TALENT ENGINEERING ACADEMY

Advanced Automation and Exception Handling

PRACTICE WORKBOOK

Design stateful workflows that survive duplicates, partial failures, retries and changing candidate intent.

PATHWAY	Recruitment AI, Data and Systems
LEVEL	Advanced
EDITION	2026.09
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Free learning. Practical work. Better recruitment.

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WORKBOOK GUIDE

Build something useful as you learn.

This workbook turns the course into a practical piece of work you can review, refine and adapt. Print it, annotate it digitally, or use the prompts in your preferred notes tool.

YOUR COURSE DELIVERABLE

A state machine, failure matrix and recovery specification.

How to use this workbook

01 Work through the course lessons in order, then complete the matching workbook prompts.

02 Use fictional or properly authorised information. Do not add candidate or client confidential data.

03 Compare your decisions with the self-review guidance. Revise assumptions, gaps and unclear ownership.

04 Keep the finished workbook as evidence of your learning and as a starting point for real work.

BEFORE YOU START

Plan Your First Recruitment Workflow and basic familiarity with records and integrations.

Course page: https://talentengineering.org/courses/advanced-automation

PART 1

Plan your course deliverable.

Use these planning pages to define what you are producing before you work through the lesson exercises. Return to them as your thinking develops.

WORKSHEET 01

States and permitted transitions

Capture the evidence, decisions, assumptions, owners and next actions that make this section usable.

YOUR WORKING NOTES

WORKSHEET 02

Idempotency key and operation boundary

Capture the evidence, decisions, assumptions, owners and next actions that make this section usable.

YOUR WORKING NOTES

WORKSHEET 03

Retryable versus permanent failure

Capture the evidence, decisions, assumptions, owners and next actions that make this section usable.

YOUR WORKING NOTES

WORKSHEET 04

Partial completion and compensation

Capture the evidence, decisions, assumptions, owners and next actions that make this section usable.

YOUR WORKING NOTES

WORKSHEET 05

Exception queue and reconciliation

Capture the evidence, decisions, assumptions, owners and next actions that make this section usable.

YOUR WORKING NOTES

WORKSHEET 06

Recovery tests and audit events

Capture the evidence, decisions, assumptions, owners and next actions that make this section usable.

YOUR WORKING NOTES

PART 2

Apply each lesson.

Each exercise is designed to turn the lesson into evidence of practice. Complete the task, then use the guidance to challenge your first answer.

LESSON 01 / 04

Model states and valid transitions

YOUR PRACTICE TASK

Draw a state machine for interview coordination with withdrawal and rescheduling.

YOUR RESPONSE

FICTIONAL WORKED EXAMPLE

A candidate withdraws while an interview invitation is queued. The send step reads current application state and cancels the operation, even though the original scheduling event was valid.

SELF-REVIEW GUIDANCE

List permitted transitions and one forbidden transition. Include a stale-event test. The diagram should prevent a past event from overriding a newer decision.

LESSON 02 / 04

Make repeated events safe

YOUR PRACTICE TASK

Specify an idempotency key and handling for simultaneous duplicate events.

YOUR RESPONSE

FICTIONAL WORKED EXAMPLE

Two workers receive the same booking event. A durable operation record allows one to create the invitation while the other sees it is already in progress or complete. A new interview version uses a distinct operation key.

SELF-REVIEW GUIDANCE

Explain how the key stays stable across retries and changes for a genuinely new operation. Include what happens if the worker crashes after the provider acts but before local completion is recorded.

LESSON 03 / 04

Classify failures and recover partial work

YOUR PRACTICE TASK

Build a failure matrix for six cases with retry, pause or compensation decisions.

YOUR RESPONSE

FICTIONAL WORKED EXAMPLE

A workflow creates a calendar event but fails to update the ATS. Recovery links the existing event to the application instead of creating another event. If the interview has since been cancelled, it reconciles cancellation too.

SELF-REVIEW GUIDANCE

Distinguish transient, permanent and ambiguous failures. Include an external action that cannot truly be undone and explain the corrective communication needed.

LESSON 04 / 04

Test recovery and reconciliation

YOUR PRACTICE TASK

Write four failure-injection tests and expected reconciliation outcomes.

YOUR RESPONSE

FICTIONAL WORKED EXAMPLE

A test kills the worker after the calendar provider succeeds. Reconciliation finds the event by its operation reference and completes the local record without sending another invitation.

SELF-REVIEW GUIDANCE

Include concurrent duplicates, lost responses, stale cancellations and a full review queue. Verify final state and external side effects, not just a successful HTTP response.

FINAL REVIEW

Strengthen the work before you use it.

Review the completed workbook as one connected piece of work. The strongest deliverables are internally consistent, explicit about limitations and clear about who decides what happens next.

- [ ] The work distinguishes facts, evidence, assumptions and open questions.
- [ ] Decisions have named owners, dates and review points.
- [ ] Measures connect to the outcome rather than activity alone.
- [ ] Risks, accessibility needs, privacy considerations and limitations are visible.
- [ ] The next action is specific enough for another person to follow.
- [ ] The finished deliverable can be explained in plain language.

FINAL CHANGES AND NEXT ACTIONS

FURTHER READING

Continue with trusted sources.

These sources support further study. A reference does not imply endorsement. Check the current official rules and obtain appropriate professional advice for real legal, financial or regulated decisions.

GOV.UK: Responsible AI in recruitment

UK guidance on procuring and deploying recruitment AI.

https://www.gov.uk/government/publications/responsible-ai-in-recruitment-guide/responsible-ai-in-recruitment

NIST: AI Risk Management Framework

Voluntary framework for organising AI risks and controls.

https://www.nist.gov/itl/ai-risk-management-framework

ABOUT THIS WORKBOOK

Original educational scenarios. Practical work is self-directed and is not independently assessed. Adapt any method to your context with appropriate review.

Talent Engineering Academy is an education initiative by Vitae.