Sprint 3 -Prediction:

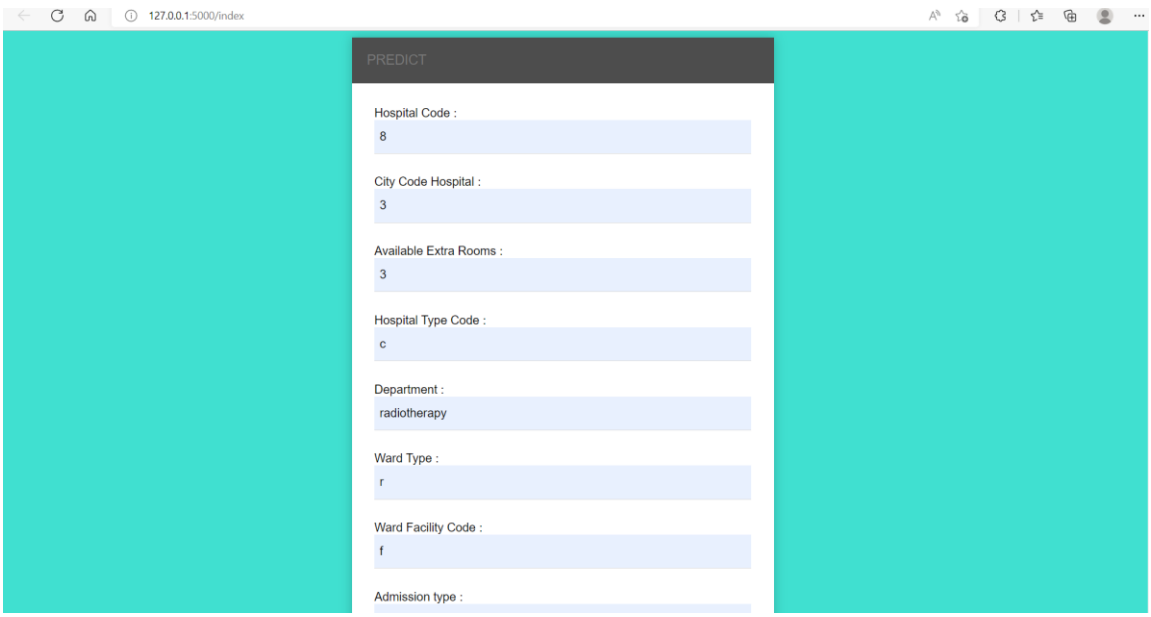
CODE:

```
    temp=[]
    columns=['Hospital_code','City_Code_Hospital','Available Extra Rooms in
Hospital','Hospital_type_code','Department','Ward_Type','Ward_Facility_Code','
Type of Admission','Severity of Illness','Age']
    hospitaltypecode_dict={'a':0,'b':1,'c':2,'d':3,'e':4,'f':5,'g':6}
    department_dict={"TB & Chest
disease":0,"anesthesia":1,"gynecology":2,"radiotherapy":3,"surgery":4}
    wardtype_dict={'p':0,'q':1,'r':2,'s':3,'t':4,'u':5}
    wardfacilitycode_dict={'a':0,'b':1,'c':2,'d':3,'e':4,'f':5}
    admissiontype_dict={"emergency":0,"trauma":1,"urgent":2}
    severityofillness_dict={"extreme":0,"minor":1,"moderate":2}
    age_dict={"0-10":0,"11-20":9,"21-30":1,"31-40":2,"41-50":3,"51-60":4,"61-
70":5,"71-80":6,"81-90":7,"91-100":8}
    temp.append(int(request.form['hospitalcode']))
    temp.append(int(request.form['citycodehospital']))
    temp.append(int(request.form['extrarooms']))
    temp.append(hospitaltypecode_dict[request.form['hospitaltypecode']])
    temp.append(department_dict[request.form['department']])
    temp.append(wardtype_dict[request.form['wardtype']])
    temp.append(wardfacilitycode_dict[request.form['wardfacilitycode']])
    temp.append(admissiontype_dict[request.form['admissiontype']])
    temp.append(severityofillness_dict[request.form['severityofillness']])
    temp.append(age_dict[request.form['age']])
    print(temp)
    df=pd.DataFrame(columns=columns)
    df=pd.concat((df,pd.DataFrame(data=[temp],columns=columns)))
    data=pd.read_csv("D:/LANAARD 7/ACADEMICS/SEM 7/NAALAYA
THIRAN/Dataset/train/train.csv")

arr=['Hospital_type_code','Hospital_region_code','Department','Ward_Type','War
d_Facility_Code','Type of Admission','Severity of Illness','Age','Stay']
    le = LabelEncoder()
    for ele in arr:
        label = le.fit_transform(data[ele])
        data.drop(ele, axis=1, inplace=True)
        data[ele]=label
    data.drop('Bed Grade',axis=1,inplace=True)
    data.drop('City_Code_Patient',axis=1,inplace=True)
    features=['Hospital_code','City_Code_Hospital','Available Extra Rooms in
Hospital','Hospital_type_code','Department','Ward_Type','Ward_Facility_Code','
Type of Admission','Severity of Illness','Age','Stay']
    X_train, X_test, y_train, y_test = train_test_split(data[features[:-1]],
data['Stay'], test_size=0.1, random_state=42)
    dtree = DecisionTreeClassifier()
    dtree = dtree.fit(X_train, y_train)
    result=dtree.predict(df)
    print("result : ",result)
```

```
    result_dict={0:"0-10 days",1:"10-20 days",2:"20-30 days",3:"30-40
days",4:"40-50 days",5:"50-60 days",6:"60-70 days",7:"70-80 days",8:"80-90
days",9:"90-100 days",10:"more than 100 days"}
    result=result_dict[result[0]]
    return render_template("index.html",result=result)
```

OUTPUT :



This shows the form that is created in the web page to get information about the patient which is then analysed by the decision tree model to predict the length of stay of the patient.