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| Internship Project Title | Classification Model - Build a Model that Classifies the Side Effects of a Drug |
| Name of the Company | TCS iON |
| Name of the Industry Mentor | Debashis Roy |
| Name of the Institute | Tatyasaheb Kore Institute of Engineering and Technology  (TKIET), Warananagar |

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| Start Date | End Date | | Total Effort (hrs.) | | Project Environment | Tools used |
| 20-01-2025 | 24-01-2025 | | 23.5 hours | | VS Code, Chrome, Windows 10, GitHub | Python, Colab, libraries |
| Milestone # | 1 | Milestone: | | Create, clean and sanitize a dataset and carry out the preprocessing of data. | | |

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**Acknowledgements**

I thank TCS iON and the industry mentor for their guidance and support as well as for providing necessary information regarding the project.

**Objective**

The objective of this project is to develop a classification model that classifies the side effects of a particular drug by age, gender and race.

**Introduction / Description of Internship**

Classification model is used to classify and categorize data into different categories using machine learning algorithms. Here we intend to use these tools to create a model that can categorize different side effects that can occur due to age, gender and race.

The goal here is to develop a classification model that classifies the side effects of a particular drug by age, gender and race.

**Internship Activities**

Some of the activities to be done during the internship include Pre-project test, activity report, interim project reports, final project report, project test.

**Approach / Methodology**

1. Create a dataset. Here we use the WebMD dataset.
2. Clean the dataset and sanitize the data. Datasets usually contain raw and disoriented data and we need to clean it and make it proper for better performance with our classification model.
3. We pre-process the data according to our needs and utilize
4. We carry out exploratory data analysis.
5. Make a classification model that works/trains on our dataset and can make proper inferences from it too.
6. We use different algorithms to build our model so that we can gauge which one of the listed methods is best for creating our desired classification model.
7. We finally create our model and test it on other datasets for its functionality.

**Challenges and Opportunities**

It is a big challenge to learn the basics of exploratory data analysis since the field is so wide and needs to be understood thoroughly to have favorable outcomes, it is also an opportunity to learn more and expand my capabilities through this learning experience.

**Reflections on the Internship**

I am hoping that working as an intern with TCS ion will allow me to gain greater knowledge of classification models and data analytics.

**Enhancement Scope**

There is a lot that can be added to this classification model. We can add more parameters to this model to gauge in other external factors into consideration that we have not till now. We can also focus on adding an interface/GUI for normal users who do not possess the knowledge about data science, so that they can make use of our model with relative ease.