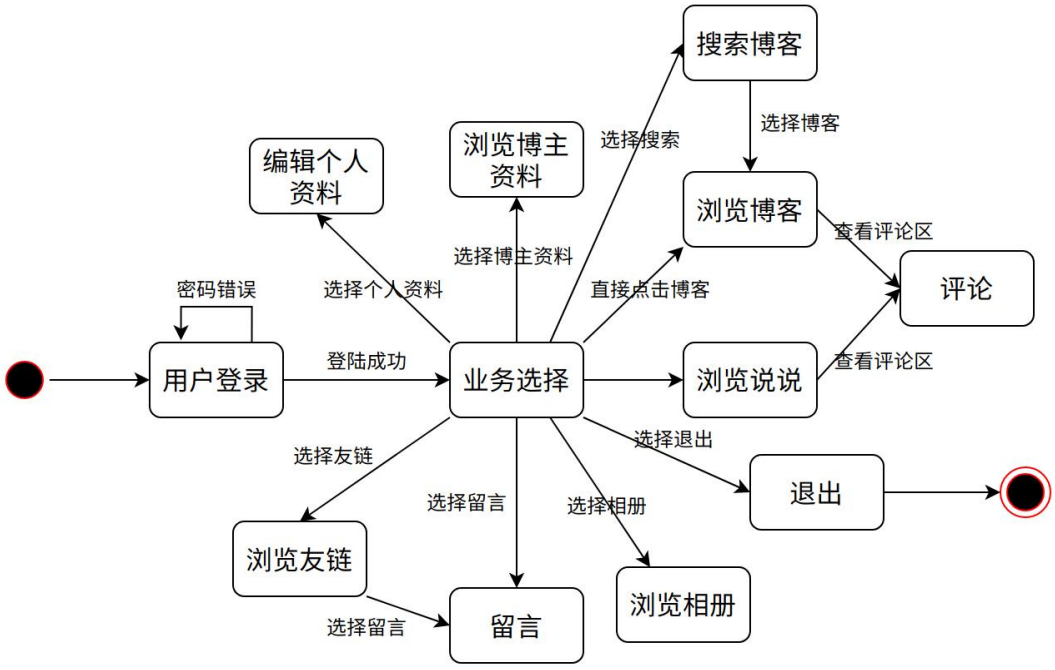
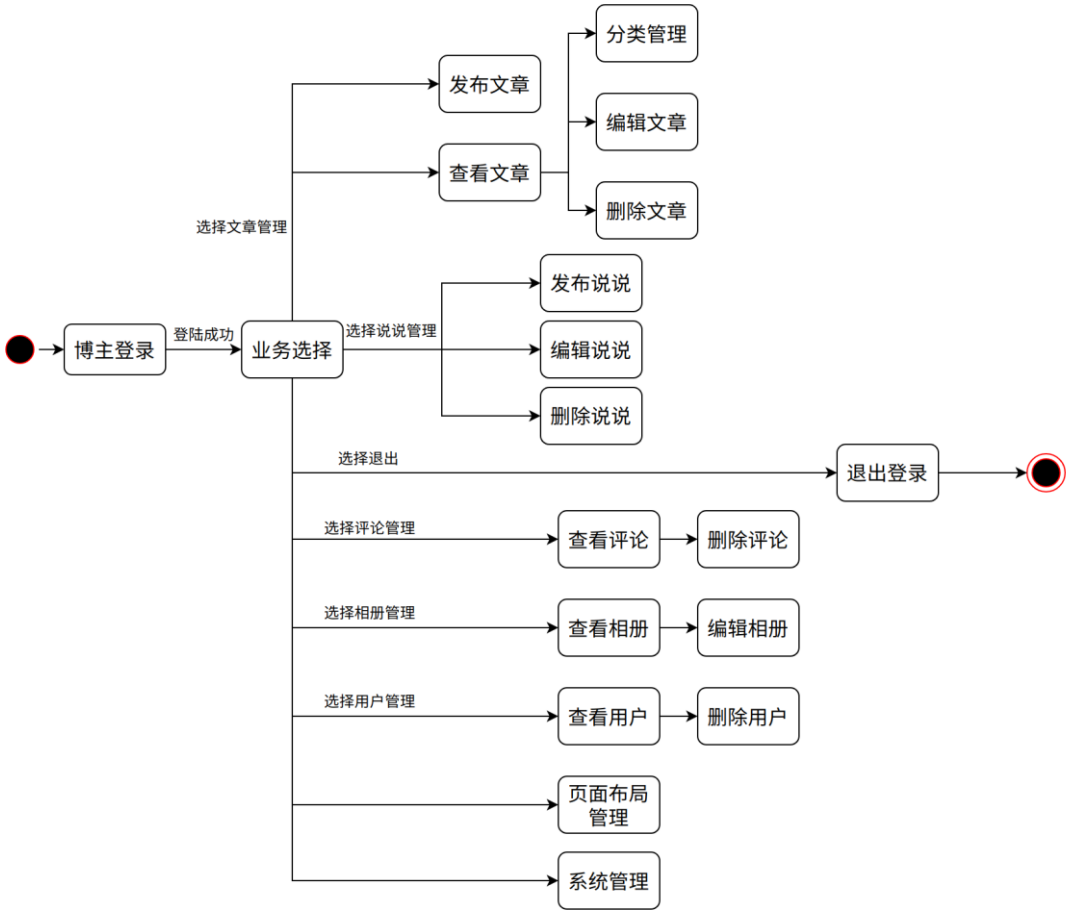
动态建模工具

1.状态图

前台用户状态图:

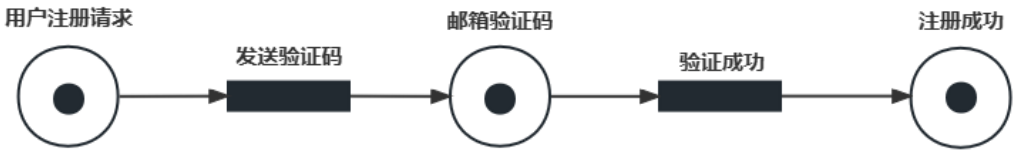


后台博主状态图:

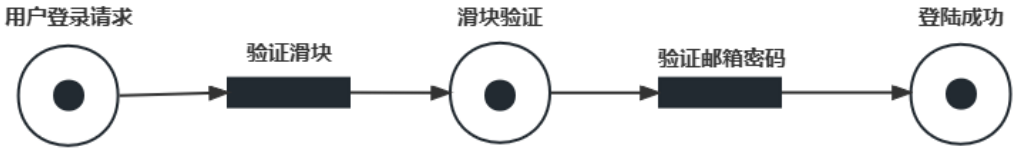


2.Petri 网

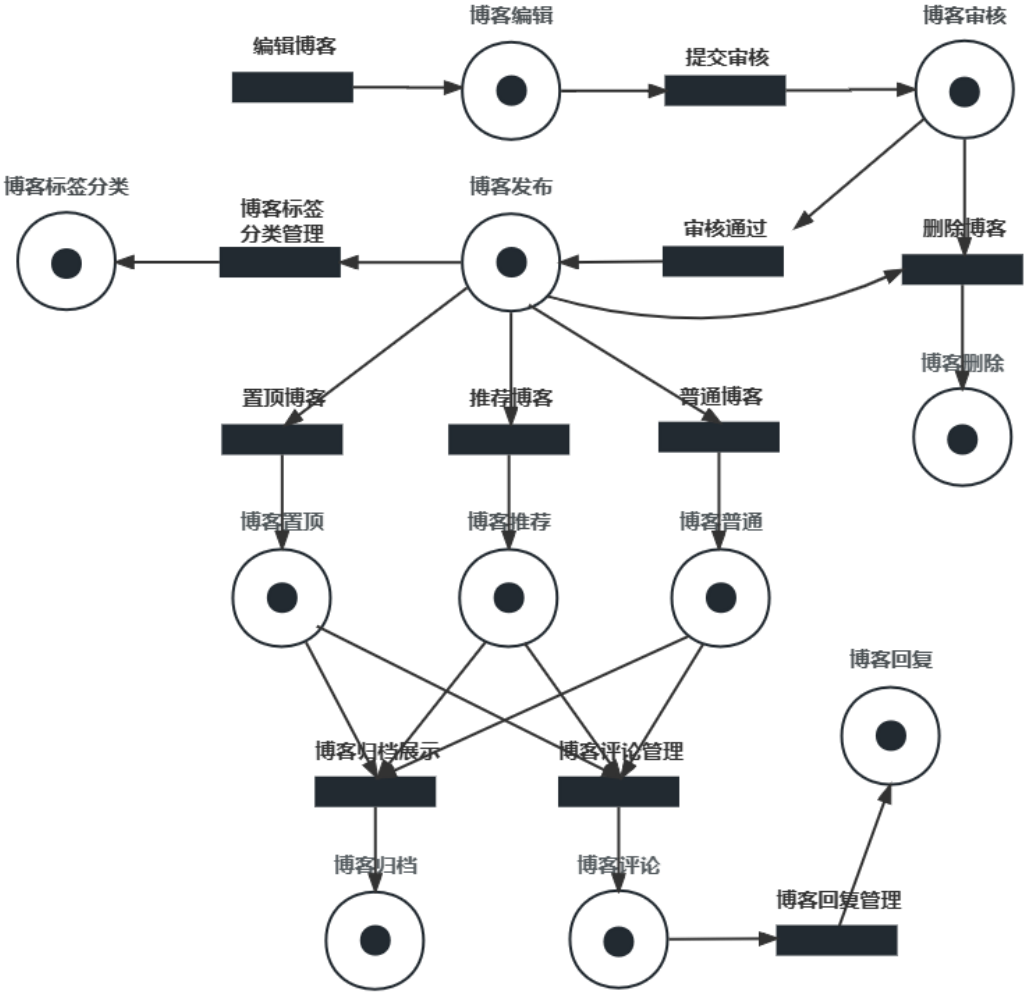
用户注册 Petri 网



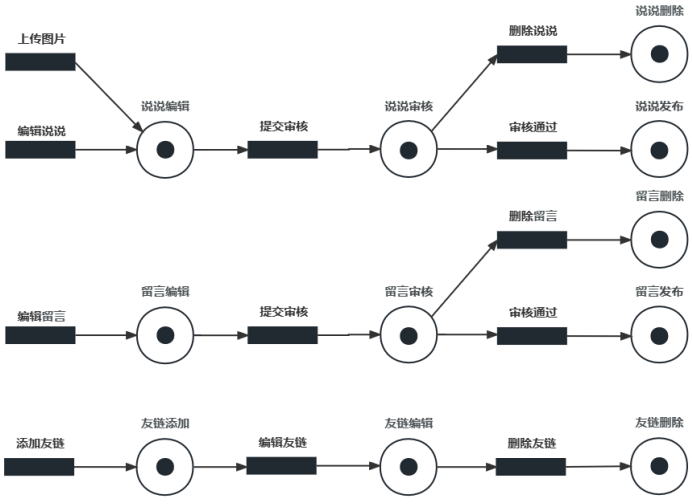
用户登录 Petri 网



博客 Petri 网


博客编辑
博客审核
编辑博客
提交审核
博客标签分类
博客发布
博客标签
分类管理
审核通过
删除博客
博客删除
置顶博客
推荐博客
普通博客
博客置顶
博客推荐
博客普通
博客回复
博客归档展示
博客评论管理
博客归档
博客评论
博客回复管理

其他模块 Petri 网


上传图片
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说说审核
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提交审核
审核通过
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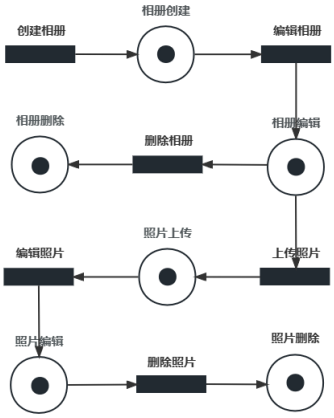
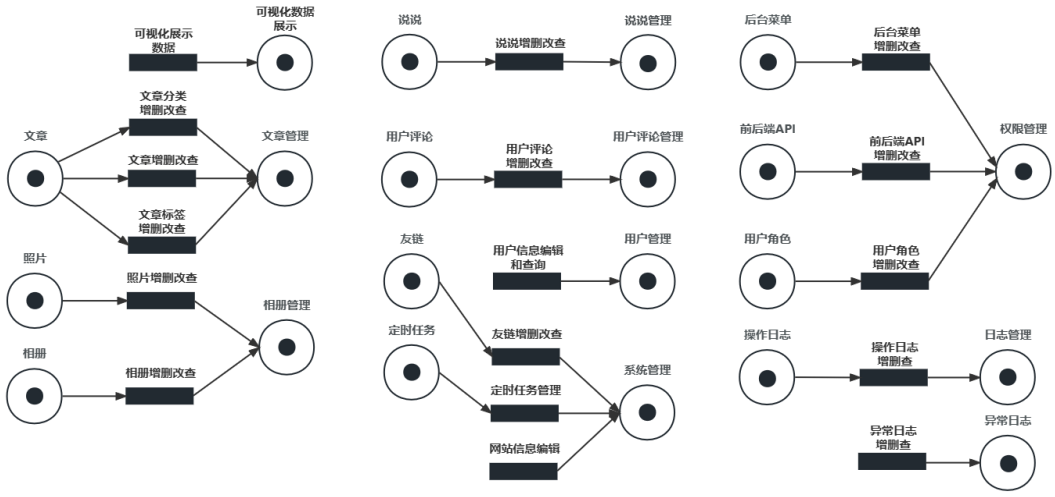
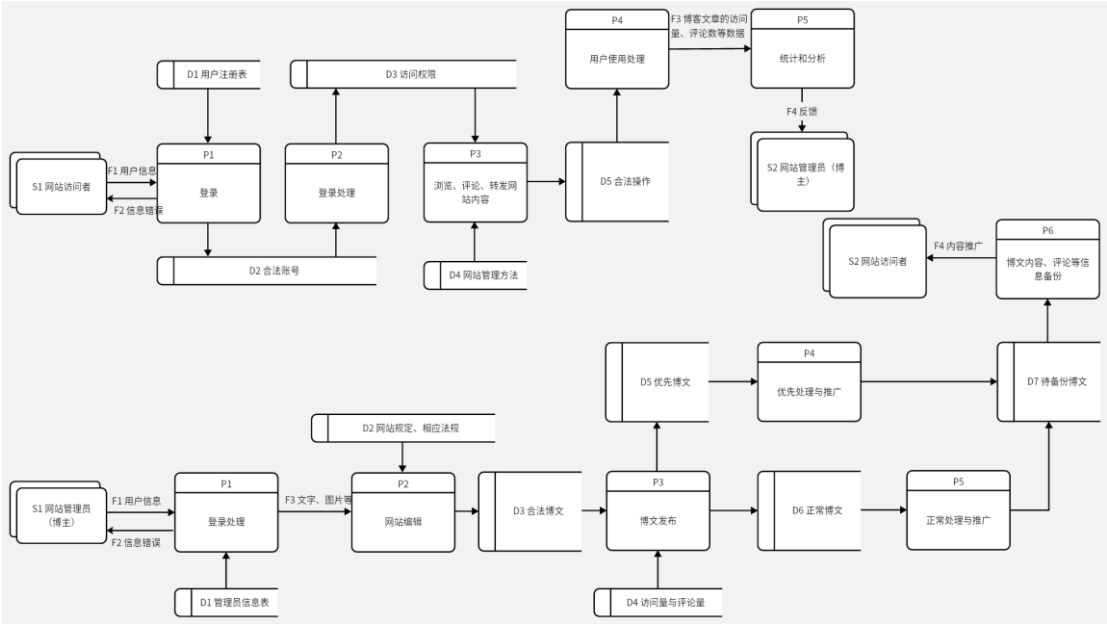
留言审核
编辑留言
提交审核
审核通过
留言发布
友链添加
友链编辑
添加友链
编辑友链
删除友链
友链删除


相册创建
创建相册
编辑相册
相册删除
删除相册
相册编辑
照片上传
编辑照片
上传照片
照片编辑
删除照片
照片删除

后台管理 Petri 网



3.数据流图



4.OCL 逻辑

1.登陆处理，检查用户是否存在以及用户名和密码是否匹配

```
Dockerfile
context User
  def: authenticate(username: String, password: String) : Boolean
=
    self.username = username and self.password = password
  enddef
endcontext
```

```
context LoginController
  pre: User.allInstances()->exists(user | user.username =
username)
  pre: User.allInstances()->select(user | user.username =
username)->one().authenticate(username, password) = true
  post: currentUser = User.allInstances()->select(user |
user.username = username)->one()
endcontext
```

2.操作合法性验证，以验证输入内容字数为例

```
Dockerfile
context BlogPost
  inv: self.title.size() <= 100
endcontext
```

3.用户权限检测，检查当前用户为普通用户或管理员

```
Dockerfile
context BlogPost
  inv: self.owner = currentUser or currentUser.role = 'admin'
endcontext

context Comment
  inv: self.author = currentUser or currentUser.role = 'admin'
endcontext
```

4.文章标签约束

```
Dockerfile
context BlogPost
  inv: self.tags->forAll(tag | allTags->includes(tag))
endcontext

context Tag
  inv: self.posts->forAll(post | allPosts->includes(post))
endcontext
```

5.主楼和评论的状态

```
Dockerfile
context BlogPost
  pre: self.status = 'draft'
```

```
  post: self.status = 'published'
endcontext

context Comment
  pre: self.status = 'published'
  post: self.status = 'edited'
endcontext
```

6.检查文章和用户的关系

```
Dockerfile
context BlogPost
  inv: self.owner = currentUser or self.status = 'published'
endcontext

context User
  inv: self.posts->forAll(post | post.owner = self)
endcontext
```

7.非注册用户（游客）的访问权限

```
Dockerfile
context BlogPost
  inv: currentUser.role <> 'guest' or self.status = 'published'
endcontext

context Comment
  inv: currentUser.role <> 'guest' or self.status = 'published'
endcontext
```