



AI-Powered Test Script Development in Azure DevOps



Tauranga City

Why AI in Test Development?

- Deriving Test Scenarios from User Story's can be time-consuming
- Manual test case creation is time-consuming
- Improve requirement coverage / negative testing
- Lack of automation in linking test cases to user stories

The AI-Driven Solution

- Easy to use solution for users, One-click test generation from User Stories information
- Uses OpenAI API to generate structured test cases
- Automatically adds test cases to a test plan In Azure DevOps
- Testcases should be linked to the User Story
- Costs should be within reason

How It Works - High-Level Workflow

- Step 1:** User clicks the button in Azure DevOps
- Step 2:** The plugin fetches the user story description & acceptance criteria
- Step 3:** Data is sent to OpenAI API for test case generation
- Step 4:** AI generates structured test cases in JSON format
- Step 5:** Test cases are added to an auto-created Test Plan and linked to the user story

The screenshot shows a detailed view of a user story in Azure DevOps. The story is titled "127926 1st Mortgagee EA: Final Demand if payment is 90 days from the first letter or 1st Nov" and is in the "Ready for Testing" state. It includes sections for "User story", "Additional details", "Data Objects", "Stakeholders", "Current State", "Supporting Documents", "Acceptance Criteria (Incl. Use Cases)", "Planning", "Review", "Dependency Info", "Deployment", and "Related Work". The "User story" section contains the text: "As a collection officer, I expect the **Enforcement Action** to send the Final Demand to the bank if payment is not received by the latest date of -90 days from the first letter or 1st of November in the current rating year." The "Acceptance Criteria" section lists: "The system should send the Final Demand letter to the bank if payment is not received by either: 90 days from the date of the first letter, or 1st of November in the current rating year, whichever comes later." The "Planning" section shows "Story Points" as "T-Shirt Size", "Priority" as "Moscow", and "Must have" as "Start Date". The "Review" section shows "Peer Reviewer" as "Unassigned" and "Acceptance criteria met?" as "Unassigned". The "Dependency Info" section shows "Parent" as "132747 Rates: Collections Rates Enforcement Actions - Test" and "Tested By (3)" with three entries.

Lessons Learned & Challenges

- Testcases generated are only as good as the information passed into the prompt
- For complex systems and custom code context is required
- Limited steps based on system knowledge
- Cost effective \$0.000672 NZD for the example shown used 1300 total tokens
- Effective from Clicking the button to the testcases being in DevOps is around 25 seconds

GPT-4o mini

Affordable small model for fast, everyday tasks | 128k context length

Price

Input:
\$0.150 / 1M tokens

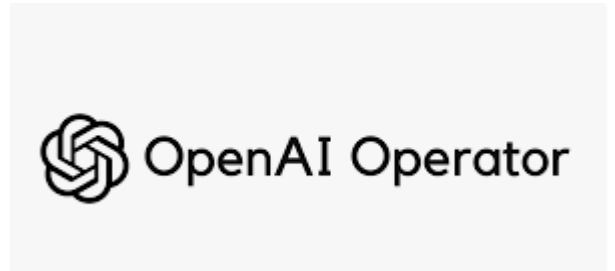
Cached input:
\$0.075 / 1M tokens

Output:
\$0.600 / 1M tokens

Future Enhancements

- Fine-tuning AI responses for better accuracy using RAG (Retrieval-Augmented Generation)
- Standardize User Story Formats across sprint teams for alignment
- Experimenting with different models

Get Curious about AI!





[Verse]



Tauranga City