, appropriate for the tools used and scope of the project, and quantifiable? Was appropriate data used? Was the data set up appropriately to achieve meaningful results? |
| 22.5 points | **Outcome:** Was the research complete? How well were the results analyzed to solve the problem? |
| 25 points | **Innovation:** What innovation did the team bring to the table? (Examples: novel approaches to feature engineering, incorporating insights from a paper, integrating multiple data sets, or setting up a problem uniquely.) |
| 17.5 points | **Impact:** What are the implications of this research, and how impactful could it be in a given field? |
| 20 points | **Presentation:** How well did the team present the project and results? Were both the technical and business perspectives of the problem and solution explained? |

Good luck, and happy model building!

-The SparkCognition Team

### Grading

In addition to your project being entered in the competition judged by SparkCognition, your project will also make up 15% of your final grade in this course. For grading, you will submit both your paper and your code (in the form of a Jupyter Notebook).

### Grading Rubric

|  |  |
| --- | --- |
| 10 points | **Data Prep:** Was appropriate data obtained for the problem? Was data cleaning performed correctly? Was data sufficiently explored? Were features engineered appropriately? |
| 25 points | **Data Analysis:** Were correct data analysis and machine learning techniques used? What is the quality of the code? Is the notebook well narrated? Were appropriate visualizations or other outputs used to communicate the process and results? |
| 15 points | **Outcome:** Was the research complete? How well were the results analyzed to solve the problem? |
| 30 points | **Presentation:** How well did the team present the project and results? Were both the technical and business perspectives of the problem and solution explained? Is the paper well written? |
| 10 points | **Innovation & Impact:** What innovation did the team bring to the table? What are the implications of this research, and how impactful could it be in a given field? |
| 10 points | **Peer Evaluation:** Each team member will assess the contribution of the other members of their team. Peer assessments of your contributions will be included as a part of your grade. |