

AUTOMATIZACIÓN DE PROCESOS

# Informe de Práctica 006

Diseño, implementación y documentación de flujos de trabajo avanzados utilizando n8n y microservicios.

## HERRAMIENTAS

⚡ n8n Workflow

🗄️ PostgreSQL

📧 RabbitMQ

## REPOSITORIO

🔗 [github.com/aek676/itsi-2026](https://github.com/aek676/itsi-2026)

AUTOR

**Anass El Jabiry Kaddir**

FECHA

**7 de diciembre de 2025**

# Desarrollo Guiado

Configuración, Credenciales y Base de Datos

01

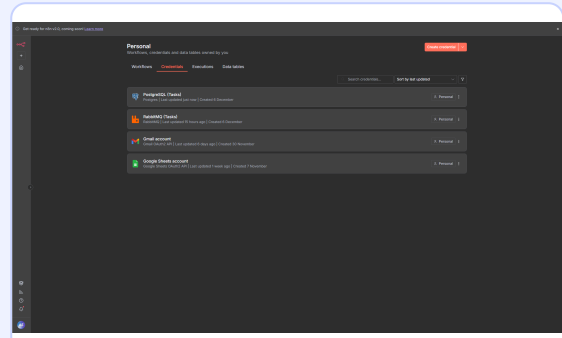
## 1. UNIFICACIÓN EN DOCKER COMPOSE

Se unificó todo en docker-compose.yml. n8n y microservicios comparten la red interna.

```
services:
  n8n:
    image: docker.n8n.io/n8nio/n8n:latest
    ports: ["5678:5678"]
    volumes: [n8n_data:/home/node/.n8n]
  web:
    build: ./task-manager-service/web
    environment:
      - DATABASE_URL=postgresql://user:pw@db:5432/db
      - RABBITMQ_URL=amqp://guest:guest@mq:5672/%2F
    depends_on: [db, mq]
  db: # PostgreSQL
  mq: # RabbitMQ
```

## 2. CONFIGURAR CREDENCIALES

Acceso para **PostgreSQL** (puerto 5432) y **RabbitMQ** (puerto 5672).



## 3. Flujo 1 - Interacción Directa con la Base de Datos

Workflow de lectura y escritura en PostgreSQL.

Workflow executed successfully

id	title	description	done
0	Prueba	Esto es una prueba	null

# Desarrollo Guiado (Cont.)

## Parte 2: Diseño de Patrones Asíncronos

01

### 4. DISEÑO DEL FLUJO 2 (ASÍNCRONO)

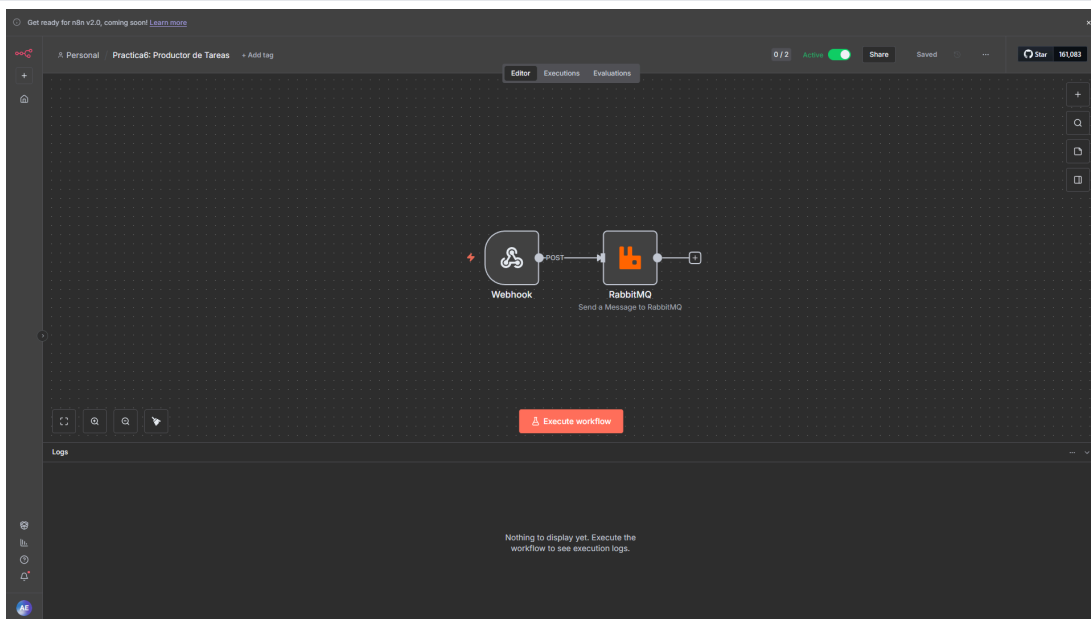
Se implementaron dos workflows interconectados mediante **RabbitMQ**.

El **Productor** recibe una petición web y encola el mensaje.

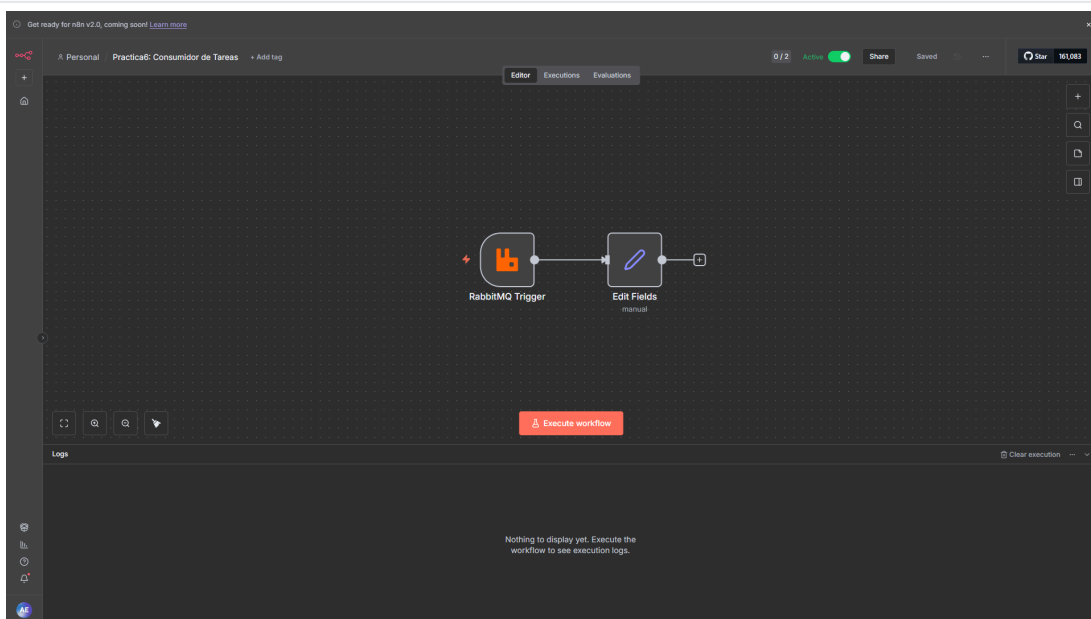
El **Consumidor** escucha la cola y procesa el mensaje.

🔴 **Nota: Interruptor "Active" activado.**

#### DISEÑO PRODUCTOR (WEBHOOK → RABBITMQ)



#### DISEÑO CONSUMIDOR (RABBITMQ TRIGGER)

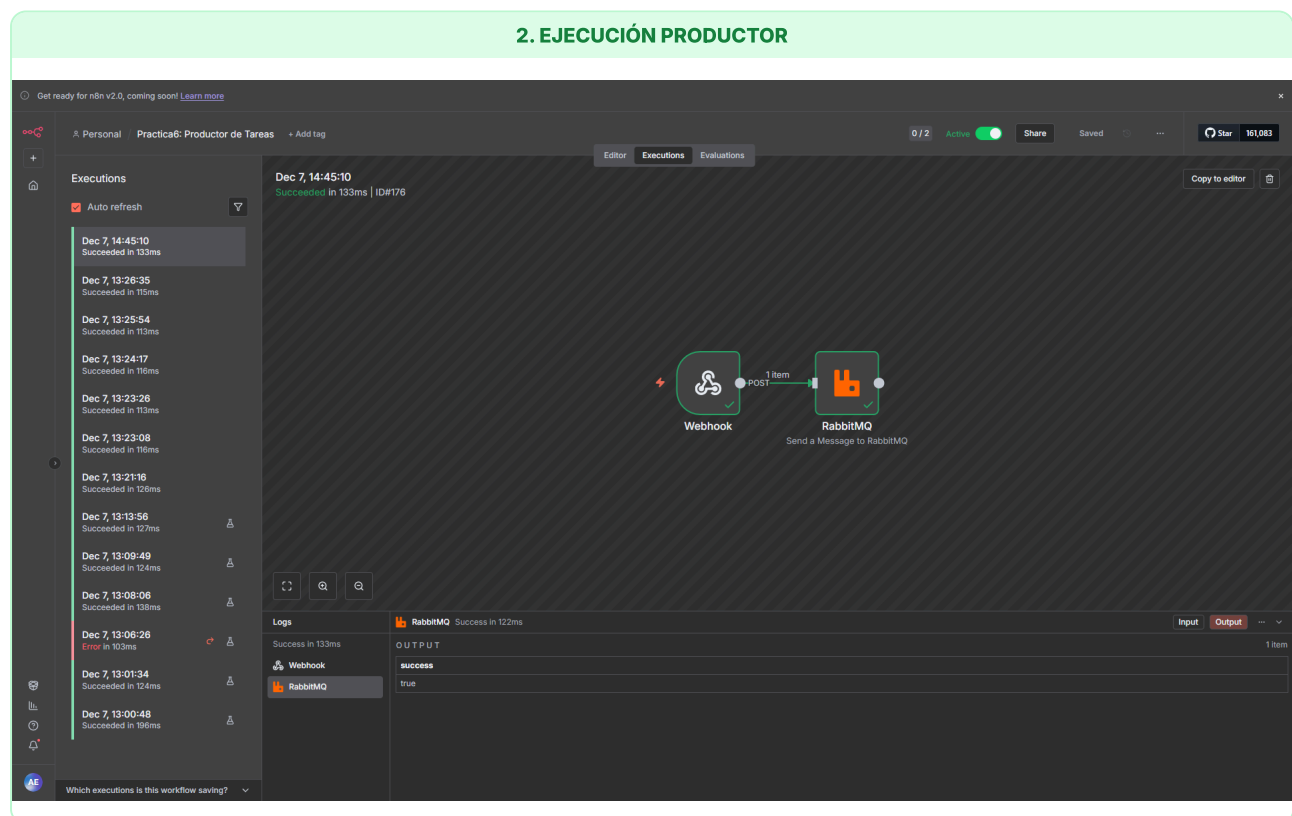
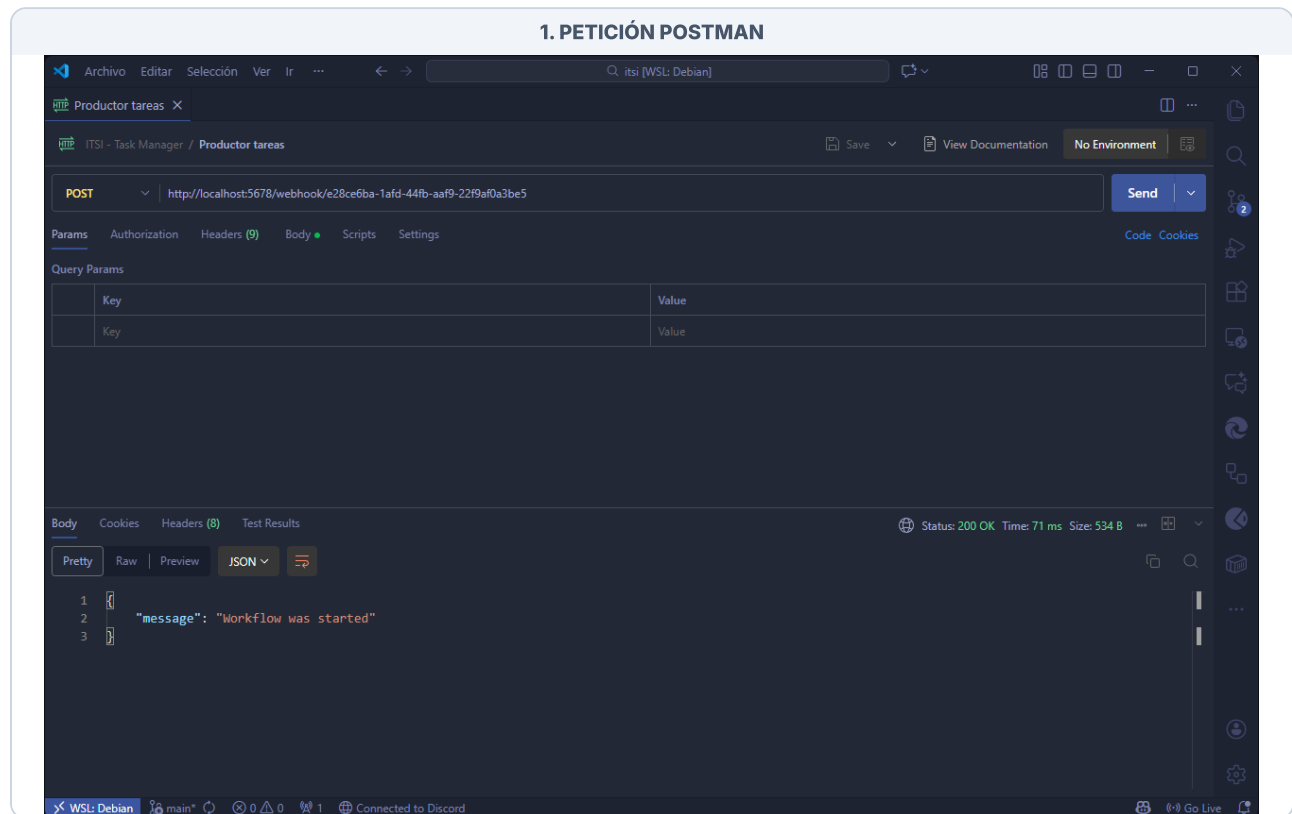


# Verificación del Sistema

01

## Paso 5: Pruebas de Ejecución (Parte 1)

Validación del ciclo completo: Petición externa (Postman) → Ejecución Productor (n8n).



# Verificación del Sistema

## Paso 5: Pruebas de Ejecución (Parte 2)

01

### 3. EJECUCIÓN CONSUMIDOR (CONFIRMACIÓN DE RECEPCIÓN)

The screenshot displays the n8n workflow editor interface. On the left, a list of executions is shown, with the most recent one at Dec 7, 14:47:16, marked as 'Succeeded in 22ms'. The main workspace shows a workflow with two nodes: 'RabbitMQ Trigger' and 'Edit Fields (manual)'. The workflow is active, as indicated by the green status bar at the top. Below the workflow, the 'Logs' section shows the output of the 'Edit Fields' node, which includes the text 'procesado\_por' and 'n8n\_consumidor'.

Get ready for n8n v2.0, coming soon! [Learn more](#)

Personal Practica6: Consumidor de Tareas + Add tag 0/2 Active Share Saved Star 161,083

Executions

- Dec 7, 14:47:12 Running for 23s
- Dec 7, 14:47:16 Succeeded in 22ms
- Dec 7, 14:43:28 Canceled in 1.417s
- Dec 7, 13:26:35 Succeeded in 18ms
- Dec 7, 13:23:27 Succeeded in 26ms
- Dec 7, 13:23:23 Canceled in 1m 13.197s
- Dec 7, 13:22:02 Canceled in 5.737s
- Dec 7, 13:17:03 Canceled in 4m 39.155s
- Dec 7, 13:16:29 Canceled in 5m 15.593s
- Dec 7, 13:14:07 Canceled in 7m 39.659s
- Dec 7, 13:13:35 Canceled in 8m 12.177s
- Dec 7, 13:12:52 Canceled in 8m 57.529s
- Dec 7, 13:12:21 Succeeded in 8m 55.911s

Dec 7, 14:47:16 Succeeded in 22ms | ID#180 Copy to editor

RabbitMQ Trigger 1 item Edit Fields (manual)

Logs Edit Fields Success in 2ms

OUTPUT

procesado\_por

n8n\_consumidor

1 item

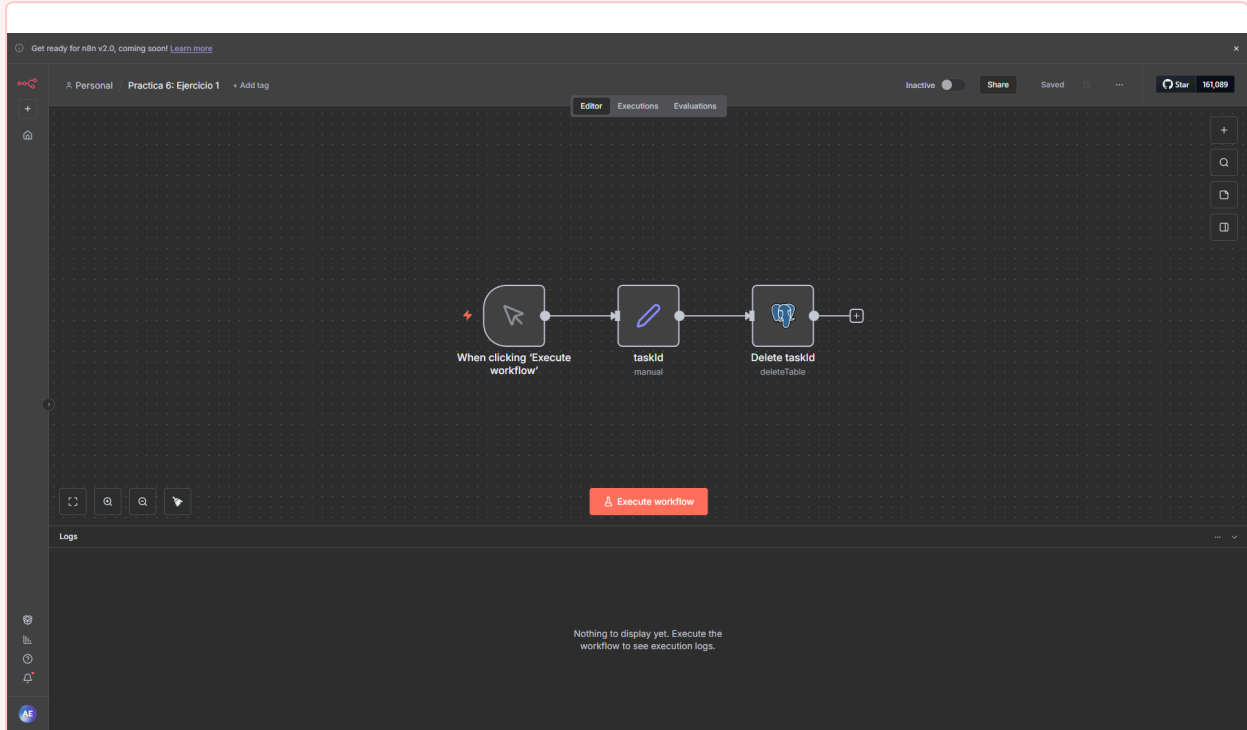
Which executions is this workflow saving?

# Ejercicio 1: Eliminación

Diseño y Configuración

02

## 1. DISEÑO DEL FLUJO



## 2. CONFIGURACIÓN NODO DELETE

The screenshot shows the configuration panel for the 'Delete taskid' node. The panel is divided into 'Parameters' and 'Settings' tabs. The 'Parameters' tab is active, showing the following configuration:

- Credential to connect with:** PostgreSQL (Tasks)
- Operation:** Delete
- Schema:** From list: public
- Table:** From list: task
- Command:** Delete
- Select Rows:** Column: id, Fixed Expression
- Operator:** Equal
- Value:** {{ \$json.taskid }}
- Add Condition:** (button)
- Combine Conditions:** AND
- Options:** No properties, Add option (button)

The 'Settings' tab is also visible, showing 'Docs' and 'Execute step' buttons. The left sidebar shows 'INPUT' with 'taskid' selected. The right sidebar shows 'OUTPUT' with 'Schema', 'Table', and 'JSON' tabs. The bottom status bar indicates 'Execute this node to view data or set mock data'.

# Ejercicio 1: Eliminación

Datos y Ejecución

02

### 3. DATOS INICIALES (BD)

The screenshot shows the n8n workflow editor interface. At the top, there's a header with the text "3. DATOS INICIALES (BD)". Below it, the workflow editor is displayed. The workflow consists of three steps connected in a sequence: "When clicking 'Execute workflow'", "taskid manual", and "Delete taskid deleteTable". The workflow is currently inactive, as indicated by the "Inactive" toggle switch. There are buttons for "Share", "Saved", and "Star" (161,089). The "Logs" section at the bottom is empty, with a message: "Nothing to display yet. Execute the workflow to see execution logs."

### 4. EJECUCIÓN EXITOSA

The screenshot shows the n8n workflow editor interface after a successful execution. The workflow steps now have green checkmarks, indicating they were executed successfully. The "Logs" section at the bottom is populated with execution details for the "taskid" step. The logs show "Success in 163ms" and "taskid Success in 2ms". The "OUTPUT" section shows the output of the "taskid" step, which is "0".

# Ejercicio 1: Eliminación

Verificación Final

02

## 5. VERIFICACIÓN DE BORRADO

Get ready for n8n v2.0, coming soon! [Learn more](#)

Personal Practica 6: Flujo 1 - Interacción Directa con la Base de Datos + Add tag

Editor Executions Evaluations

Inactive Share Saved ... Star 161,090

When clicking 'Execute workflow' 1 item Select rows from a table select

Execute workflow

Logs Clear execution Select rows from a table Success in 22ms

Success in 270ms

When clicking 'Execute work...

Select rows from a table

OUTPUT

No output data returned



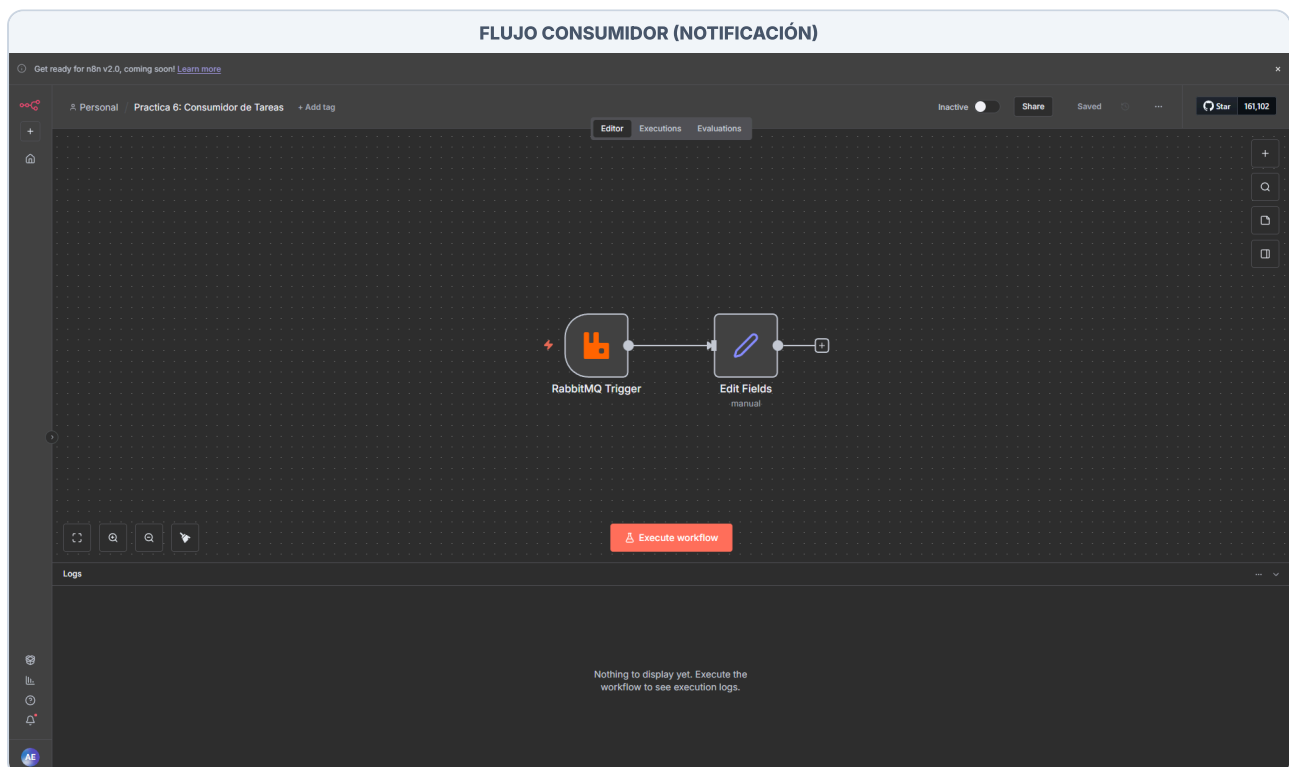
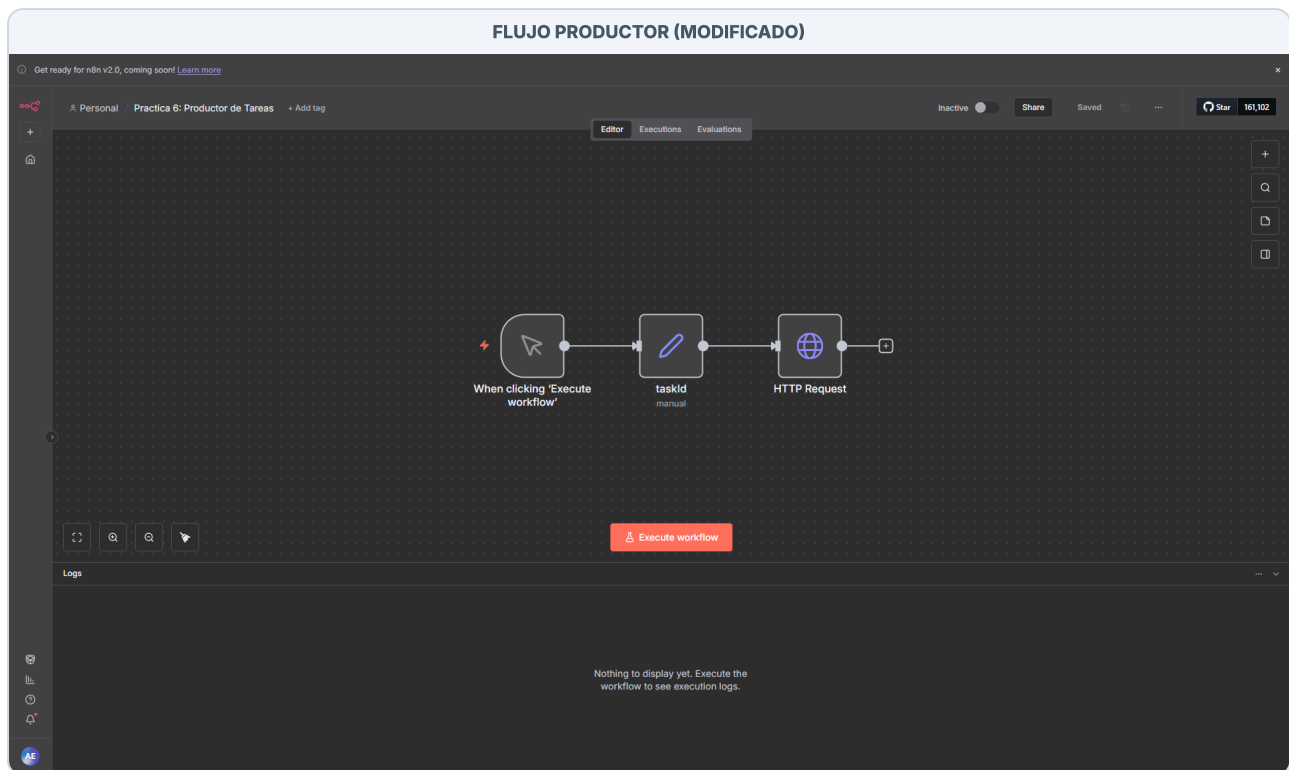
# Ejercicio 2: Notificaciones

## Diseño de Flujos

03

### OBJETIVO

Reemplazar consumidor Python por n8n (Queue: task\_completed).



# Ejercicio 2: Notificaciones

## Verificación de Ejecución

03

### EJECUCIÓN PRODUCTOR

The screenshot shows the n8n interface for a workflow titled 'Practica 6: Productor de Tareas'. The workflow is active and the 'HTTP Request' step is currently executing. The left sidebar shows a list of executions, with the most recent one at Dec 7, 15:48:28. The main panel displays the workflow diagram with three steps: 'When clicking \'Execute workflow\'', 'taskid manual', and 'HTTP Request'. The 'HTTP Request' step is highlighted, and its output is shown in the bottom right panel.

Executions

- Dec 7, 15:48:28 Succeeded in 59ms
- Dec 7, 15:47:12 Succeeded in 61ms
- Dec 7, 15:47:06 Succeeded in 15ms
- Dec 7, 15:34:44 Succeeded in 11ms
- Dec 7, 15:34:38 Succeeded in 18ms
- Dec 7, 15:32:30 Error in 110ms
- Dec 7, 15:29:48 Error in 19ms
- Dec 7, 15:28:57 Error in 28ms
- Dec 7, 15:28:48 Error in 20ms
- Dec 7, 15:28:36 Error in 37ms
- Dec 7, 15:28:07 Error in 212ms
- Dec 7, 15:27:43 Succeeded in 16ms
- Dec 7, 14:47:16 Succeeded in 133ms
- Dec 7, 14:46:50 Succeeded in 117ms

Workflow Diagram:

```
graph LR; A[When clicking 'Execute workflow'] -- 1 item --> B[taskid manual]; B -- 1 item --> C[HTTP Request];
```

Logs

Success in 59ms

When clicking 'Execute workflow'

taskid

HTTP Request

OUTPUT

task

description : Esta es una prueba para completar una tarea con n8n

done : true

id : 2

title : tarea a completar

### EJECUCIÓN CONSUMIDOR

The screenshot shows the n8n interface for a workflow titled 'Practica 6: Ejercicio 2'. The workflow is active and the 'Edit Fields' step is currently executing. The left sidebar shows a list of executions, with the most recent one at Dec 7, 15:48:28. The main panel displays the workflow diagram with two steps: 'RabbitMQ Trigger' and 'Edit Fields'. The 'Edit Fields' step is highlighted, and its output is shown in the bottom right panel.

Executions

- Dec 7, 15:45:58 Running for 36m 48s
- Dec 7, 15:48:28 Succeeded in 19ms

Workflow Diagram:

```
graph LR; A[RabbitMQ Trigger] -- 1 item --> B[Edit Fields];
```

Logs

Success in 19ms

RabbitMQ Trigger

Edit Fields

OUTPUT

This is an item, but it's empty.

# Ejercicio 3: API con Webhook

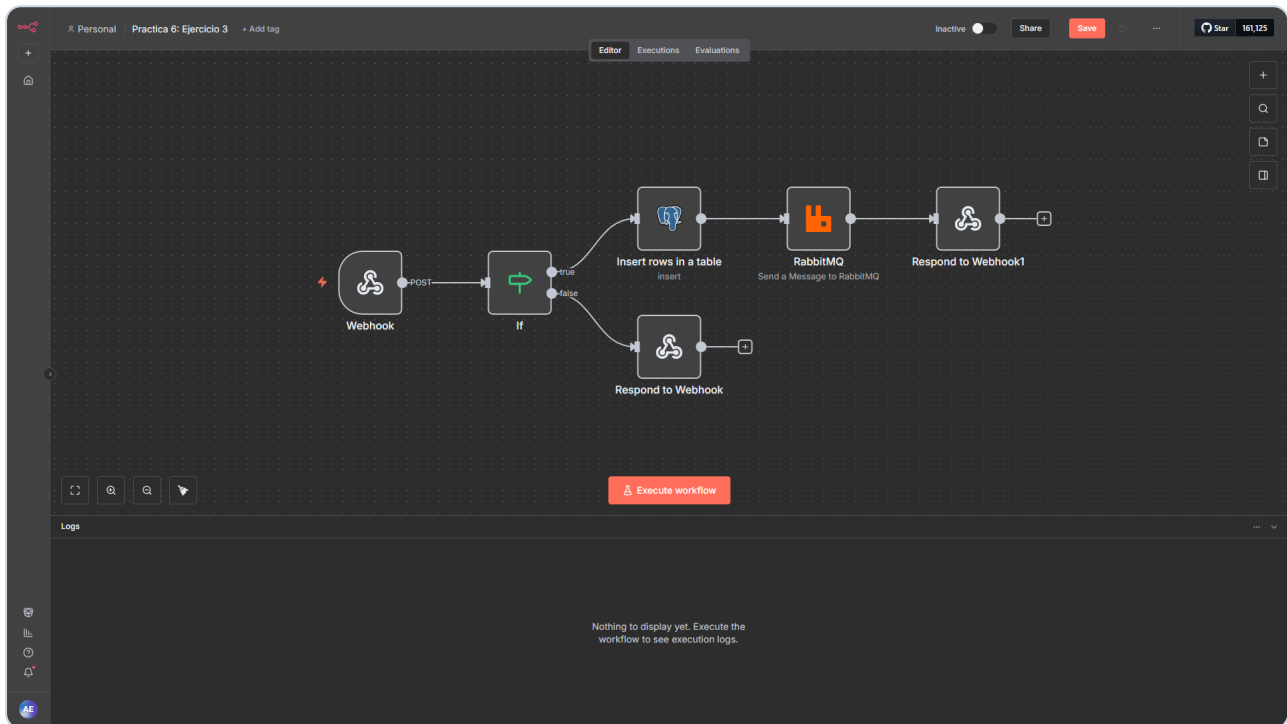
Diseño y Caso de Éxito

04

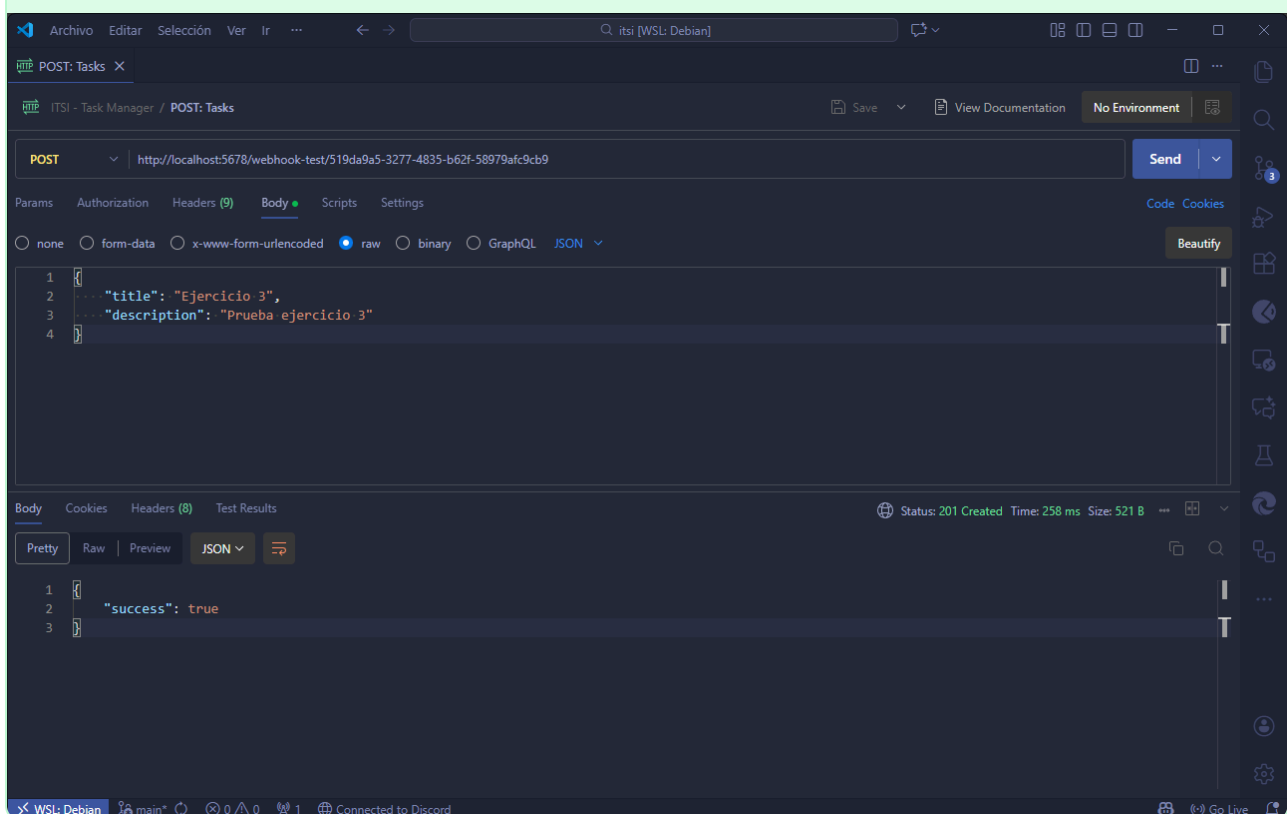
## OBJETIVO

Reemplazo de API Flask con n8n (Webhook + DB + RabbitMQ + Response).

## 1. DISEÑO DEL WORKFLOW



## 2. POSTMAN: 201 CREATED



# Ejercicio 3: API con Webhook

Manejo de Errores (Bonus)

04

## 3. POSTMAN: 400 BAD REQUEST

