import pandas as pd

import matplotlib.pyplot as plt

import seaborn as sns

import os

def visualize\_code\_quality(data\_dir):

"""

可视化代码质量数据

:param data\_dir: 包含代码质量数据的目录

"""

sns.set\_theme(style="whitegrid")

plt.rcParams['font.family'] = 'DejaVu Sans'

# 设置输出目录

output\_dir = os.path.join(data\_dir, "quality\_visualization")

os.makedirs(output\_dir, exist\_ok=True)

# 读取代码质量数据

quality\_data\_path = os.path.join(data\_dir, "openfga\_code\_quality.csv")

if not os.path.exists(quality\_data\_path):

print(f"代码质量数据文件不存在: {quality\_data\_path}")

return

quality\_data = pd.read\_csv(quality\_data\_path)

quality\_data['date'] = pd.to\_datetime(quality\_data['date'])

# 1. 代码复杂度趋势

plt.figure(figsize=(12, 6))

sns.lineplot(x='date', y='complexity', data=quality\_data, marker='o', color='#e74c3c')

plt.title('Code Complexity Trend Over Time')

plt.xlabel('Date')

plt.ylabel('Complexity')

plt.grid(True, alpha=0.3)

plt.tight\_layout()

plt.savefig(os.path.join(output\_dir, 'code\_complexity\_trend.png'))

plt.show()

# 2. 未解决问题数量趋势

plt.figure(figsize=(12, 6))

sns.lineplot(x='date', y='issues', data=quality\_data, marker='o', color='#3498db')

plt.title('Unresolved Issues Trend Over Time')

plt.xlabel('Date')

plt.ylabel('Number of Issues')

plt.grid(True, alpha=0.3)

plt.tight\_layout()

plt.savefig(os.path.join(output\_dir, 'unresolved\_issues\_trend.png'))

plt.show()

# 3. 代码覆盖率趋势

plt.figure(figsize=(12, 6))

sns.lineplot(x='date', y='coverage', data=quality\_data, marker='o', color='#2ecc71')

plt.title('Code Coverage Trend Over Time')

plt.xlabel('Date')

plt.ylabel('Coverage (%)')

plt.grid(True, alpha=0.3)

plt.tight\_layout()

plt.savefig(os.path.join(output\_dir, 'code\_coverage\_trend.png'))

plt.show()

def main():

data\_dir = "D:/test/openfga\_code\_quality"

visualize\_code\_quality(data\_dir)

if \_\_name\_\_ == "\_\_main\_\_":

main()

date complexity issues

coverage

0 2025-01-01 5.856700 71 65.061587

1 2025-02-01 14.784441 61 76.121015

2 2025-03-01 9.800034 59 61.505066

3 2025-04-01 10.047175 114 83.559147

4 2025-05-01 5.304405 83 65.227032





