

## 1. Data Loading and Preprocessing

python

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```
import pandas as pd

from sklearn.model_selection import train_test_split
from sklearn.preprocessing import StandardScaler
```

```
# Load dataset
```

```
df = pd.read_csv('creditcard.csv')
```

```
# Feature selection
```

```
X = df.drop(['Class'], axis=1)
```

```
y = df['Class']
```

```
# Train-test split
```

```
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42)
```

```
# Standardize features
```

```
scaler = StandardScaler()
```

```
X_train_scaled = scaler.fit_transform(X_train)
```

```
X_test_scaled = scaler.transform(X_test)
```

## Model Training

python

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```
from sklearn.ensemble import RandomForestClassifier
```

```
# Initialize and train model
```

```
model = RandomForestClassifier(random_state=42)
```

```
model.fit(X_train_scaled, y_train)
```

### **Model Evaluation**

python

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```
from sklearn.metrics import classification_report, confusion_matrix
```

```
# Predictions
```

```
y_pred = model.predict(X_test_scaled)
```

```
# Evaluation metrics
```

```
print(classification_report(y_test, y_pred))
```

```
print(confusion_matrix(y_test, y_pred))
```