Batch No:7

SHRI VISHNU ENGINEERING COLLEGE FOR WOMEN:: BHIMAVARAM
(AUTONOMOUS)
DEPARTMENT OF CSE
Academic Year: 2022-23: IV B. Tech II Semester

B. Tech - PROJECT WORK: ABSTRACT

Name of the Class / Section	IV B.Tech CSE-B		
Batch Number	B7		
Project Domain / Technology	Machine Learning using Python		
Project Title	Early prediction of low birth weight (LBW) cases using Machine Learning approach.		
Guide Name	Mrs.K.RATNA KUMARI		
Students Registered	**Registered Number**	**Student Name**	**Student Signature**
	19B01A0567	KARRI HEMA HARSHITHA	
	19B01A0574	KOMALI ARTHI	
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Signature of Internal Project Guide	**Signature of B.Tech Project – Coordinator**	**Signature of Head of the Department**

Abstract of the Project (In 200 words)

The main objective of this application is to classify whether the baby belongs to Low Birth Weight or not belongs to Low Birth Weight using machine learning algorithms.

Low Birth weight (LBW) acts as an indicator of sickness in newborn babies. LBW is closely associated with infant mortality as well as various health outcomes later in life. Various studies show a strong correlation between maternal health during pregnancy and the child's birth weight. This manuscript exploits machine learning techniques to gain useful information from health indicators of pregnant women for early detection of potential LBW cases. The forecasting problem has been reformulated as a classification problem between LBW and NOT-LBW classes using supervised Machine learning for LBW detection as a binary machine classification problem. Expectedly, the proposed model achieved better accuracy. Indian healthcare data was used to construct decision rules to be extrapolated to predictive healthcare in smart cities. A screening tool based on the decision model is developed to assist healthcare professionals in Obstetrics and Gynecology (OBG).

Existing System (If any) – Features & Drawbacks

In the existing system, the model used is Logistic Regression to estimate whether the baby belongs to the Low Birth Weight or not belongs to Low Birth. This model employs low accuracy and inaccurate results. The disadvantages are low accuracy, expensive, low reliability, and inaccurate.

Proposed System – Features
List of objectives/features that are planned to implement.

In the proposed system, we implement supervised machine learning algorithms like XGBoost Classifier, Random Forest Classifier, Support Vector Classifier, and Decision Tree Classifier for the prediction of low Birth Weight babies. The advantages are high accuracy, time-saving, not requiring highly trained staff and high reliability. This is used in hospitals, Humanitarian aid.

About Dataset:

Our Dataset contains 93 rows and 10 columns. All the records in the dataset are of type numerical data.

(i)Functional Requirements
(ii) Non Functional Requirements
(iii) Software & Hardware Requirements

Functional Requirements:

- Data Collection
- Data Preprocessing
- Training and Testing
- Modeling
- Predicting

Non-Functional Requirements:

- Logistic Regression
- Random Forest
- Neural Networks
- XG Boost
- Decision tree
- Support vector machine
- Frontend pages development

Software Requirements:

- Operating System : Windows 7+
- Server-side Script : Python 3.6+
- IDE : PyCharm.
- Libraries Used : Pandas, Numpy, Matplotlib, OS.

Hardware Requirements :

- Processor : I3/Intel Processor
- RAM : 4GB (min)
- Hard Disk : 128 GB
- Keyboard : Standard Windows Keyboard
- Mouse : Two or Three Button Mouse
- Monitor : Any

Literature Survey	[1] World Health Organization-1992, International statistical classification of diseases and related health problems, Tenth revision, Geneva, World Health Organization. [2] Kramer MS. Determinants of low birth weight: methodological assessment and meta-analysis. Bull World Health Organ. 1987; 65(5):663-737. PMID: 3322602; PMCID: PMC2491072. [3] Vega J, Sáez G, Smith M, Agurto M, Morris NM. Factores de riesgo para bajo peso al nacer y retardo de crecimiento intrauterino en Santiago de Chile [Risk factors for low birth weight and intrauterine growth retardation in Santiago, Chile]. Rev Med Chil. 1993 Oct; 121(10):1210-9. Spanish. PMID: 8191127.

Modules	**Expected date of completion**
Importing libraries, loading the dataset, and data cleaning.	20-11-2022
Feature Engineering, Exploratory Data Analysis.	25-11-2022
Frontend pages using HTML.	03-12-2022
Label Encoding, Splitting the data	15-12-2022
Predicting the accuracy of models	12-01-2023
Testing the project	07-02-2023
Project Report	11-02-2023