**SYSTEM ANALYSIS**

**EXISTING SYSTEM:**

In the existing studies have reported that the prevalence of ROP was higher in Small for gestational age (SGA) infants compared with appropriate for Gestational Age (GA) preterm, while SGA was not found to be a risk factor for ROP in other reports. Factors that are considered an increased risk for severe ROP in SGA babies include chronic uterine hypoxia, abnormal growth factor levels, nutrient restriction and antioxidant deficiency. However, in this study, SGA was surprisingly associated with a decreased incidence of severe ROP in very low birth weight VLBW infants. There was a relationship between poor postnatal weight gain and an increased risk for ROP. Poor postnatal weight gain was also found as an independent risk factor for severe ROP in infants with low weight in existing study

**DISADVANTAGES OF EXISTING SYSTEM:**

* The strength of the TR-ROP(Turkey) study was that it was a large multicentre cohort study that allowed us to prospectively obtain data via a special network.
* Accuracy analysis of these predictions is not available for the TR-ROP model.
* TR-RoP study as it was not focusing for an ML audience.

**Algorithm**: TR-RoP study.

**PROPOSED SYSTEM:**

The material of our study starts with retinopathy of premature (RoP) data collected from clinical data centers or maternity homes. Among some newborns with birthweights below 2000g, few cases diagnosed with severe RoP were investigated. However, it must be noted that the important task is to predict those who might develop severe ROP from among those who have already been diagnosed with any type of RoP. Thus, our sample size was reduced to n numbers count. Out of total patients diagnosed with any type of RoP, we tried to build a model that would predict the patients diagnosed with severe RoP.

**ADVANTAGES OF PROPOSED SYSTEM:**

* We run univariate and multivariate logistic regression machine learning algorithms, starting with generalized additive model (GAM) to predict severe RoP based on the same risk factors as in TR-ROP study.
* We include accuracy analysis of these predictions, which was missing in the TR-RoP study.
* We only focused on the multivariate logistic regression analysis Ability to identify outliers or anomalies. It is easy to understand

**Algorithm**: Logistic Regression (LR)