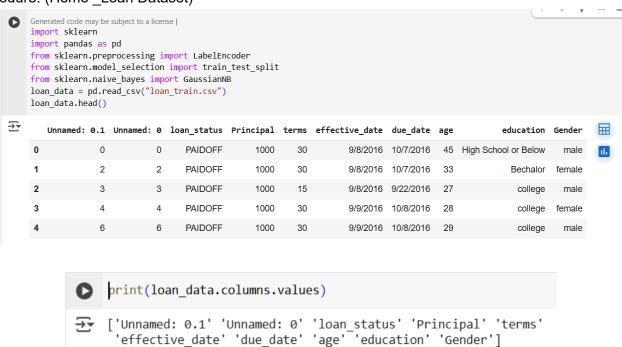
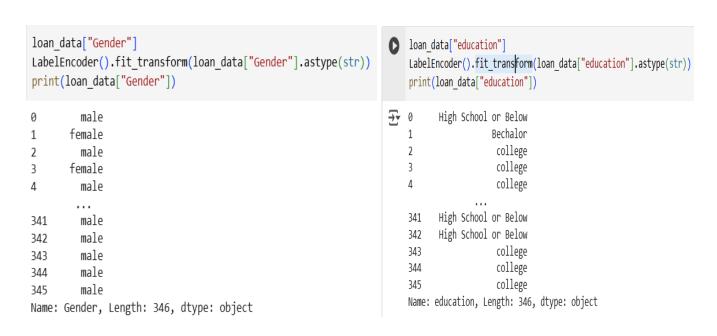
DSL Experiment 6 To implement Classification

Laboratory Exercise

A. Procedure: (Home Loan Dataset)





98.07 percent accuracy achieved

8. Post-Experiments Exercise

A. Extended Theory: (Soft Copy)

Types of classification.

Binary Classification

Involves two possible outcomes, such as True/False, Yes/No, or Fraud/Not Fraud. This type of classification uses models that output a probability score which is then thresholded to assign one of the two classes.

Multiclass Classification

Deals with scenarios where there are more than two classes, with each instance belonging to exactly one category. Examples include categorizing types of animals (Dog, Cat, Bird) or classifying news articles into different topics.

Multilabel Classification

Allows each instance to be associated with multiple labels simultaneously. For example, in text categorization, a single article might belong to multiple topics, such as both "Health" and "Technology." Models for multilabel classification are designed to predict a set of labels for each instance rather than a single label.

Ordinal Classification

Applies when the classes have a natural order or ranking, such as ratings (Low, Medium, High) or educational levels (Bachelor's, Master's, Doctorate). In ordinal classification, the model not only predicts the category but also respects the inherent order among the classes.

Hierarchical Classification

Involves classification tasks where categories are organized in a hierarchical structure. For example, in document categorization, a document might be first classified into a broad category such as "Science" and then further classified into subcategories like "Physics" or "Biology." This approach accounts for the relationships between higher-level and lower-level categories.