

## Model Development Phase Template

Date	06 November 2024
Team ID	739730
Project Title	Figurative Intelligence: Machine Learning for Simile and Metaphor Detection.
Maximum Marks	4 Marks

### Initial Model Training Code, Model Validation and Evaluation Report

The initial model training code will be showcased in the future through a screenshot. The model validation and evaluation report will include classification reports, accuracy, and confusion matrices for multiple models, presented through respective screenshots.

#### Initial Model Training Code:

```
vectorizer = TfidfVectorizer()
x_tfidf = vectorizer.fit_transform(x)

x_train, x_test, y_train, y_test = train_test_split(x_tfidf, y_encoded, random_state=42, test_size=0.2)
```

#### Model Validation and Evaluation Report:

Model	Classification Report	Accuracy
Logistic Regression	<pre> y_pred = model1.predict(X_test) print("Logistic Regression Accuracy:", accuracy_score(y_test, y_pred)) print("\nClassification Report:\n", classification_report(y_test, y_pred))  [3] ... Logistic Regression Accuracy: 1.0  Classification Report:               precision    recall  f1-score   support       0       1.00      1.00      1.00        41      1       1.00      1.00      1.00        38   accuracy          1.00      1.00      1.00        79  macro avg          1.00      1.00      1.00        79  weighted avg       1.00      1.00      1.00        79 </pre>	1.0

Artificial  
neural  
networks

```
D:\> y_pred_prob = model.predict(X_test.toarray())
y_pred = (y_pred_prob > 0.5).astype(int).flatten()
print("\nClassification Report:\n", classification_report(y_test, y_pred, target_names=label_encoder.classes_))

3/3 0s 42m/step

Classification Report:
precision    recall  f1-score   support

Retainer     1.00      0.98      0.99        41
Smile        0.97      1.00      0.99         38

accuracy      0.99      0.99      0.99        79
macro avg     0.99      0.99      0.99        79
weighted avg   0.99      0.99      0.99        79
```

0.9