**PRCP-1027-Skin Disorder**

**Problem Statement**

Task 1:-Prepare a complete data analysis report on the given data.

Task 2:-Create a predictive model using machine learning techniques to predict the various classes of skin disease.

Task3:-Suggestions to the Doctors to identify the skin diseases of the patient at the earliest.

**Dataset Information:**

This database contains 34 attributes, 33 of which are linear valued and one of them is nominal.The differential diagnosis of erythemato-squamous diseases is a real problem in dermatology. They all share the clinical features of erythema and scaling, with very little differences. The diseases in this group are psoriasis, seboreic dermatitis, lichen planus, pityriasis rosea, cronic dermatitis, and pityriasis rubra pilaris. Usually a biopsy is necessary for the diagnosis but unfortunately these diseases share many histopathological features as well. Another difficulty for the differential diagnosis is that a disease may show the features of another disease at the beginning stage and may have the characteristic features at the following stages. Patients were first evaluated clinically with 12 features. Afterwards, skin samples were taken for the evaluation of 22 histopathological features. The values of the histopathological features are determined by an analysis of the samples under a microscope.In the dataset constructed for this domain, the family history feature has the value 1 if any of these diseases has been observed in the family, and 0 otherwise. The age feature simply represents the age of the patient. Every other feature (clinical and histopathological) was given a degree in the range of 0 to 3. Here, 0 indicates that the feature was not present, 3 indicates the largest amount possible, and 1, 2 indicate the relative intermediate values.The names and id numbers of the patients were recently removed from the database.

**Domain:** Healthcare

**Link :**

<https://d3ilbtxij3aepc.cloudfront.net/projects/CDS-Capstone-Projects/PRCP-1028-Skin-Disorder-Prediction-20220512T101734Z-001.zip>

**Attribute Information:**

Clinical Attributes: (take values 0, 1, 2, 3, unless otherwise indicated)

1: erythema

2: scaling

3: definite borders

4: itching

5: koebner phenomenon

6: polygonal papules

7: follicular papules

8: oral mucosal involvement

9: knee and elbow involvement

10: scalp involvement

11: family history, (0 or 1)

Histopathological Attributes: (take values 0, 1, 2, 3)

12: melanin incontinence

13: eosinophils in the infiltrate

14: PNL infiltrate

15: fibrosis of the papillary dermis

16: exocytosis

17: acanthosis

18: hyperkeratosis

19: parakeratosis

20: clubbing of the rete ridges

21: elongation of the rete ridges

22: thinning of the suprapapillary epidermis

23: spongiform pustule

24: munro microabcess

25: focal hypergranulosis

26: disappearance of the granular layer

27: vacuolisation and damage of basal layer

28: spongiosis

29: saw-tooth appearance of retes

30: follicular horn plug

31: perifollicular parakeratosis

32: inflammatory monoluclear inflitrate

33: band-like infiltrate

34: Age (linear)

**Model Comparison Report**

Create a report stating the performance of multiple models on this data and suggest the best model for production.

**Report on Challenges faced**

Create a report which should include challenges you faced on data and what technique used with proper reason.

Note:-All above task has been created on single jupyter notebook and share the same while final submission of project.