```
from pyknow import *

diseases_list = []
diseases_symptoms = []
symptom_map = {}
d_desc_map = {}
d_treatment_map = {}

def preprocess():
    global diseases_list,diseases_symptoms,symptom_map,d_desc_map,d_treatment_map
    diseases = open("diseases.txt")
    diseases_t = diseases.read()
    diseases_list = diseases_t.split("\n")
    diseases.close()
    for disease in diseases_list:
        disease_s_file = open("Disease symptoms/" + disease + ".txt")
        disease_s_data = disease_s_file.read()
        s_list = disease_s_data.split("\n")
        diseases_symptoms.append(s_list)
        symptom_map[str(s_list)] = disease
        disease_s_file.close()
        disease_s_file = open("Disease descriptions/" + disease + ".txt")
        disease_s_data = disease_s_file.read()
        d_desc_map[disease] = disease_s_data
        disease_s_file.close()
        disease_s_file = open("Disease treatments/" + disease + ".txt")
        disease_s_data = disease_s_file.read()
        d_treatment_map[disease] = disease_s_data
        disease_s_file.close()
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def identify_disease(*arguments):
	symptom_list = []
	for symptom in arguments:
		symptom_list.append(symptom)
	# Handle key error
	return symptom_map[str(symptom_list)]


def get_details(disease):
	return d_desc_map[disease]


def get_treatments(disease):
	return d_treatment_map[disease]


def if_not_matched(disease):
		print("")
		id_disease = disease
		disease_details = get_details(id_disease)
		treatments = get_treatments(id_disease)
		print("")
		print("The most probable disease that you have is %s\n" %(id_disease))
		print("A short description of the disease is given below :\n")
		print(disease_details+"\n")
		print("The common medications and procedures suggested by other real doctors
are: \n")
		print(treatments+"\n")


# @my_decorator is just a way of saying just_some_function = my_decorator(just_some_function)
#def identify_disease(headache, back_pain, chest_pain, cough, fainting, sore_throat, fatigue,
restlessness,low_body_temp ,fever,sunken_eyes):
class Greetings(KnowledgeEngine):
	@DefFacts()
	def _initial_action(self):
```

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        print("")
        print("Hi! I am Dr.Yar, I am here to help you make your health better.")
        print("For that you'll have to answer a few questions about your conditions")
        print("Do you feel any of the following symptoms:")
        print("")
        yield Fact(action="find_disease")


@Rule(Fact(action='find_disease'), NOT(Fact(headache=W())),salience = 1)
def symptom_0(self):
        self.declare(Fact(headache=input("headache: ")))

@Rule(Fact(action='find_disease'), NOT(Fact(back_pain=W())),salience = 1)
def symptom_1(self):
        self.declare(Fact(back_pain=input("back pain: ")))

@Rule(Fact(action='find_disease'), NOT(Fact(chest_pain=W())),salience = 1)
def symptom_2(self):
        self.declare(Fact(chest_pain=input("chest pain: ")))

@Rule(Fact(action='find_disease'), NOT(Fact(cough=W())),salience = 1)
def symptom_3(self):
        self.declare(Fact(cough=input("cough: ")))

@Rule(Fact(action='find_disease'), NOT(Fact(fainting=W())),salience = 1)
def symptom_4(self):
        self.declare(Fact(fainting=input("fainting: ")))

@Rule(Fact(action='find_disease'), NOT(Fact(fatigue=W())),salience = 1)
def symptom_5(self):
        self.declare(Fact(fatigue=input("fatigue: ")))
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    @Rule(Fact(action='find_disease'), NOT(Fact(sunken_eyes=W())),salience = 1)
    def symptom_6(self):
        self.declare(Fact(sunken_eyes=input("sunken eyes: ")))

    @Rule(Fact(action='find_disease'), NOT(Fact(low_body_temp=W())),salience = 1)
    def symptom_7(self):
        self.declare(Fact(low_body_temp=input("low body temperature: ")))

    @Rule(Fact(action='find_disease'), NOT(Fact(restlessness=W())),salience = 1)
    def symptom_8(self):
        self.declare(Fact(restlessness=input("restlessness: ")))

    @Rule(Fact(action='find_disease'), NOT(Fact(sore_throat=W())),salience = 1)
    def symptom_9(self):
        self.declare(Fact(sore_throat=input("sore throat: ")))

    @Rule(Fact(action='find_disease'), NOT(Fact(fever=W())),salience = 1)
    def symptom_10(self):
        self.declare(Fact(fever=input("fever: ")))

    @Rule(Fact(action='find_disease'), NOT(Fact(nausea=W())),salience = 1)
    def symptom_11(self):
        self.declare(Fact(nausea=input("Nausea: ")))

    @Rule(Fact(action='find_disease'), NOT(Fact(blurred_vision=W())),salience = 1)
    def symptom_12(self):
        self.declare(Fact(blurred_vision=input("blurred_vision: ")))

    @Rule(Fact(action='find_disease'),Fact(headache="no"),Fact(back_pain="no"),Fact(chest_pa
in="no"),Fact(cough="no"),Fact(fainting="no"),Fact(sore_throat="no"),Fact(fatigue="yes"),Fact(restle
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ssness="no"),Fact(low_body_temp="no"),Fact(fever="yes"),Fact(sunken_eyes="no"),Fact(nausea="ye
s"),Fact(blurred_vision="no"))

    def disease_0(self):

        self.declare(Fact(disease="Jaundice"))


    @Rule(Fact(action='find_disease'),Fact(headache="no"),Fact(back_pain="no"),Fact(chest_pa
in="no"),Fact(cough="no"),Fact(fainting="no"),Fact(sore_throat="no"),Fact(fatigue="no"),Fact(restles
sness="yes"),Fact(low_body_temp="no"),Fact(fever="no"),Fact(sunken_eyes="no"),Fact(nausea="no
"),Fact(blurred_vision="no"))

    def disease_1(self):

        self.declare(Fact(disease="Alzheimers"))


    @Rule(Fact(action='find_disease'),Fact(headache="no"),Fact(back_pain="yes"),Fact(chest_p
ain="no"),Fact(cough="no"),Fact(fainting="no"),Fact(sore_throat="no"),Fact(fatigue="yes"),Fact(restl
essness="no"),Fact(low_body_temp="no"),Fact(fever="no"),Fact(sunken_eyes="no"),Fact(nausea="n
o"),Fact(blurred_vision="no"))

    def disease_2(self):

        self.declare(Fact(disease="Arthritis"))


    @Rule(Fact(action='find_disease'),Fact(headache="no"),Fact(back_pain="no"),Fact(chest_pa
in="yes"),Fact(cough="yes"),Fact(fainting="no"),Fact(sore_throat="no"),Fact(fatigue="no"),Fact(restl
essness="no"),Fact(low_body_temp="no"),Fact(fever="yes"),Fact(sunken_eyes="no"),Fact(nausea="
no"),Fact(blurred_vision="no"))

    def disease_3(self):

        self.declare(Fact(disease="Tuberculosis"))


    @Rule(Fact(action='find_disease'),Fact(headache="no"),Fact(back_pain="no"),Fact(chest_pa
in="yes"),Fact(cough="yes"),Fact(fainting="no"),Fact(sore_throat="no"),Fact(fatigue="no"),Fact(restl
essness="yes"),Fact(low_body_temp="no"),Fact(fever="no"),Fact(sunken_eyes="no"),Fact(nausea="
no"),Fact(blurred_vision="no"))

    def disease_4(self):

        self.declare(Fact(disease="Asthma"))


    @Rule(Fact(action='find_disease'),Fact(headache="yes"),Fact(back_pain="no"),Fact(chest_p
ain="no"),Fact(cough="yes"),Fact(fainting="no"),Fact(sore_throat="yes"),Fact(fatigue="no"),Fact(rest
lessness="no"),Fact(low_body_temp="no"),Fact(fever="yes"),Fact(sunken_eyes="no"),Fact(nausea="
no"),Fact(blurred_vision="no"))
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    def disease_5(self):
        self.declare(Fact(disease="Sinusitis"))

    @Rule(Fact(action='find_disease'),Fact(headache="no"),Fact(back_pain="no"),Fact(chest_pain="no"),Fact(cough="no"),Fact(fainting="no"),Fact(sore_throat="no"),Fact(fatigue="yes"),Fact(restlessness="no"),Fact(low_body_temp="no"),Fact(fever="no"),Fact(sunken_eyes="no"),Fact(nausea="no"),Fact(blurred_vision="no"))
    def disease_6(self):
        self.declare(Fact(disease="Epilepsy"))

    @Rule(Fact(action='find_disease'),Fact(headache="no"),Fact(back_pain="no"),Fact(chest_pain="yes"),Fact(cough="no"),Fact(fainting="no"),Fact(sore_throat="no"),Fact(fatigue="no"),Fact(restlessness="no"),Fact(low_body_temp="no"),Fact(fever="no"),Fact(sunken_eyes="no"),Fact(nausea="yes"),Fact(blurred_vision="no"))
    def disease_7(self):
        self.declare(Fact(disease="Heart Disease"))

    @Rule(Fact(action='find_disease'),Fact(headache="no"),Fact(back_pain="no"),Fact(chest_pain="no"),Fact(cough="no"),Fact(fainting="no"),Fact(sore_throat="no"),Fact(fatigue="yes"),Fact(restlessness="no"),Fact(low_body_temp="no"),Fact(fever="no"),Fact(sunken_eyes="no"),Fact(nausea="yes"),Fact(blurred_vision="yes"))
    def disease_8(self):
        self.declare(Fact(disease="Diabetes"))

    @Rule(Fact(action='find_disease'),Fact(headache="yes"),Fact(back_pain="no"),Fact(chest_pain="no"),Fact(cough="no"),Fact(fainting="no"),Fact(sore_throat="no"),Fact(fatigue="no"),Fact(restlessness="no"),Fact(low_body_temp="no"),Fact(fever="no"),Fact(sunken_eyes="no"),Fact(nausea="yes"),Fact(blurred_vision="yes"))
    def disease_9(self):
        self.declare(Fact(disease="Glaucoma"))

    @Rule(Fact(action='find_disease'),Fact(headache="no"),Fact(back_pain="no"),Fact(chest_pain="no"),Fact(cough="no"),Fact(fainting="no"),Fact(sore_throat="no"),Fact(fatigue="yes"),Fact(restlessness="no"),Fact(low_body_temp="no"),Fact(fever="no"),Fact(sunken_eyes="no"),Fact(nausea="yes"),Fact(blurred_vision="no"))
    def disease_10(self):
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                self.declare(Fact(disease="Hyperthyroidism"))


        @Rule(Fact(action='find_disease'),Fact(headache="yes"),Fact(back_pain="no"),Fact(chest_p
ain="no"),Fact(cough="no"),Fact(fainting="no"),Fact(sore_throat="no"),Fact(fatigue="no"),Fact(restle
ssness="no"),Fact(low_body_temp="no"),Fact(fever="yes"),Fact(sunken_eyes="no"),Fact(nausea="ye
s"),Fact(blurred_vision="no"))
        def disease_11(self):
                self.declare(Fact(disease="Heat Stroke"))


        @Rule(Fact(action='find_disease'),Fact(headache="no"),Fact(back_pain="no"),Fact(chest_pa
in="no"),Fact(cough="no"),Fact(fainting="yes"),Fact(sore_throat="no"),Fact(fatigue="no"),Fact(restle
ssness="no"),Fact(low_body_temp="yes"),Fact(fever="no"),Fact(sunken_eyes="no"),Fact(nausea="n
o"),Fact(blurred_vision="no"))
        def disease_12(self):
                self.declare(Fact(disease="Hypothermia"))


        @Rule(Fact(action='find_disease'),Fact(disease=MATCH.disease),salience = -998)
        def disease(self, disease):
                print("")
                id_disease = disease
                disease_details = get_details(id_disease)
                treatments = get_treatments(id_disease)
                print("")
                print("The most probable disease that you have is %s\n" %(id_disease))
                print("A short description of the disease is given below :\n")
                print(disease_details+"\n")
                print("The common medications and procedures suggested by other real doctors
are: \n")
                print(treatments+"\n")


        @Rule(Fact(action='find_disease'),
                  Fact(headache=MATCH.headache),
                  Fact(back_pain=MATCH.back_pain),
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                Fact(chest_pain=MATCH.chest_pain),
                Fact(cough=MATCH.cough),
                Fact(fainting=MATCH.fainting),
                Fact(sore_throat=MATCH.sore_throat),
                Fact(fatigue=MATCH.fatigue),
                Fact(low_body_temp=MATCH.low_body_temp),
                Fact(restlessness=MATCH.restlessness),
                Fact(fever=MATCH.fever),
                Fact(sunken_eyes=MATCH.sunken_eyes),
                Fact(nausea=MATCH.nausea),

Fact(blurred_vision=MATCH.blurred_vision),NOT(Fact(disease=MATCH.disease)),salience = -999)


        def not_matched(self,headache, back_pain, chest_pain, cough, fainting, sore_throat, fatigue,
restlessness,low_body_temp ,fever ,sunken_eyes ,nausea ,blurred_vision):
                print("\nDid not find any disease that matches your exact symptoms")
                lis = [headache, back_pain, chest_pain, cough, fainting, sore_throat, fatigue,
restlessness,low_body_temp ,fever ,sunken_eyes ,nausea ,blurred_vision]
                max_count = 0
                max_disease = ""
                for key,val in symptom_map.items():
                        count = 0
                        temp_list = eval(key)
                        for j in range(0,len(lis)):
                                if(temp_list[j] == lis[j] and lis[j] == "yes"):
                                        count = count + 1
                        if count > max_count:
                                max_count = count
                                max_disease = val
                if_not_matched(max_disease)
```

```
if __name__ == "__main__":
        preprocess()
        engine = Greetings()
        while(1):
                engine.reset()  # Prepare the engine for the execution.
                engine.run()  # Run it!
                print("Would you like to diagnose some other symptoms?")
                if input() == "no":
                        exit()
                #print(engine.facts)
```