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Mother Follower Expert System

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Task Assignment

Task	Team Member
▪ The purpose of the expert system	All team members.
▪ The users of the system	
▪ The experts	
▪ Resources will be used	
▪ List of rules	
▪ The technique used to acquire knowledge from the system	
▪ Flowchart diagram for Wildlife system	
▪ Source code	



1. Introduction

1.1. Purpose of the System

Our system aims to follow up with the expectant mother during her pregnancy, describing what she needs in terms of treatments, nutritional supplements, and advice that will help her have a healthy and comfortable pregnancy for her and her fetus.

1.2. Users of the System

- The woman who is planning to be pregnant
- The pregnant woman

1.3. Expert of the System

Describe the appropriate treatments, nutritional supplements, and advice for the expectant mother based on the duration of her pregnancy and the symptoms she feels through her answers to several questions.

1.4. Used Resources

- You and Pregnancy Application.
- Gathering information by asking our mothers and friends who have experience with pregnancy, by benefiting from what they went through and the pieces of advice of their doctors during pregnancy.



2. Body

2.1. List of Rules

R1: If the mother's answers are limited to:

- first trimester (0-12 weeks)
- No, I don't take.

Then, the answer is "You should take prenatal vitamins and folic acid".

R1.1: If the mother's answers are limited to:

- first trimester (0-12 weeks)
- Yes, I take.

Then, the answer is "That is so good".

R2: If the mother's answers are limited to:

- first trimester (0-12 weeks)
- Yes, I have experiencing morning sickness.

Then, the answer is "Recommend taking ginger supplements to alleviate nausea".

R2.1: If the mother's answers are limited to:

- first trimester (0-12 weeks)
- No, I have not experienced morning sickness.

Then, the answer is "That is so good".

R3: If the mother's answers are limited to:

- first trimester (0-12 weeks)
- Yes, I have a history of recurrent miscarriages.

Then, the answer is "Prescribe progesterone supplements to support the pregnancy".

R3.1: If the mother's answers are limited to:

- first trimester (0-12 weeks)
- No, I have not a history of recurrent miscarriages.

Then, the answer is "That is so good".

R4: If the mother's answers are limited to:

- second trimester (13-27 weeks)
- Yes, I have low iron levels.

Then, the answer is "Prescribe iron supplements to prevent anemia."

R4.1: If the mother's answers are limited to:

- second trimester (13-27 weeks)
- No, I do have not low iron levels.

Then, the answer is "That is so good."

R5: If the mother's answers are limited to:

- third trimester (28-40 weeks)
- Yes, I have experiencing heartburn.

Then, the answer is "Advise avoiding spicy and greasy foods and recommend taking antacids after meals".

R5.1: If the mother's answers are limited to:

- third trimester (28-40 weeks)
- No, I have not experienced heartburn.

Then, the answer is "That is so good".

R6: If the mother's answers are limited to:

- third trimester (28-40 weeks)
- Yes, I have swollen ankles.

Then, the answer is "Suggest elevating the legs and avoiding prolonged standing or sitting".

R6.1: If the mother's answers are limited to:

- third trimester (28-40 weeks)
- No, I have no swollen ankles.

Then, the answer is "That is so good".

R7: If the mother's answers are limited to:

- third trimester (28-40 weeks)
- Yes, I have experiencing back pain.

Then, the answer is "Recommend prenatal yoga, gentle stretching, and using a pregnancy support belt".

R7.1: If the mother's answers are limited to:

- third trimester (28-40 weeks)
- No, I have not experienced back pain.

Then, the answer is "That is so good".

R8: If the mother's answers are limited to:

- third trimester (28-40 weeks)
- Yes, I have swelling in the hands and face along with high blood pressure.

Then, the answer is "consult a healthcare professional immediately as it may indicate preeclampsia".

R8.1: If the mother's answers are limited to:

- third trimester (28-40 weeks).
- No, I have no swelling in the hands and face along with high blood pressure.

Then, the answer is "That is so good".

R9: If the mother's answers are limited to:

- third trimester (28-40 weeks)
- Yes, I have experiencing shortness of breath.

Then, the answer is "Advise her to maintain good posture, practice deep breathing exercises, and avoid overexertion".

R9.1: If the mother's answers are limited to:

- third trimester (28-40 weeks)
- No, I have not experienced shortness of breath.

Then, the answer is "That is so good".

R10: If the mother's answers are limited to:

- third trimester (28-40 weeks)
- Yes, I have reduced fetal movement.

Then, the answer is "Advise her to seek immediate medical attention for further evaluation".

R10.1: If the mother's answers are limited to:

- third trimester (28-40 weeks)
- No, I have not reduced fetal movement.

Then, the answer is "That is so good".

R11: If the mother's answers are limited to:

- third trimester (28-40 weeks)
- Yes, I have Regular contractions, lasting less than two minutes between one contraction and the next, Extreme pressure and stress on the mother, and the descent of the fetal waters.

Then, the answer is " It may be childbirth, and you should go to the doctor immediately ".

R11.1: If the mother's answers are limited to:

- third trimester (28-40 weeks)
- No, I have no Regular contractions, lasting less than two minutes between one contraction and the next, Extreme pressure and stress on the mother, and the descent of the fetal waters.

Then, the answer is "That is so good".

R12: If the mother's answers are limited to:

- second trimester (13-27 weeks) or third trimester (28-40 weeks)
- Yes, I have gestational diabetes.

Then, the answer is "Recommend a balanced diet with controlled carbohydrate intake and regular exercise".

R12.1: If the mother's answers are limited to:

- second trimester (13-27 weeks) or third trimester (28-40 weeks)
- No, I have not gestational diabetes.

Then, the answer is "That is so good".

R13: If the mother's answers are limited to:

- second trimester (13-27 weeks) or third trimester (28-40 weeks)
- Yes, I have constipation.

Then, the answer is "Advise increasing fiber intake and drinking plenty of water".

R13.1: If the mother's answers are limited to:

- second trimester (13-27 weeks) or third trimester (28-40 weeks)
- No, I have no constipation.

Then, the answer is "That is so good".

R14: If the mother's answers are limited to:

- second trimester (13-27 weeks) or third trimester (28-40 weeks)
- Yes, I have trouble sleeping.

Then, the answer is "Recommend establishing a bedtime routine, maintaining a comfortable sleep environment, and practicing relaxation techniques such as deep breathing or prenatal meditation".

R14.1: If the mother's answers are limited to:

- second trimester (13-27 weeks) or third trimester (28-40 weeks)
- No, I have no trouble sleeping.

Then, the answer is "That is so good".

R15: If the mother's answers are limited to:

- second trimester (13-27 weeks) or third trimester (28-40 weeks)
- Yes, I have experiencing leg cramps.

Then, the answer is "Recommend gentle stretching exercises and increasing intake of calcium and magnesium-rich foods or supplements".

R15.1: If the mother's answers are limited to:

- second trimester (13-27 weeks) or third trimester (28-40 weeks)
- No, I have not experienced leg cramps.

Then, the answer is "That is so good".

R16: If the mother's answers are limited to:

- first trimester (0-12 weeks) or second trimester (13-27 weeks) or third trimester (28-40 weeks)
- Yes, I have a Rh-negative blood type.

Then, the answer is "Recommend receiving Rh immunoglobulin (RhIg) to prevent potential issues with Rh incompatibility "

R16.1: If the mother's answers are limited to:

- first trimester (0-12 weeks) or second trimester (13-27 weeks) or third trimester (28-40 weeks)
- No, I have not a Rh-negative blood type.

Then, the answer is "That is so good".

R17: If the mother's answers are limited to:

- first trimester (0-12 weeks) or second trimester (13-27 weeks) or third trimester (28-40 weeks)
- Yes, I have Breathing difficulty, Swelling of the face, legs, and hands, Blurred eyes and blurred vision, Fainting spells, Continuous diarrhea, and vomiting, or High body temperature or Spasms of the limbs and chest.

Then, the answer is " You should go to the doctor immediately ".

R17.1: If the mother's answers are limited to:

- first trimester (0-12 weeks) or second trimester (13-27 weeks) or third trimester (28-40 weeks)
- No, I do not have Breathing difficulty, Swelling of the face, legs, and hands, Blurred eyes and blurred vision, Fainting spells, Continuous diarrhea, and vomiting, or High body temperature or Spasms of the limbs and chest.

Then, the answer is " You should go to the doctor immediately ".

R18: If the mother's answers are limited to:

- first trimester (0-12 weeks) or second trimester (13-27 weeks) or third trimester (28-40 weeks)
- Yes, I want.

Then, the answer is "Some tips that you should follow:

- Avoid X-rays.
- Avoid approaching cats.
- Avoid getting close to the paint.
- Get the necessary vitamins by consulting your doctor.
- Stay away from raw fish like sushi.
- Avoid fish that are high in iodine.
- Stay away from unpasteurized cheese.
- Stay away from cold cuts like sausage and mortadella.
- Avoid drinking too much coffee".

R18.1: If the mother's answers are limited to:

- first trimester (0-12 weeks) or second trimester (13-27 weeks) or third trimester (28-40 weeks)
- No, I do not want.

Then, the answer is " We wish you a healthy and comfortable pregnancy.

Thanks for using our system :)".

The technique we used is backward chaining, first, we conclude all possible results and write the rules based on those results, using Experta.

[illegible]

To see clearly click on the link <https://cutt.us/0vSRn>



3. References

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4. Appendix

4.1. Source Code

```
from experta import *
class Mother(Fact):
    pass

class MotherQ1(KnowledgeEngine):
    @Rule(AND(Mother(MotherState = 'yes')), (Mother(trimesterOfPregnancy
='f'))))
    def first_trimester(self):
        ask1_vitamins=input("Do you take prenatal vitamins and folic acid?
(yes/no) ").lower()
        if ask1_vitamins == 'yes':
            print("\nThat is so good \n\n")
        elif ask1_vitamins == 'no':
            print("\nYou should take prenatal vitamins and folic acid\n\n")
        ask1_sickness=input("Do you experience morning sickness? (yes/no)
").lower()
        if ask1_sickness == 'no':
            print("\nThat is so good \n\n")
        elif ask1_sickness == 'yes':
            print("\nRecommend taking ginger supplements to alleviate nausea
\n\n")
        ask1_miscarriages=input("Do you have a history of recurrent
miscarriages? (yes/no) ").lower()
        if ask1_miscarriages == 'no':
            print("\nThat is so good \n\n")
        elif ask1_miscarriages == 'yes':
            print("\nPrescribe progesterone supplements to support the
pregnancy \n\n")
        ask1_bloodType=input("Do you have an Rh-negative blood type?
(yes/no) ").lower()
        if ask1_bloodType == 'no':
            print("\nThat is so good \n\n")
        elif ask1_bloodType == 'yes':
            print("\nRecommend receiving Rh immunoglobulin (RhIg) to prevent
potential issues with Rh incompatibility \n\n")
        ask1_criticalCases=input("Do you suffer from any of the following?
Breathing difficulty or Swelling of the face, legs, and hands or
Blurred eyes\n")
        "and blurred vision or Fainting spells or Continuous diarrhea and
vomiting or High body temperature or Spasms of the limbs and chest?
(yes/no) ").lower()
        if ask1_criticalCases == 'no':
            print("\nThat is so good \n\n")
        elif ask1_criticalCases == 'yes':
```



```
print("\nYou should go to the doctor immediately \n\n")
ask1_tips=input("Do you want some suggestions for useful tips to
follow? (yes/no) ").lower()
if ask1_tips == 'no':
    print("\nWe wish you a healthy and comfortable pregnancy \n"
"Thanks for using our system :) \n\n")
elif ask1_tips == 'yes':
    print("\n• Avoid x-rays.\n• Avoid approaching cats.\n• Avoid
getting close to the paint\n• Get the necessary vitamins by
consulting your doctor\n"
        "\n• Stay away from raw fish like sushi \n• Avoid fish that are
high in iodine\n• Stay away from unpasteurized cheese\n"
        "\n• Stay away from cold cuts like sausage and mortadella\n• Avoid
drinking too much coffee.\n\n")
    print("\nWe wish you a healthy and comfortable pregnancy \n"
"Thanks for using our system :) \n\n")
#####
@Rule (AND (Mother (MotherState = 'yes')), (Mother (trimesterOfPregnancy
='s'))))
def second_trimester(self):
    ask2_iron=input("Do you have low iron levels? (yes/no) ").lower()
    if ask2_iron == 'yes':
        print("\n Prescribe iron supplements to prevent anemia. \n\n")
    elif ask2_iron == 'no':
        print("\nThat is so good\n\n")
    ask2_gestational=input("Do you have gestational diabetes? (yes/no)
").lower()
    if ask2_gestational == 'yes':
        print("\n Recommend a balanced diet with controlled carbohydrate
intake and regular exercise\n\n")
    elif ask2_gestational == 'no':
        print("\nThat is so good\n\n")
    ask2_constipation=input("Do you have constipation? (yes/no)
").lower()
    if ask2_constipation == 'yes':
        print("\n Advise increasing fiber intake and drinking plenty of
water\n\n")
    elif ask2_constipation == 'no':
        print("\nThat is so good\n\n")
    ask2_sleeping=input("Do you have trouble sleeping? (yes/no)
").lower()
    if ask2_sleeping == 'yes':
        print("\n Recommend establishing a bedtime routine, maintaining a
comfortable sleep environment,\n "
            "\nand practicing relaxation techniques such as deep breathing or
prenatal meditation\n\n")
```



```
elif ask2_sleeping == 'no':
    print("\nThat is so good\n\n")
    ask2_legcramps=input("Do you have experience leg cramps? (yes/no)
").lower()
    if ask2_legcramps == 'yes':
        print("\n Recommend gentle stretching exercises and increasing
intake of calcium and magnesium-rich foods or supplements\n\n")
    elif ask2_legcramps == 'no':
        print("\nThat is so good\n\n")
    ask2_bloodType=input("Do you have an Rh-negative blood type?
(yes/no) ").lower()
    if ask2_bloodType == 'no':
        print("\nThat is so good \n\n")
    elif ask2_bloodType == 'yes':
        print("\n Recommend receiving Rh immunoglobulin (RhIg) to prevent
potential issues with Rh incompatibility \n\n")
    ask2_criticalCases=input("Do you suffer from any of the following?
Breathing difficulty or Swelling of the face, legs, and hands or
Blurred eyes\n")
    "and blurred vision or Fainting spells or Continuous diarrhea and
vomiting or High body temperature or Spasms of the limbs and chest?
(yes/no) ").lower()
    if ask2_criticalCases == 'no':
        print("\nThat is so good \n\n")
    elif ask2_criticalCases == 'yes':
        print("\n You should go to the doctor immediately \n\n")
    ask2_tips=input("Do you want some suggestions for useful tips to
follow? (yes/no) ").lower()
    if ask2_tips == 'no':
        print("\n We wish you a healthy and comfortable pregnancy \n"
"Thanks for using our system :) \n\n")
    elif ask2_tips == 'yes':
        print("\n• Avoid x-rays.\n• Avoid approaching cats.\n• Avoid
getting close to the paint\n"
"• Get the necessary vitamins by consulting your doctor\n"
"• Stay away from raw fish like sushi \n• Avoid fish that are
high in iodine\n• Stay away from unpasteurized cheese\n"
"• Stay away from cold cuts like sausage and mortadella\n• Avoid
drinking too much coffee.\n\n")
        print("\nWe wish you a healthy and comfortable pregnancy \n"
"Thanks for using our system :) \n\n")
#####
#####
@Rule(AND(Mother(MotherState = 'yes')), (Mother(trimesterOfPregnancy
='t'))))
def third_trimester(self):
```



```
ask3_heartburn=input("Do you have to experience heartburn?  
(yes/no) ").lower()  
if ask3_heartburn == 'yes':  
    print("\n Advise avoiding spicy and greasy foods and recommend  
taking antacids after meals \n\n")  
elif ask3_heartburn == 'no':  
    print("\nThat is so good\n\n")  
ask3_ankles=input("Do you have swollen ankles? (yes/no) ").lower()  
if ask3_ankles == 'yes':  
    print("\n Suggest elevating the legs and avoiding prolonged  
standing or sitting. \n\n")  
elif ask3_ankles == 'no':  
    print("\nThat is so good\n\n")  
ask3_backpain=input("Do you experience back pain? (yes/no)  
").lower()  
if ask3_backpain == 'yes':  
    print("\n Recommend prenatal yoga, gentle stretching, and using a  
pregnancy support belt \n\n")  
elif ask3_backpain == 'no':  
    print("\nThat is so good\n\n")  
ask3_swelling=input("Do you have swelling in the hands and face  
along with high blood pressure? (yes/no) ").lower()  
if ask3_swelling == 'yes':  
    print("\n Consult a healthcare professional immediately as it may  
indicate preeclampsia \n\n")  
elif ask3_swelling == 'no':  
    print("\nThat is so good\n\n")  
ask3_breath =input("Do you have experiencing shortness of breath?  
(yes/no) ").lower()  
if ask3_breath == 'yes':  
    print("\n Advise her to maintain good posture, practice deep  
breathing exercises, and avoid overexertion \n\n")  
elif ask3_breath == 'no':  
    print("\nThat is so good\n\n")  
ask3_fetal=input("Do you have reduced fetal movement? (yes/no)  
").lower()  
if ask3_fetal == 'yes':  
    print("\n Advise her to seek immediate medical attention for  
further evaluation \n\n")  
elif ask3_fetal == 'no':  
    print("\nThat is so good\n\n")  
ask3_Prematurebirth=input("Do you have regular contractions,  
lasting less than two minutes between one contraction and the  
next,\n"  
    " extreme pressure and stress on you, and the descent of the  
fetal waters?").lower()  
if ask3_Prematurebirth == 'yes':
```



```
print("\n It may be childbirth, and you should go to the doctor
immediately\n\n")
elif ask3_Prematurebirth == 'no':
    print("\nThat is so good\n\n")
    ask3_gestational=input("Do you have gestational diabetes? (yes/no)
").lower()
    if ask3_gestational == 'yes':
        print("\n Recommend a balanced diet with controlled carbohydrate
intake and regular exercise\n\n")
    elif ask3_gestational == 'no':
        print("\nThat is so good\n\n")
        ask3_constipation=input("Do you have constipation? (yes/no)
").lower()
        if ask3_constipation == 'yes':
            print("\n Advise increasing fiber intake and drinking plenty of
water\n\n")
        elif ask3_constipation == 'no':
            print("\nThat is so good\n\n")
            ask3_sleeping=input("Do you have trouble sleeping? (yes/no)
").lower()
            if ask3_sleeping == 'yes':
                print("\n Recommend establishing a bedtime routine, maintaining a
comfortable sleep environment,\n "
                    "and practicing relaxation techniques such as deep breathing or
prenatal meditation\n\n")
            elif ask3_sleeping == 'no':
                print("\nThat is so good\n\n")
                ask3_legcramps=input("Do you have experience leg cramps? (yes/no)
").lower()
                if ask3_legcramps == 'yes':
                    print("\n Recommend gentle stretching exercises and increasing
intake of calcium and magnesium-rich foods or supplements\n\n")
                elif ask3_legcramps == 'no':
                    print("\nThat is so good\n\n")
                    ask3_bloodType=input("Do you have an Rh-negative blood type?
(yes/no) ").lower()
                    if ask3_bloodType == 'no':
                        print("\nThat is so good \n\n")
                    elif ask3_bloodType == 'yes':
                        print("\n Recommend receiving Rh immunoglobulin (RhIg) to prevent
potential issues with Rh incompatibility \n\n")
                    ask3_criticalCases=input("Do you suffer from any of the following?
Breathing difficulty or Swelling of the face, legs, and hands or
Blurred eyes\n"
                        "and blurred vision or Fainting spells or Continuous diarrhea and
vomiting or High body temperature or Spasms of the limbs and chest?
(yes/no) ").lower()
```




```
if ask3_criticalCases == 'no':
    print("\nThat is so good \n\n")
elif ask3_criticalCases == 'yes':
    print("\n You should go to the doctor immediately \n\n")
    ask3_tips=input("Do you want some suggestions for useful tips to
follow? (yes/no) ").lower()
    if ask3_tips == 'no':
        print("\n We wish you a healthy and comfortable pregnancy \n"
        "Thanks for using our system :) \n\n")
    elif ask3_tips == 'yes':
        print("\n• Avoid x-rays.\n• Avoid approaching cats.\n• Avoid
getting close to the paint\n"
        "• Get the necessary vitamins by consulting your doctor\n"
        "• Stay away from raw fish like sushi \n• Avoid fish that are
high in iodine\n"
        "• Stay away from unpasteurized cheese\n"
        "• Stay away from cold cuts like sausage and mortadella\n"
        "• Avoid drinking too much coffee.\n\n")
        print("\nWe wish you a healthy and comfortable pregnancy \n"
        "Thanks for using our system :) \n\n")

#start
ask_motherState=input("Are you pregnant or are you planning to be
pregnant? (yes/no) ").lower()
if ask_motherState == 'no':
    print("\nWe wish you a healthy and comfortable pregnancy \n"
    "Thanks for using our system :) \n\n")
elif ask_motherState == 'yes':
    engine=MotherQ1()
    engine.reset()
    ask_trimesterOfPregnancy= input("In which trimester of pregnancy are
you? (first trimester(0-12 weeks)/second trimester(13-27 weeks)/third
trimester(28-40 weeks))\n"
    " (->Enter F for first ,S for second ,T for third) ").lower()
    engine.declare(Mother(MotherState=ask_motherState,trimesterOfPregnan
cy=ask_trimesterOfPregnancy))
    engine.run()
    engine.reset()
    engine.run()
```

4.2. Screenshots of the system's results

Are you pregnant or are you planning to be pregnant? (yes/no) no

Sorry, our system cannot serve you):

Figure 2: Output 1

Are you pregnant or are you planning to be pregnant? (yes/no) yes
 In which trimester of pregnancy are you? (first trimester(0-12 weeks)/second trimester(13-27 weeks)/third trimester(28-40 weeks))
 (->Enter F for first ,S for second ,T for third) F
 Do you take prenatal vitamins and folic acid? (yes/no) no
 You should take prenatal vitamins and folic acid

Do you experience morning sickness? (yes/no) yes
 Recommend taking ginger supplements to alleviate nausea

Do you have a history of recurrent miscarriages? (yes/no) no
 That is so good

Do you have an Rh-negative blood type? (yes/no) yes
 Recommend receiving Rh immunoglobulin (RhIg) to prevent potential issues with Rh incompatibility

Do you suffer from any of the following? Breathing difficulty or Swelling of the face, legs, and hands or Blurred eyes and blurred vision or Fainting spells or Continuous diarrhea and vomiting or High body temperature or Spasms of the limbs and chest? (yes/no) yes
 You should go to the doctor immediately

Do you want some suggestions for useful tips to follow? (yes/no) yes

- Avoid x-rays.
- Avoid approaching cats.
- Avoid getting close to the paint
- Get the necessary vitamins by consulting your doctor
- Stay away from raw fish like sushi
- Avoid fish that are high in iodine
- Stay away from unpasteurized cheese
- Stay away from cold cuts like sausage and mortadella
- Avoid drinking too much coffee.

We wish you a healthy and comfortable pregnancy
 Thanks for using our system :)

Figure 3: Output 2



Are you pregnant or are you planning to be pregnant? (yes/no) yes
In which trimester of pregnancy are you? (first trimester(0-12 weeks)/second trimester(13-27 weeks)/third trimester(28-40 weeks))
(->Enter F for first ,S for second ,T for third) s
Do you have low iron levels? (yes/no) yes

Prescribe iron supplements to prevent anemia.

Do you have gestational diabetes? (yes/no) yes

Recommend a balanced diet with controlled carbohydrate intake and regular exercise

Do you have constipation? (yes/no) yes

Advise increasing fiber intake and drinking plenty of water

Do you have trouble sleeping? (yes/no) no
That is so good

Do you have experience leg cramps? (yes/no) yes

Recommend gentle stretching exercises and increasing intake of calcium and magnesium-rich foods or supplements

Do you have an Rh-negative blood type? (yes/no) no
That is so good

Do you suffer from any of the following? Breathing difficulty or Swelling of the face, legs, and hands or Blurred eyes
and blurred vision or Fainting spells or Continuous diarrhea and vomiting or High body temperature or Spasms of the limbs and chest? (yes/no) no
That is so good

Do you want some suggestions for useful tips to follow? (yes/no) no

We wish you a healthy and comfortable pregnancy
Thanks for using our system :)

Figure 4: Output 3



Are you pregnant or are you planning to be pregnant? (yes/no) yes
In which trimester of pregnancy are you? (first trimester(0-12 weeks)/second trimester(13-27 weeks)/third trimester(28-40 weeks))
(->Enter F for first ,S for second ,T for third) t
Do you have to experience heartburn? (yes/no) yes
Advise avoiding spicy and greasy foods and recommend taking antacids after meals
Do you have swollen ankles? (yes/no) yes
Suggest elevating the legs and avoiding prolonged standing or sitting.
Do you experience back pain? (yes/no) yes
Recommend prenatal yoga, gentle stretching, and using a pregnancy support belt
Do you have swelling in the hands and face along with high blood pressure? (yes/no) yes
Consult a healthcare professional immediately as it may indicate preeclampsia
Do you have experiencing shortness of breath? (yes/no) no
That is so good
Do you have reduced fetal movement? (yes/no) yes
Advise her to seek immediate medical attention for further evaluation
Do you have regular contractions, lasting less than two minutes between one contraction and the next, extreme pressure and stress on you, and the descent of the fetal waters?yes
It may be childbirth, and you should go to the doctor immediately
Do you have gestational diabetes? (yes/no) no
That is so good
Do you have constipation? (yes/no) yes
Advise increasing fiber intake and drinking plenty of water
Do you have trouble sleeping? (yes/no) yes
Recommend establishing a bedtime routine, maintaining a comfortable sleep environment, and practicing relaxation techniques such as deep breathing or prenatal meditation
Do you have experience leg cramps? (yes/no) no
That is so good
Do you have an Rh-negative blood type? (yes/no) yes
Recommend receiving Rh immunoglobulin (RhIg) to prevent potential issues with Rh incompatibility
Do you suffer from any of the following? Breathing difficulty or Swelling of the face, legs, and hands or Blurred eyes and blurred vision or Fainting spells or Continuous diarrhea and vomiting or High body temperature or Spasms of the limbs and chest? (yes/no) yes
You should go to the doctor immediately
Do you want some suggestions for useful tips to follow? (yes/no) no
We wish you a healthy and comfortable pregnancy
Thanks for using our system :)

Figure 5: Output 4