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The purpose of the Journal is to disseminate knowledge, experience, and best practice in engineering & manufacturing.
The articles are written by practicing professionals in the Engineering City (EC) in Yerevan. They cover issues relevant to their projects, operations, and organizations.
The articles address the challenges of the time. As such, the Journal is also a chronicle of the evolution of the EC, its companies, and its individuals.
It is the aim of the Journal to advance the engineering & manufacturing practice, to enrich the engineering & manufacturing community, and to contribute to the worldwide discourse in engineering & manufacturing.

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Engineering Management

. Lay Offs in the EC

by Rama, Engineering Association

"Lay Offs" is the act of terminating employees for market reasons.

We all work in the marketplace. "Markets" means free and unrestrained competition, "markets" means constant fluctuations, "markets" means out-of-our-control conditions, "markets" mean unpredictability – especially in VUCA times (Volatile, Uncertain, Complex, Ambiguous).

"Lay offs" is absolutely not the same as firing. "Firings" happen because of bad performance of an individual, whereas "lay offs " happen because of change in the marketplace.

"Lay offs" are forced on the organization, whereas "firing" is a deliberate act of the organization.

"Lay offs" happen in quantities, meaning that organizations are forced to lay off groups of people at the same time, whereas "firing" is done individually.

In the case of "lay offs", organizations provide positive reference about the individuals, whereas, in the case of "firing", organizations tend not to give any reference for the individual.

"Lay offs" is a difficult departure of colleagues and friends, whereas "firing" is a departure of cultural misfits.

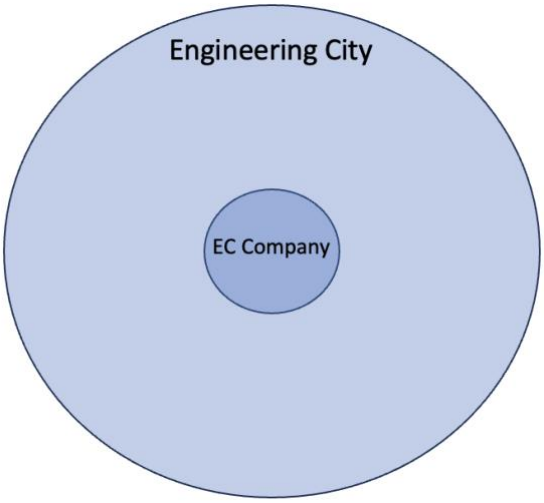
"Lay offs" are tragic, whereas "firings" are reliefs.

"Lay offs" is an act of rescuing the organization from collapse, whereas "firing" is an act of securing the organization against collapse.

"Lay offs" weakens the organization, whereas "firing" strenghtens it.

All companies in the EC work in the marketplace hence all are subject to lay-offs at one time or another. But lay offs in one company in the EC must not be as painful. This is because there are many companies that must be able to absorb the laid off people.

As such, lay offs in the EC must not be considered "loss" as long as people stay in the EC community in one company or another.



Pic. A Company working in the Engineering City

You may also read the article "Working for the Valley, Working for the City" in the previous edition of the Journal (Issue 20/25).

Popularizing N8N Corner

. Automating of BOM Submission to Procurement, version 2 – a Buildup

by Ashot Arzumanyan, 11th-Grade School Student interning in the EC

The process of automating operations of handling BOM files is being improved. On the screenshot below you can see our current full workflow.

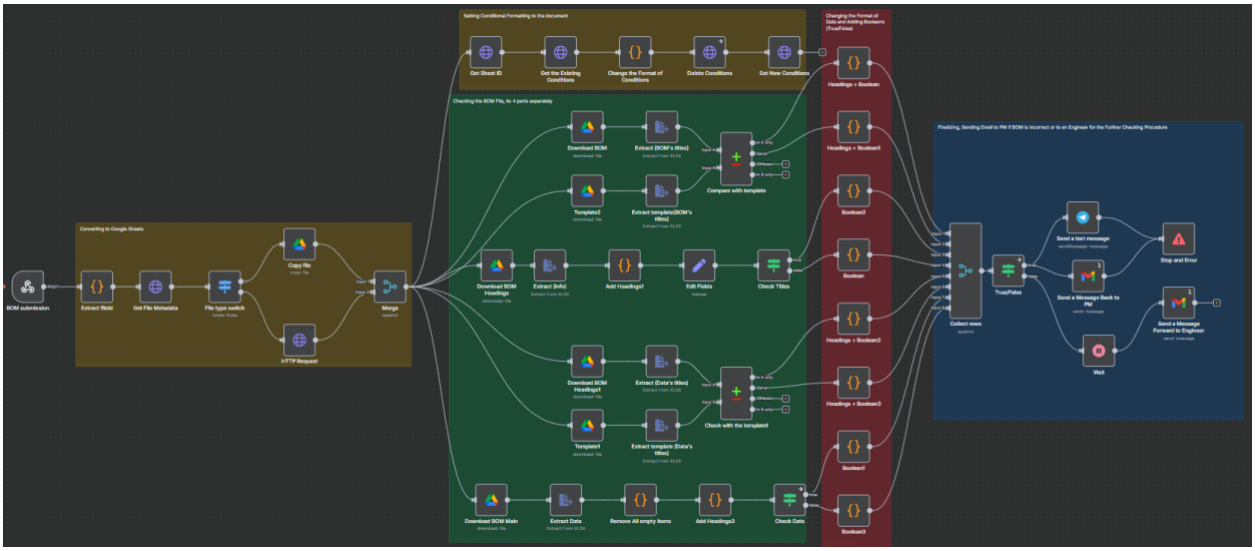


***Figure 1** – Workflow from Start to End*

Problem Statement 1: different types of files are being uploaded (Excel or Google Sheets). The workflow can handle fully, without any errors only Google Sheets file.

So, the aim was to somehow avoid Excel files in the workflow, minimizing restrictions to the engineers.

You can see the part responsible for this task below:

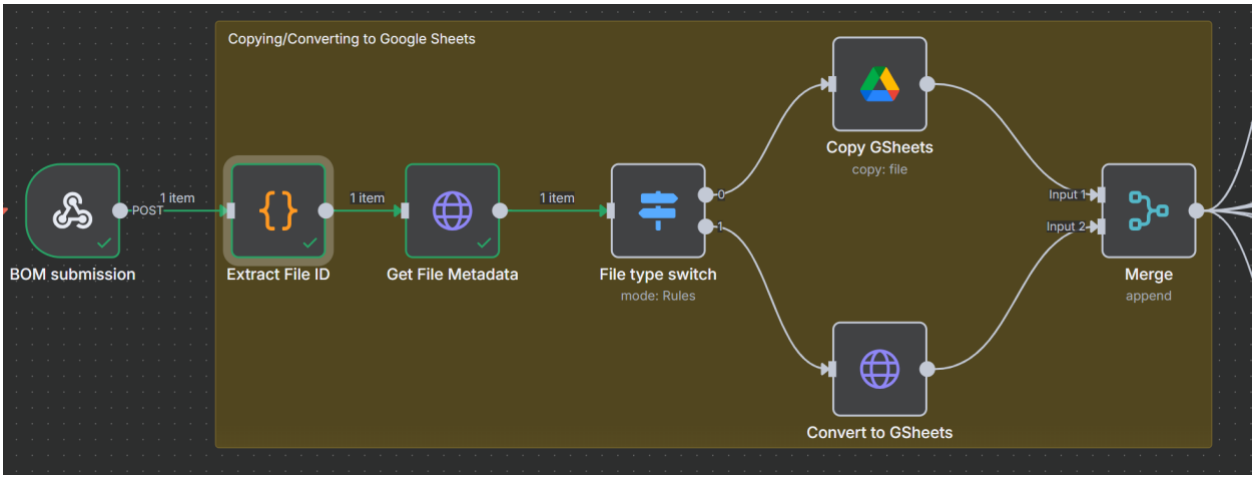


Figure 2 - *Copying & Converting to Google Sheets*

Now, let's break this into steps:

1. Extract File ID: this node contains JavaScript code, which gets the file's link and extracts its ID. This ID is used in further stages.
2. Get File Metadata: this node outputs the ID of a file shared by the engineer, its name and MIME type (shows what is the type of a file).

3. File type switch: this node gets the mime type and checks if this is a Google Sheets file or an Excel file. Creates 2 roots for the workflow to continue, according to the type of a file.

4. (a) Copy GSheets: executes when the file was a Google Sheet format. This copies the file in the same folder and keeps working with the copy, leaving the original BOM submitted unchanged.
   (b) Convert to GSheets: executed when the file attached was an Excel format. Unfortunately, there is no action in n8n which coverts Excel file to Google Sheets, so here this is done by sending an HTTP request to that file. Here, the same Google Sheets file is being created in the same folder, so Excel file remains unchanged and Google Sheets file is processed further.

5. Merge: this node simply allows to ease the workflow. The data that is used further is taken from 1 node. Otherwise, there would be the need to create a logic, where the data is taken either from Copy GSheets node, if no data is processed there, from Convert to GSheets node. So, the aim of this node is to ease the logic of the workflow.

Problem Statement 2: the data that is filled by the employee before submitting the BOM may be incorrect and the workflow may fail. So, we had to create an algorithm that will always collect right data.

Input data should be kept in a certain file, so that there is a reference to a valid information (see Figure 3).

Worker's ID	Full name	Email	Phone number
1234	Ashot Arzumanian	ashot140909@gmail.com	89645290777
5678	Alexandr Nedzvecky	alex_box@gmail.com	77777777777
9101112	Vahe Hovhannisyan	vaheeeee@gmail.com	055777326
45623	Artyom Solopin	a_tyom@gmail.com	732901123
E621	Gevorg Zagaryan	gevww@gmail.com	562910
Q367891	Vazgen Sahakyan	malibu@gmail.com	5627801
K73	Tigran Misakyan	tpab_gnx@gmail.com	329402
J73829	Armen Tigranyan	mbdtf@gmail.com	3083259963
S5267	Maria Pochukanec	stayingpower@gmail.com	46829
L68	Shavarsh Vardanyan	io.non.so.parlar.damore@gmail.com	9862234

Figure 3 *– Employee's Database*

Figure 2 illustrates an example of a potential database of employee, with their names, IDs, Emails and phone numbers in Google Sheets. Then, via Google Apps Script we've created a form. The idea is that a project manager fills his/her personal full name and full name of engineer involved in a project, and the rest of data is automatically filled from the data in the database. The form gives a dropdown list of all full names that match the input data (see Figure 4), so that a project manager should click on a certain full name. This reduces the risk of incorrect data input significantly.

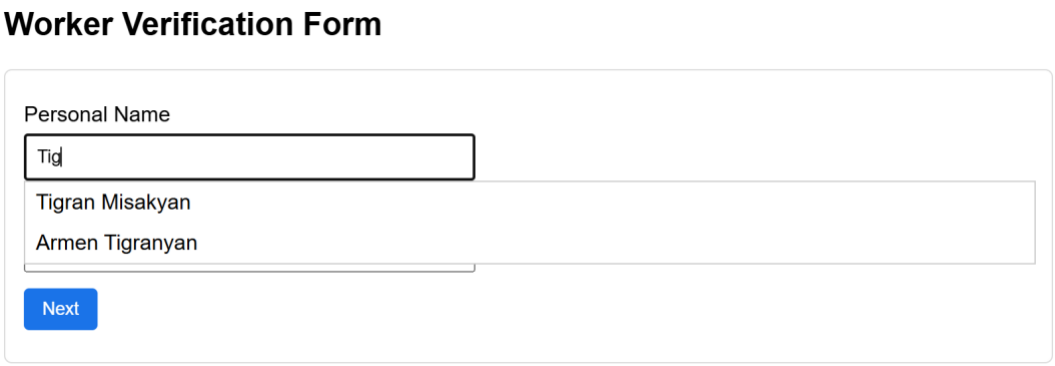


Figure 4 *– Dropdown List Demonstration*

Then, when a project manager have filled both fields, he submits the first page (see Figure 5).



Figure 5 *– Page 1 Filled*

If the information provided by the project manager is incorrect (i.e. he/she wrote an invalid full name) the form will throw an error (see Figure 6).



Figure 6 *– Output When Page 1 Gets Invalid Full Name*

Then, when page 1 gets valid data it goes to page 2, where required info is automatically filled (see Figure 7).

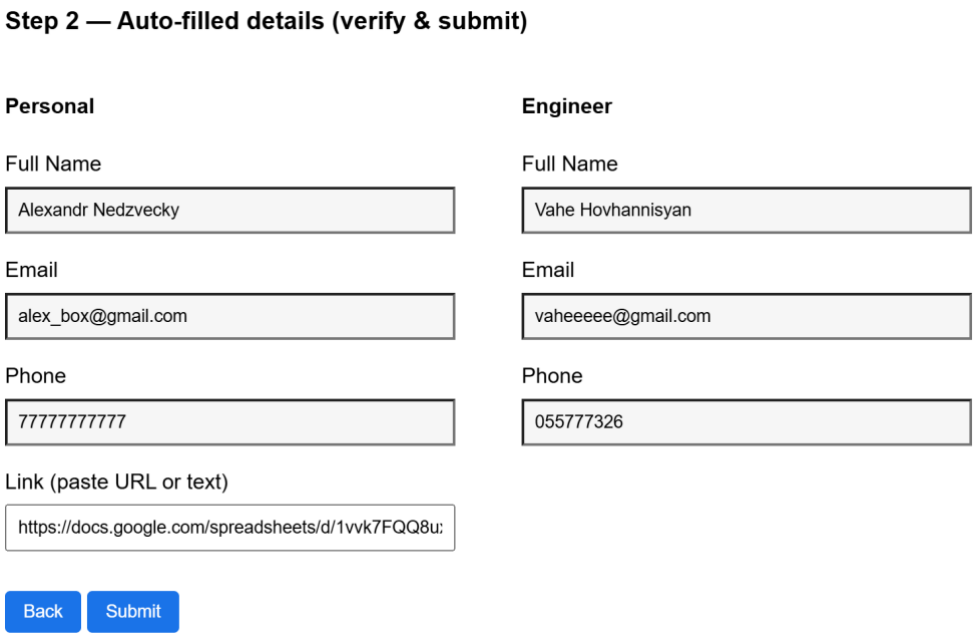
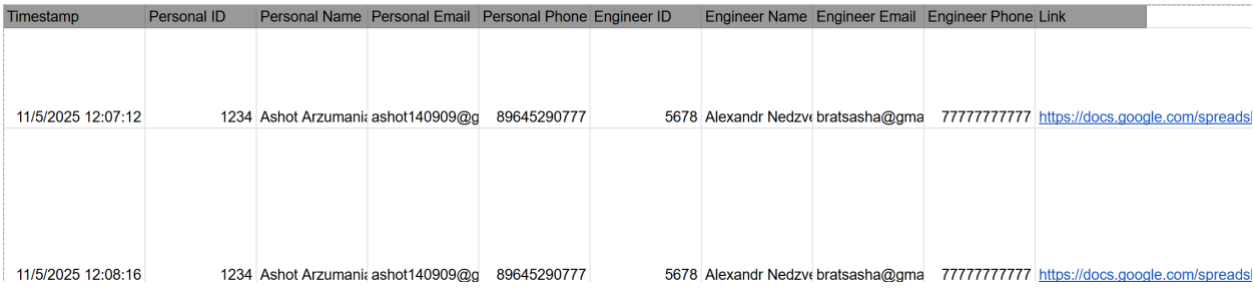


Figure 7 *– Page 2*

Then, all the fields, except of "Link" are given. A project manager, then, has to simply parse a link to the BOM, which is going to be checked.

1) After the form has been submitted, it does 2 actions: All the data is filled in another sheet of the same Google Sheets document, where employee's data is kept, so that submissions can be monitored (see Figure 8).



Timestamp	Personal ID	Personal Name	Personal Email	Personal Phone	Engineer ID	Engineer Name	Engineer Email	Engineer Phone	Link
11/5/2025 12:07:12	1234	Ashot Arzumani	ashot140909@g	89645290777	5678	Alexandr Nedzv	bratsasha@gma	77777777777	https://docs.google.com/spreads
11/5/2025 12:08:16	1234	Ashot Arzumani	ashot140909@g	89645290777	5678	Alexandr Nedzv	bratsasha@gma	77777777777	https://docs.google.com/spreads

Figure 8 *- Submissions*

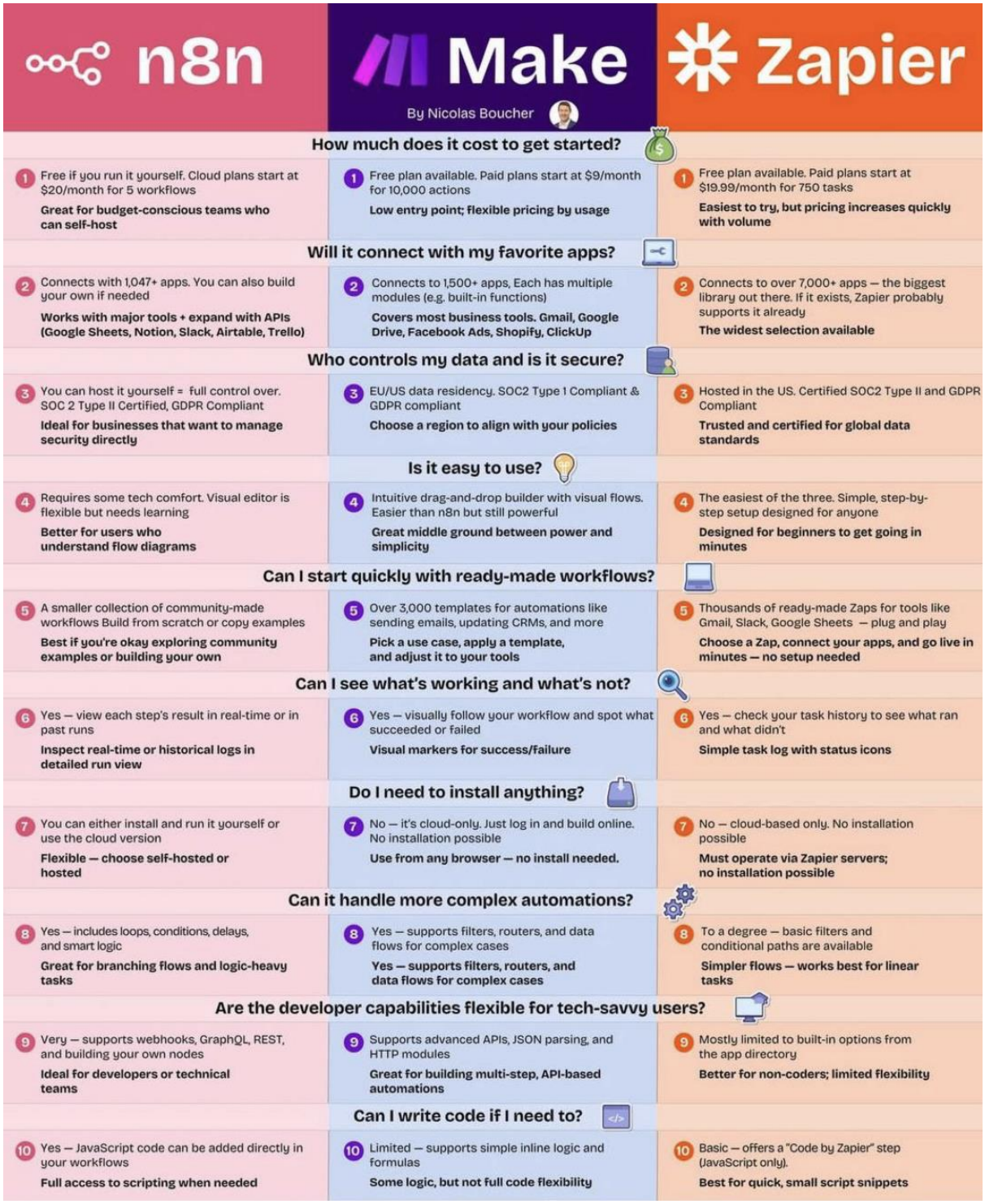
2) Triggers the n8n workflow to start execution.

So, during this step of the n8n project, we've created a form, that will allow to minimize the portion of failed workflow executions, and a logic of nodes that convert Excel Google Sheets, so that employees have less factors to think about when using this piece

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. Workflow Automation Software – a Competitive Analysis

by Gurgen Gurgenyan, ATG



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