```python
import pickle
import string

import nltk
import streamlit as st
from nltk.corpus import stopwords
from nltk.stem.porter import PorterStemmer
ps = PorterStemmer()

def transform_text(text):
  text = text.lower()
  text = nltk.word_tokenize(text)
  y = []
  for i in text:
    if i.isalnum():
      y.append(i)

  text = y[:]
  y.clear()

  for i in text:
    if i not in stopwords.words('english') and i not in string.punctuation:
      y.append(i)

  text = y[:]
  y.clear()

  for i in text:
    y.append(ps.stem(i))

  return " ".join(y)

model = pickle.load(open('model.pkl','rb'))
tfidf = pickle.load(open('vectorizer.pkl','rb'))

st.title("Email/SMS Spam Classifier")

input_sms = st.text_input("Enter the message")

if st.button('Predict'):
```

```
41    # 1.preprocess
42    transformed_sms = transform_text(input_sms)
43    # 2. vectorize
44    vector_input = tfidf.transform([transformed_sms])
45    # 3. predict
46    result = model.predict(vector_input)[0]
47    # 4. Dispay
48    if result == 1:
49        st.header("Spam")
50    else:
51        st.header("Not spam")
```