Program code of our Software

iGEM 2020 Beijng_4ELEVEN

```python
# -*- coding:utf-8 -*-
import json
local = False
if not local:
    from ruleengine.exception import NotFoundFieldsError
    import logging


brief_headers_1 = [
            {
                "name": "Diagnosis",
                "width": 15,   # 宽度，绝对值，不提供则前端根据内容自适应。
                "type": "text",   # 需要支持 text 和 html 两种格式
                "key": "diag"   # 取值路径，从 plan 下一层开始
            }
        ]

brief_headers_2 = [
            {
                "name": "Diagnosis",
                "width": 15,   # 宽度，绝对值，不提供则前端根据内容自适应。
                "type": "text",   # 需要支持 text 和 html 两种格式
                "key": "diag"   # 取值路径，从 plan 下一层开始
            },
            {
                "name": "Medication",
                "width": 25,
                "type": "text",
                "key": "drug"
            }
        ]

brief_headers_3 = [
            {
                "name": "Diagnosis",
                "width": 15,   # 宽度，绝对值，不提供则前端根据内容自适应。
                "type": "text",   # 需要支持 text 和 html 两种格式
                "key": "diag"   # 取值路径，从 plan 下一层开始
            },
            {
```

```
                "name": "First-line medication",
                "width": 25,
                "type": "text",
                "key": "drug1"
        },
        {

                "name": "Second-line medication",
                "width": 25,
                "type": "text",
                "key": "drug2"
        },
        {

                "name": "Maintainance treatment",
                "width": 25,
                "type": "text",
                "key": "maintainance"
        }
    ]

brief_headers_4 = [
        {
                "name": "Diagnosis",
                "width": 15,   # 宽度，绝对值，不提供则前端根据内容自适应。
                "type": "text",   # 需要支持 text 和 html 两种格式
                "key": "diag"    # 取值路径，从 plan 下一层开始
        },
        {
                "name": "First-line medication",
                "width": 25,
                "type": "text",
                "key": "drug1"
        },
        {

                "name": "Second-line medication",
                "width": 25,
                "type": "text",
                "key": "drug2"
        },
        {

                "name": "Optional",
                "width": 25,
                "type": "text",
                "key": "optional"
        },
```

```
                {
                        "name": "Maintainance treatment",
                        "width": 25,
                        "type": "text",
                        "key": "maintainance"
                }
        ]

plan_mild_1 = [
                        {
                                "diag": "Diagnosis：Mild Acne(Grade 1 acne)",
                                "drug1": "First-line medication：Topical tretinoin",
                                "drug2": "Second-line medication：Benzoyl peroxide, Azelaic
acid, Alpha hydroxy acids, 中医药：方药为枇杷清肺饮或泻白散加减，中成药可选栀子金花
丸等",
                                "maintainance": "Maintainance treatment: Topical tretinoin
+/- Benzoyl peroxide"
                        }
                ]


plan_newborn = [
                {"diag": "Diagnosis: Neonatal acne, caused by maternal hormones, will
improve as the hormones regress"
                }
        ]

plan_infant = [
                {"diag": "Diagnosis: Infantile acne, inspection of endocrinosis needed",
                }
        ]

plan_child = [
                {"diag": "Diagnosis: Mid-childhood acne, inspection of endocrinosis
needed"
                }
        ]
plan_preadolescent = [
                {"diag": "Diagnosis: Preadolescent acne",
                 "drug": "Medication: 2.5% Benzoyl peroxide/ 1% Adapalene gel
combination for patients aged ≥9, 0.05% Tretinoin gel for patients aged ≥10"
                }
        ]
```

```
plan_moderate_1 = [
                                {
                                        "diag": "Diagnosis：Moderate Acne（Grade 2 acne）",
                                        "drug1": "First-line medication：Topical tretinoin + Benzoyl
peroxide +/- Topical antibiotics or Benzoyl peroxide + Topical antibiotics",
                                        "drug2": "Second-line medication: Oral antibiotics + Topical
tretinoin +/- Benzoyl peroxide +/- Topical antibiotics, Azelaic acid, LED light therapy, Salicylic
acid or Composite acids treatment, 中医药：方药为茵陈蒿汤，芩连平胃散，枇杷清肺饮，
或泻白散加减，中成药可选栀子金花丸等茵陈蒿汤或芩连平胃散加减。便秘者可选用中成药
连翘败毒丸、防风通圣丸、润燥止痒胶囊等；便溏者可选用中成药香连丸、参苓白术散等",
                                        "maintainance": "Maintainance treatment: Topical tretinoin
+/- Benzoyl peroxide"
                                }
                        ]


plan_moderate_severe_1 = [
                                {
                                        "diag": "Diagnosis：Moderate Acne（Grade 3 acne）",
                                        "drug1": "First-line medication：Oral antibiotics + Topical
tretinoin +/- Benzoyl peroxide +/- Topical antibiotics",
                                        "drug2": "Second-line medication：Oral isotretinoin, LED
light therapy, Photodynamic therapy, Laser therapy, Salicylic acid or Composite acids
treatment,中医药：方药为茵陈蒿汤或芩连平胃散加减。便秘者可选用中成药连翘败毒丸、
防风通圣丸、润燥止痒胶囊等；便溏者可选用中成药香连丸、参苓白术散等",
                                        "maintainance": "Maintainance treatment: Topical tretinoin
+/- Benzoyl peroxide"
                                }
                        ]

plan_severe_1 = [
                                {
                                        "diag": "Diagnosis: Severe Acne（Grade 4 acne）",
                                        "drug1": "First-line medication：Oral isotretinoin +/- Benzoyl
peroxide /Topical antibiotics. Those whom experience severe inflammation should take oral
isotretinoin after taking oral antibtics + Benzoyl peroxide /Topical antibiotics",
                                        "drug2": "Second-line medication: Oral antibiotics + Topical
tretinoin +/- Benzoyl peroxide, Photodynamic therapy, systemic glucocorticoid（patients of
early acne conglobata are advised to take oral isotretinoin at the same time），中医药：方药
为海藻玉壶汤或桃红四物汤合二陈汤加减，中成药可选丹参酮胶囊、大黄蛰虫丸、化瘀散结
丸、当归苦参丸等",
                                        "maintainance": "Maintainance treatment: Topical tretinoin
+/- Benzoyl peroxide"
                                }
                        ]
```

```
plan_mild_2 = [
                    {
                            "diag": "Diagnosis：Mild Acne (Grade 1 acne)",
                            "drug1": "First-line medication：Topical tretinoin",
                            "drug2": "Second-line medication：Benzoyl peroxide,
Azelaic acid, Alpha hydroxy acids, 中医药：方药为枇杷清肺饮或泻白散加减，中成药可选栀
子金花丸等",
                            "maintainance": "Maintainance treatment: Topical
tretinoin +/- Benzoyl peroxide"
                    }
              ]

plan_moderate_2 = [
                    {
                            "diag": "Diagnosis：Moderate Acne（Grade 2 acne）",
                            "drug1": "First-line medication：Topical tretinoin +
Benzoyl peroxide +/- Topical antibiotics or Benzoyl peroxide + Topical antibiotics",
                            "drug2": "Second-line medication：Oral antibiotics +
Topical tretinoin +/- Benzoyl peroxide +/-Topical antibiotics, Azelaic acid, LED light therapy,
Salicylic acid or Composite acids treatment, 中医药：方药为茵陈蒿汤，芩连平胃散，枇杷清
肺饮，或泻白散加减，中成药可选栀子金花丸等茵陈蒿汤或芩连平胃散加减。便秘者可选用
中成药连翘败毒丸、防风通圣丸、润燥止痒胶囊等；便溏者可选用中成药香连丸、参苓白术
散等",
                            "maintainance": "Maintainance treatment: Topical
tretinoin +/- Benzoyl peroxide"
                    }
              ]

plan_moderate_severe_2 = [
                    {
                            "diag": "Diagnosis：Moderate Acne（Grade 3 acne）",
                            "drug1": "First-line medication：Oral antibiotics +
Topical tretinoin +/-Benzoyl peroxide +/-Topical antibiotics",
                            "drug2": "Second-line medication：Oral isotretinoin,
LED light therapy, Photodynamic therapy, Laser therapy, Salicylic acid or Composite acids
treatment,中医药：方药为茵陈蒿汤或芩连平胃散加减。便秘者可选用中成药连翘败毒丸、
防风通圣丸、润燥止痒胶囊等；便溏者可选用中成药香连丸、参苓白术散等",
                            "maintainance": "Maintainance treatment: Topical
tretinoin +/- Benzoyl peroxide"
                    }
              ]

plan_severe_2 = [
```

```
                    {
                            "diag": "Diagnosis: Severe Acne（Grade 4 acne）",
                            "drug1": "First-line medication：Oral isotretinoin +/-
Benzoyl peroxide/ Topical antibiotics. Those whom experience severe inflammation should
take oral isotretinoin after taking oral antibtics + Benzoyl peroxide /Topical antibiotics. Strict
contraception required one month before and three months after taking oral tretinoin",
                            "drug2": "Second-line medication：Oral antibiotics +
Topical tretinoin +/- Benzoyl peroxide, Photodynamic therapy, Systemic glucocorticoid
（patients of early acne conglobata are advised to take oral isotretinoin at the same time）,
中医药：方药为海藻玉壶汤或桃红四物汤合二陈汤加减，中成药可选丹参酮胶囊、大黄蛰虫
丸、化瘀散结丸、当归苦参丸等",
                            "maintainance": "Maintainance treatment: Topical
tretinoin +/- Benzoyl peroxide"
                    }
            ]

plan_mild_3 = [
                    {
                            "diag": "Diagnosis：Mild Acne (Grade 1 acne)(topical
treatment most suggested)",
                            "drug1": "First-line medication：Topical azelaic acid,
Clindamycin（Pregnancy Category B）",
                            "drug2": "Second-line medication：Benzoyl peroxide
(use with caution in small areas)（Pregnancy Category C），Alpha hydroxy acids, 中医药：方
药为枇杷清肺饮或泻白散加减，中成药可选栀子金花丸等",
                            "maintainance": "Maintainance treatment: Benzoyl
peroxide"
                    }
            ]

plan_moderate_3 = [
                    {
                            "diag": "Diagnosis：Moderate Acne（Grade 2 acne）
(topical treatment most suggested)",
                            "drug1": "First-line medication：Topical tretinoin +
Benzoyl peroxide +/- Topical antibiotics（tetracyclines excluded） or Benzoyl peroxide
+Topical antibiotics（tetracyclines excluded）",
                            "drug2": "Second-line medication：Oral macrolides
（Avoid taking three months before gestation）+ Topical tretinoin +/- Benzoyl peroxide +/-
Topical antibiotics（tetracyclines excluded），Azelaic acid, LED light therapy, Salicylic acid or
Composite acids treatment, 中医药：方药为茵陈蒿汤，芩连平胃散，枇杷清肺饮，或泻白散
加减，中成药可选栀子金花丸等茵陈蒿汤或芩连平胃散加减。便秘者可选用中成药连翘败毒
丸、防风通圣丸、润燥止痒胶囊等；便溏者可选用中成药香连丸、参苓白术散等",
                            "maintainance": "Maintainance treatment: Topical
```

tretinoin +/- Benzoyl peroxide"

                }
            ]

plan_moderate_severe_3 = [

            {

                "diag": "Diagnosis：Moderate Acne（Grade 3 acne）(topical treatment most suggested)",

                "drug1":"First-line medication：Oral macrolides（Avoid taking three months before gestation） + Topical tretinoin +/- Benzoyl peroxide +/- Topical antibiotics（tetracyclines excluded）",

                "drug2": "Second-line medication： Oral isotretinoin, LED light therapy, Photodynamic therapy, Laser therapy, Salicylic acid or Composite acids treatment, 中医药：方药为茵陈蒿汤或芩连平胃散加减。便秘者可选用中成药连翘败毒丸、防风通圣丸、润燥止痒胶囊等；便溏者可选用中成药香连丸、参苓白术散等",

                "maintainance": "Maintainance treatment: Topical tretinoin +/- Benzoyl peroxide"

                }
            ]

plan_severe_3 = [

            {

                "diag": "Diagnosis: Severe Acne（Grade 4 acne）(topical treatment most suggested)",

                "drug1": "First-line medication： Oral isotretinoin +/- Benzoyl peroxide/ Topical antibiotics (tetracyclines excluded). Those whom experience severe inflammation should take oral isotretinoin after taking Oral macrolides（Avoid taking three months before gestation） + Benzoyl peroxide /Topical antibiotics（tetracyclines excluded）",

                "drug2": "Second-line medication： Oral macrolides（Avoid taking three months before gestation） + Topical tretinoin +/- Benzoyl peroxide, Photodynamic therapy, Systemic glucocorticoid（patients of early acne conglobata are advised to take oral isotretinoin at the same time）, those with extremely severe conditions could consider short-term Prednisone treatment, 中医药：方药为海藻玉壶汤或桃红四物汤合二陈汤加减，中成药可选丹参酮胶囊、大黄蛰虫丸、化瘀散结丸、当归苦参丸等",

                "maintainance": "Maintainance treatment: Topical tretinoin +/- Benzoyl peroxide"

                }
            ]

plan_mild_4 = [

            {

                "diag": "Diagnosis：Mild Acne (Grade 1 acne)(topical treatment most suggested)",

```
                                                "drug1": "First-line medication：Topical tretinoin",
                                                "drug2": "Second-line medication：Benzoyl peroxide,
Azelaic acid, Alpha hydroxy acids, 中医药：方药为枇杷清肺饮或泻白散加减，中成药可选栀
子金花丸等",
                                                "maintainance": "Maintainance treatment: Topical
tretinoin +/- Benzoyl peroxide"
                                        }
                                ]

plan_moderate_4 = [
                                {
                                        "diag": "Diagnosis：Moderate Acne（Grade 2 acne）
(topical treatment most suggested)",
                                        "drug1": "First-line medication：Topical tretinoin +
Benzoyl peroxide +/- Topical antibiotics（tetracyclines not advised to use for more than three
weeks） or Benzoyl peroxide + Topical antibiotics（tetracyclines not advised to use for more
than three weeks）",
                                        "drug2": "Second-line medication：Oral antibiotics
（macrolides are for short term use; Clindamycin may negatively affect baby's digestive
system; tetracyclines not advised to use for more than three weeks）+ Topical tretinoin +/-
Benzoyl peroxide +/- Topical antibiotics（tetracyclines not advised to use for more than three
weeks）、Azelaic acid, LED light therapy, Salicylic acid or Composite acids treatment,中医药：
方药为茵陈蒿汤，芩连平胃散，枇杷清肺饮，或泻白散加减，中成药可选栀子金花丸等茵陈
蒿汤或芩连平胃散加减。便秘者可选用中成药连翘败毒丸、防风通圣丸、润燥止痒胶囊等；
便溏者可选用中成药香连丸、参苓白术散等",
                                        "maintainance": "Maintainance treatment: Topical
tretinoin +/- Benzoyl peroxide"
                                        }
                                ]

plan_moderate_severe_4 = [
                                {
                                        "diag": "Diagnosis：Moderate Acne（Grade 3 acne）
(topical treatment most suggested)",
                                        "drug1": "First-line medication：Oral antibiotics
（macrolides are for short term use; Clindamycin may negatively affect baby's digestive
system; tetracyclines not advised to use for more than three weeks）+ Topical tretinoin +/-
Benzoyl peroxide +/- Topical antibiotics（tetracyclines not advised to use for more than three
weeks）",
                                        "drug2": "Second-line medication：Oral isotretinoin,
LED light therapy, Photodynamic therapy, Laser therapy, Salicylic acid or Composite acids
treatment, 中医药：方药为茵陈蒿汤或芩连平胃散加减。便秘者可选用中成药连翘败毒丸、
防风通圣丸、润燥止痒胶囊等；便溏者可选用中成药香连丸、参苓白术散等",
                                        "maintainance": "Maintainance treatment: Topical
```

tretinoin +/- Benzoyl peroxide"

      }

    ]

plan_severe_4 = [

    {

"diag": "Diagnosis: Severe Acne（Grade 4 acne) (topical treatment most suggested)",

"drug1": "First-line medication: 口服异维 A 酸+/-过氧化苯甲酰/Topical antibiotics（tetracyclines not advised to use for more than three weeks）, Those whom experience severe inflammation should take oral isotretinoin after taking oral antibtics（macrolides are for short term use; Clindamycin may negatively affect baby's digestive system; tetracyclines not advised to use for more than three weeks） + Benzoyl peroxide/ Topical antibiotics（tetracyclines not advised to use for more than three weeks）",

"drug2": "Second-line medication： Oral antibiotics（macrolides are for short term use; Clindamycin may negatively affect baby's digestive system; tetracyclines not advised to use for more than three weeks） + Topical tretinoin +/- Benzoyl peroxide, Photodynamic therapy, Systemic glucocorticoid（patients of early acne conglobata are advised to take oral isotretinoin at the same time）, 中医药：方药为海藻玉壶汤或桃红四物汤合二 陈汤加减，中成药可选丹参酮胶囊、大黄蟅虫丸、化瘀散结丸、当归苦参丸等",

"maintainance": "Maintainance treatment: Topical tretinoin +/- Benzoyl peroxide"

      }

    ]

plan_mild_5 = [

    {

"diag": "Diagnosis: Mild Acne(Grade 1 acne)",

"drug1": "First-line medication: Topical tretinoin",

"drug2": "Second-line medication： Benzoyl peroxide, Azelaic acid, Alpha hydroxy acids, 中医药：方药为枇杷清肺饮或泻白散加减，中成药可选栀子金花丸等",

"maintainance": "Maintainance treatment: Topical tretinoin +/- Benzoyl peroxide"

      }

    ]

plan_moderate_5 = [

    {

"diag": "Diagnosis: Moderate Acne（Grade 2 acne）",

"drug1": "First-line medication: Topical tretinoin + Benzoyl peroxide +/- Topical antibiotics or Benzoyl peroxide + Topical antibiotics",

```
                                    "drug2": "Second-line medication：Oral antibiotics
+ Topical tretinoin +/- Benzoyl peroxide +/-Topical antibiotics, Azelaic acid, LED light therapy,
Salicylic acid or Composite acids treatment, 中医药：方药为茵陈蒿汤，芩连平胃散，枇杷清
肺饮，或泻白散加减，中成药可选栀子金花丸等茵陈蒿汤或芩连平胃散加减。便秘者可选用
中成药连翘败毒丸、防风通圣丸、润燥止痒胶囊等；便溏者可选用中成药香连丸、参苓白术
散等",
                                    "maintainance": "Maintainance treatment: Topical
tretinoin +/- Benzoyl peroxide"
                              }
                        ]

plan_moderate_severe_5 = [
                        {
                                    "diag": "Diagnosis：Moderate Acne（Grade 3 acne）
",
                                    "drug1": "First-line medication：Oral antibiotics +
Topical tretinoin +/-Benzoyl peroxide +/-Topical antibiotics",
                                    "drug2":  "Second-line  medication ：  Oral
isotretinoin,  LED  light  therapy,  Photodynamic  therapy,  Laser  therapy,  Salicylic  acid  or
Composite acids treatment,中医药：方药为茵陈蒿汤或芩连平胃散加减。便秘者可选用中成
药连翘败毒丸、防风通圣丸、润燥止痒胶囊等；便溏者可选用中成药香连丸、参苓白术散等
",
                                    "maintainance": "Maintainance treatment: Topical
tretinoin +/- Benzoyl peroxide"
                              }
                        ]

plan_severe_5 = [
                        {
                                    "diag": "Diagnosis: Severe Acne（Grade 4 acne）",
                                    "drug1": "First-line medication：Oral isotretinoin
+/- Benzoyl peroxide /Topical antibiotics. Those whom experience severe inflammation
should take oral isotretinoin after taking oral antibtics + Benzoyl peroxide /Topical antibiotics",
                                    "drug2": "Second-line medication：Oral antibiotics
+ Topical tretinoin +/- Benzoyl peroxide, Photodynamic therapy, systemic glucocorticoid
（patients of early acne conglobata are advised to take oral isotretinoin at the same time）,
中医药：方药为海藻玉壶汤或桃红四物汤合二陈汤加减，中成药可选丹参酮胶囊、大黄蛰虫
丸、化瘀散结丸、当归苦参丸等",
                                    "maintainance": "Maintainance treatment: Topical
tretinoin +/- Benzoyl peroxide"
                              }
                        ]

plan_mild_6 = [
```

```
                            {
                                    "diag": "Diagnosis：Mild Acne(Grade 1 acne)",
                                    "drug1": "First-line medication：Topical tretinoin",
                                    "drug2": "Second-line medication ：Benzoyl
peroxide, Azelaic acid, Alpha hydroxy acids, 中医药：方药为枇杷清肺饮或泻白散加减，中成
药可选栀子金花丸等",
                                    "maintainance": "Maintainance treatment: Topical
tretinoin +/- Benzoyl peroxide"
                            }
                    ]

plan_moderate_6 = [
                            {
                                    "diag": "Diagnosis：Moderate Acne（Grade 2 acne）
",
                                    "drug1": "First-line medication：Topical tretinoin +
Benzoyl peroxide +/- Topical antibiotics or Benzoyl peroxide + Topical antibiotics",
                                    "drug2": "Second-line medication：Oral antibiotics
+ Topical tretinoin +/- Benzoyl peroxide +/-Topical antibiotics, Azelaic acid, LED light therapy,
Salicylic acid or Composite acids treatment, 中医药：方药为茵陈蒿汤，芩连平胃散，枇杷清
肺饮，或泻白散加减，中成药可选栀子金花丸等茵陈蒿汤或芩连平胃散加减。便秘者可选用
中成药连翘败毒丸、防风通圣丸、润燥止痒胶囊等；便溏者可选用中成药香连丸、参苓白术
散等",
                                    "optional": "Optional: Oral antiandrogen",
                                    "maintainance": "Maintainance treatment: Topical
tretinoin +/- Benzoyl peroxide"
                            }
                    ]

plan_moderate_severe_6 = [
                            {
                                    "diag": "Diagnosis：Moderate Acne（Grade 3 acne）
",
                                    "drug1": "First-line medication：Oral antibiotics +
Topical tretinoin +/-Benzoyl peroxide +/-Topical antibiotics",
                                    "drug2": "Second-line medication ：Oral
isotretinoin, LED light therapy, Photodynamic therapy, Laser therapy, Salicylic acid or
Composite acids treatment,中医药：方药为茵陈蒿汤或芩连平胃散加减。便秘者可选用中成
药连翘败毒丸、防风通圣丸、润燥止痒胶囊等；便溏者可选用中成药香连丸、参苓白术散等
",
                                    "optional": "Optional: Oral antiandrogen",
                                    "maintainance": "Maintainance treatment: Topical
tretinoin +/- Benzoyl peroxide"
                            }
```

```python
                               ]

plan_severe_6 = [
                               {
                                       "diag": "Diagnosis: Severe Acne（Grade 4 acne）",
                                       "drug1": "First-line medication：Oral isotretinoin
+/- Benzoyl peroxide /Topical antibiotics. Those whom experience severe inflammation
should take oral isotretinoin after taking oral antibtics + Benzoyl peroxide /Topical antibiotics",
                                       "drug2": "Second-line medication：Oral antibiotics
+ Topical tretinoin +/- Benzoyl peroxide, Photodynamic therapy, systemic glucocorticoid
（patients of early acne conglobata are advised to take oral isotretinoin at the same time），
中医药：方药为海藻玉壶汤或桃红四物汤合二陈汤加减，中成药可选丹参酮胶囊、大黄蛰虫
丸、化瘀散结丸、当归苦参丸等",
                                       "optional": "Optional: Oral antiandrogen",
                                       "maintainance": "Maintainance treatment: Topical
tretinoin +/- Benzoyl peroxide"
                               }
                       ]

class UserRule(object):
    logger = logging.getLogger('repos.userrule')
    def get_out(self, ctx):
        """
        # Weeks after birth = age == '1'
        # Three to six months after = age == '2'
        # One to seven years old = age == '3'
        # Eight to twelve years old = age == '4'
        # Above twelve old= age == '5'

        # Female = gender == '1'
        # Male = gender == '2'

        # In preparation of pregnancy = pregnancy == '1'
        # In pregnancy = pregnancy == '2'
        # Lactation = pregnancy == '3'
        # None of the above = pregnancy == '0'

        # Premenstrual aggravating acne = hormone == '1'
        # Conventional treatments such as antibiotics and even systemic tretinoin resulting
in poor effects or acne quickly relapses after drug withdrawal = hormone == '2'
        # Acne accompanied with symptoms of high androgen = hormone == '3'
        # Female postadolescent acne = hormone == '4'
        # None above = hormone == '0'
```

```python
# Black heads and white heads only = symptomlevel == '1'
# Inflammatory papules = symptomlevel == '2'
# Papules and pustules = symptomlevel == '3'
# Nodules and cysts = symptomlevel == '4'
params:
    ctx: context
    ctx._in : information input
    ctx._out : information output
"""

_in = ctx.get('_in')
self.logger.info(json.dumps(_in))
print(json.dumps(_in))
symptomlevel = _in.get('info', {}).get('symptom', {}).get('symptomlevel')
gender = _in.get('info', {}).get('basic_info', {}).get('gender')
age = _in.get('info', {}).get('basic_info', {}).get('age')
pregnancy = _in.get('info', {}).get('basic_info', {}).get('pregnancy')
hormone = _in.get('info', {}).get('symptom', {}).get('hormone')

if not age:
    raise NotFoundFieldsError('info.basic_info.age')
elif age == '5':
    if not gender:
        raise NotFoundFieldsError('info.basic_info.gender')
    elif gender == '1':
        if not pregnancy:
            raise NotFoundFieldsError('info.basic_info.pregnancy')
        elif pregnancy == '0':
            if not hormone:
                raise NotFoundFieldsError('info.symptom.hormone')
            else:
                if not symptomlevel:
                    raise NotFoundFieldsError('info.symptom.symptomlevel')
        else:
            if not symptomlevel:
                raise NotFoundFieldsError('info.symptom.symptomlevel')
    else:
        if not symptomlevel:
            raise NotFoundFieldsError('info.symptom.symptomlevel')
```

```python
if age == '1':
    plan = plan_newborn

    ctx['_out'] = {
        "display_fmt": "table",  # 默认的格式，可选值包括"tile|table"
        "brief_headers": brief_headers_1,
        "plan": plan
    }
    return ctx['_out']

if age == '2':
    plan = plan_infant

    ctx['_out'] = {
        "display_fmt": "table",  # 默认的格式，可选值包括"tile|table"
        "brief_headers": brief_headers_1,
        "plan": plan
    }
    return ctx['_out']

if age == '3':
    plan = plan_child

    ctx['_out'] = {
        "display_fmt": "table",  # 默认的格式，可选值包括"tile|table"
        "brief_headers": brief_headers_1,
        "plan": plan
    }
    return ctx['_out']

if age == '4':
    plan = plan_preadolescent

    ctx['_out'] = {
        "display_fmt": "table",  # 默认的格式，可选值包括"tile|table"
        "brief_headers": brief_headers_2,
        "plan": plan
    }
    return ctx['_out']

if age == '5':
    if gender == '2':
```

```python
        if symptomlevel == '1':
            plan = plan_mild_1

            ctx['_out'] = {
                "display_fmt": "table",  # 默认的格式，可选值包括"tile|table"
                "brief_headers": brief_headers_3,
                "plan": plan
            }
            return ctx['_out']

        elif symptomlevel == '2':
            plan = plan_moderate_1

            ctx['_out'] = {
                "display_fmt": "table",  # 默认的格式，可选值包括"tile|table"
                "brief_headers": brief_headers_3,
                "plan": plan
            }
            return ctx['_out']

        elif symptomlevel == '3':
            plan = plan_moderate_severe_1

            ctx['_out'] = {
                "display_fmt": "table",  # 默认的格式，可选值包括"tile|table"
                "brief_headers": brief_headers_3,
                "plan": plan
            }
            return ctx['_out']

        elif symptomlevel == '4':
            plan = plan_severe_1

            ctx['_out'] = {
                "display_fmt": "table",  # 默认的格式，可选值包括"tile|table"
                "brief_headers": brief_headers_3,
                "plan": plan
            }
            return ctx['_out']

if gender == '1':
    if pregnancy == '1':
        if symptomlevel == '1':
            plan = plan_mild_2
```

```python
                ctx['_out'] = {
                    "display_fmt": "table",   # 默认的格式，可选值包括
"tile|table"

                    "brief_headers": brief_headers_3,
                    "plan": plan
                }
                return ctx['_out']

            elif symptomlevel == '2':
                plan = plan_moderate_2

                ctx['_out'] = {
                    "display_fmt": "table",   # 默认的格式，可选值包括
"tile|table"

                    "brief_headers": brief_headers_3,
                    "plan": plan
                }
                return ctx['_out']

            elif symptomlevel == '3':
                plan = plan_moderate_severe_2

                ctx['_out'] = {
                    "display_fmt": "table",   # 默认的格式，可选值包括
"tile|table"

                    "brief_headers": brief_headers_3,
                    "plan": plan
                }
                return ctx['_out']

            elif symptomlevel == '4':
                plan = plan_severe_2

                ctx['_out'] = {
                    "display_fmt": "table",   # 默认的格式，可选值包括
"tile|table"

                    "brief_headers": brief_headers_3,
                    "plan": plan
                }
                return ctx['_out']

        if pregnancy == '2':
            if symptomlevel == '1':
```

```python
                    plan = plan_mild_3

                    ctx['_out'] = {
                        "display_fmt": "table",   # 默认的格式，可选值包括
"tile|table"
                        "brief_headers": brief_headers_3,
                        "plan": plan
                    }
                    return ctx['_out']

                elif symptomlevel == '2':
                    plan = plan_moderate_3

                    ctx['_out'] = {
                        "display_fmt": "table",   # 默认的格式，可选值包括
"tile|table"
                        "brief_headers": brief_headers_3,
                        "plan": plan
                    }
                    return ctx['_out']

                elif symptomlevel == '3':
                    plan = plan_moderate_severe_3

                    ctx['_out'] = {
                        "display_fmt": "table",   # 默认的格式，可选值包括
"tile|table"
                        "brief_headers": brief_headers_3,
                        "plan": plan
                    }
                    return ctx['_out']

                elif symptomlevel == '4':
                    plan = plan_severe_3

                    ctx['_out'] = {
                        "display_fmt": "table",   # 默认的格式，可选值包括
"tile|table"
                        "brief_headers": brief_headers_3,
                        "plan": plan
                    }
                    return ctx['_out']

            if pregnancy == '3':
```

```python
if symptomlevel == '1':
    plan = plan_mild_4

    ctx['_out'] = {
        "display_fmt": "table",   # 默认的格式，可选值包括 "tile|table"

        "brief_headers": brief_headers_3,
        "plan": plan
    }
    return ctx['_out']

elif symptomlevel == '2':
    plan = plan_moderate_4

    ctx['_out'] = {
        "display_fmt": "table",   # 默认的格式，可选值包括 "tile|table"

        "brief_headers": brief_headers_3,
        "plan": plan
    }
    return ctx['_out']

elif symptomlevel == '3':
    plan = plan_moderate_severe_4

    ctx['_out'] = {
        "display_fmt": "table",   # 默认的格式，可选值包括 "tile|table"

        "brief_headers": brief_headers_3,
        "plan": plan
    }
    return ctx['_out']

elif symptomlevel == '4':
    plan = plan_severe_4

    ctx['_out'] = {
        "display_fmt": "table",   # 默认的格式，可选值包括 "tile|table"

        "brief_headers": brief_headers_3,
        "plan": plan
    }
    return ctx['_out']
```

```python
if pregnancy == '0':
    if hormone == '0':
        if symptomlevel == '1':
            plan = plan_mild_5

            ctx['_out'] = {
                "display_fmt": "table",  # 默认的格式，可选值包括
"tile|table"

                "brief_headers": brief_headers_3,
                "plan": plan
            }
            return ctx['_out']

        elif symptomlevel == '2':
            plan = plan_moderate_5

            ctx['_out'] = {
                "display_fmt": "table",  # 默认的格式，可选值包括
"tile|table"

                "brief_headers": brief_headers_3,
                "plan": plan
            }
            return ctx['_out']

        elif symptomlevel == '3':
            plan = plan_moderate_severe_5

            ctx['_out'] = {
                "display_fmt": "table",  # 默认的格式，可选值包括
"tile|table"

                "brief_headers": brief_headers_3,
                "plan": plan
            }
            return ctx['_out']

        elif symptomlevel == '4':
            plan = plan_severe_5

            ctx['_out'] = {
                "display_fmt": "table",  # 默认的格式，可选值包括
"tile|table"

                "brief_headers": brief_headers_3,
                "plan": plan
            }
```

```python
                        return ctx['_out']

            else:
                if symptomlevel == '1':
                    plan = plan_mild_6

                    ctx['_out'] = {
                        "display_fmt": "table",   # 默认的格式，可选值包括
"tile|table"
                        "brief_headers": brief_headers_3,
                        "plan": plan
                    }
                    return ctx['_out']

                elif symptomlevel == '2':
                    plan = plan_moderate_6

                    ctx['_out'] = {
                        "display_fmt": "table",   # 默认的格式，可选值包括
"tile|table"
                        "brief_headers": brief_headers_4,
                        "plan": plan
                    }
                    return ctx['_out']

                elif symptomlevel == '3':
                    plan = plan_moderate_severe_6

                    ctx['_out'] = {
                        "display_fmt": "table",   # 默认的格式，可选值包括
"tile|table"
                        "brief_headers": brief_headers_4,
                        "plan": plan
                    }
                    return ctx['_out']

                elif symptomlevel == '4':
                    plan = plan_severe_6

                    ctx['_out'] = {
                        "display_fmt": "table",   # 默认的格式，可选值包括
"tile|table"
                        "brief_headers": brief_headers_4,
                        "plan": plan
```

```python
                }
        return ctx['_out']


if __name__ == "__main__":
    rule = UserRule()
    ctx = {
            "_in":{
                "info": {
                    "symptom":{
                        "symptomlevel":'1',
                        "hormone":'0',
                    },
                    "basic_info":{
                        "gender_a":'1',
                        "pregnancy":'0',
                        "age_a":'5',
                }
            }}}
    print('Input:'+ json.dumps(ctx.get('_in'),ensure_ascii=False))
    ctx = rule.get_out(ctx)
    print('------------')
    print(ctx)
#    print('Output:'+ json.dumps(ctx.get('_out'),ensure_ascii=False
```