Handbook for Developers and Consultants on SAP Build - Part 3

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Abstract: *SAP Build offers a range of user-advanced tools to speed up app development and automation using smart AI technology. It lets users quickly build, enhance and automate apps, with drag-and-drop functions and AI-powered coding support. The platform makes it easy to expand applications by providing to-use connectors and business content for systems, not just SAP. Moreover, SAP Build promotes teamwork between business and development teams through integrated governance and lifecycle management features. Its main highlights include creating apps with both drag-and-drop methods and advanced coding techniques using AI assistance for coding tasks extending SAP and third-party apps rapidly and ensuring access, to SAP app data through pre-built authentication methods.*

Keywords: Low-code and no-code (LCNC), Citizen Development, SAP Build.

1. Introduction

Low-code and no-code (LCNC) refer to a new style of visual programming that enables application development without traditional programming. This approach significantly lowers the barrier to entry for anyone interested in developing applications.

Low-code combines traditional programming environments with no-code platforms, catering to developers with at least basic technical knowledge. It offers a hybrid approach, utilizing both coding and visual development tools.

No-code, on the other hand, replaces traditional programming languages with visual development tools, such as drag-and-drop components. This straightforward approach is accessible to both technical and non-technical individuals, including citizen developers.

2. Configuring SAP Process Automation in SAP BTP

Set up an account, for development purposes using SAP Build Process Automation. Start by selecting the Create option within your account click on the Create Subaccount button to bring up a new window. Next, input a name for your subaccount. Note that the Subdomain will be generated

Citizen development addresses the current gap in technical expertise, particularly the shortage of experienced professional developers, by empowering non-technical users to create applications.
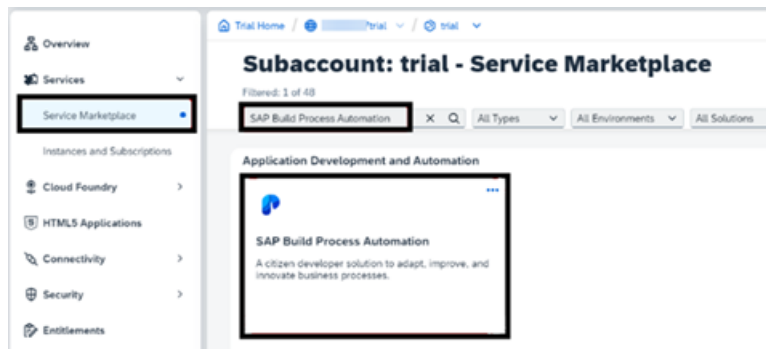
SAP Build's Low-Code portfolio merges no-code and low-code solutions, enabling users of all skill levels to easily create and enhance business applications. It allows business experts to build with drag-and-drop simplicity, integrate with SAP and non-SAP systems, and facilitate collaboration between business and development teams.

Pre-requisite: To understand this paper thoroughly prerequisite is the Handbook for Developers and Consultants on SAP Build - Part 1 and Part 2
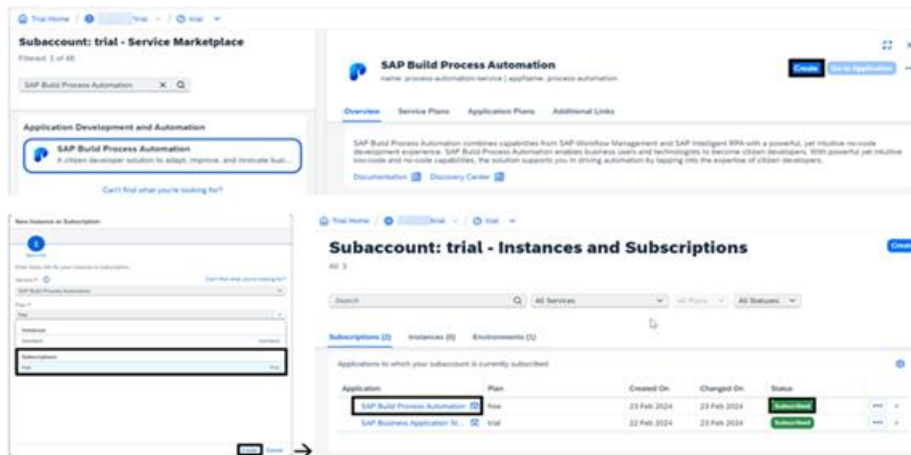
automatically. Choose a supported 'Region'. Once you've filled in all details click on Create. Alternatively, you can utilize an existing account by following the steps outlined in the guide to create a subaccount. Don't forget to include entitlement, for SAP Build Process Automation selecting either the free service tier based on your requirements. After assigning entitlements proceed with configuring the services. You can opt for using a booster tool. Set it up manually.

Subscribing to the services. Select Services > Service Marketplace. In the search field, type SAP Build Process Automation and select the tile.

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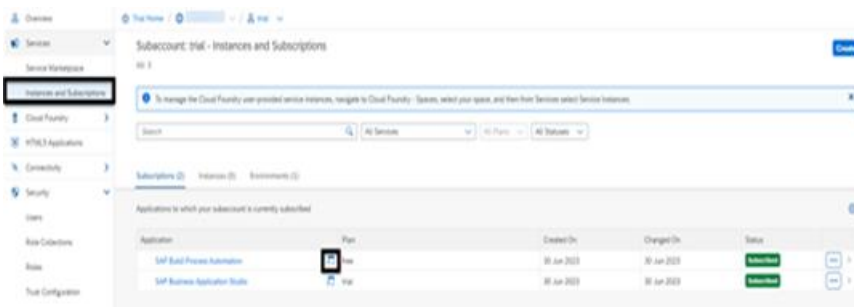Paper ID: SR24724163404   DOI: https://dx.doi.org/10.21275/SR24724163404   2537

Choose the Create button. In the New Instance or Subscription window, as Plan, choose the free subscription and select Create button. In the Creation in Progress pop-up, select View Subscription.

To grant access you need to allocate role collections to your user. Navigate to the Users section, under Security locate your user. Proceed to assign role collections. In the Role Collections area click on Assign Role Collection. In the popup window for assigning role collections search, for "process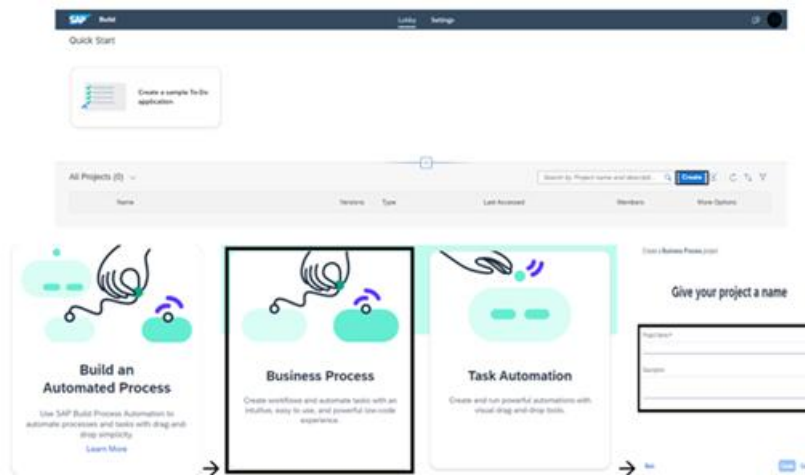" to locate Process Automation Roles. Select three roles; ProcessAutomationAdmin, ProcessAutomationDeveloper and ProcessAutomationParticipant. Click on the Assign Role Collection button. Once the roles are assigned you will be able to access SAP Build Process Automation in instances and subscriptions as shown in the screenshot.

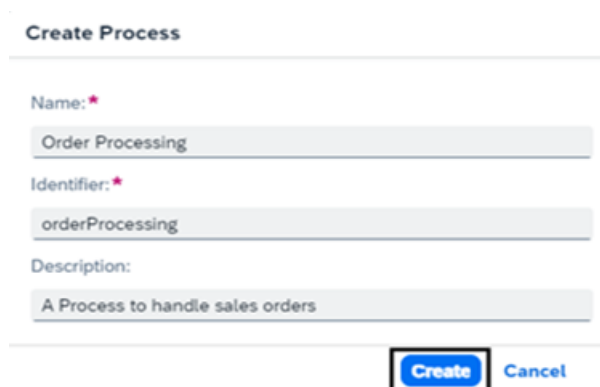

3. Automating Processes with SAP Build Automation

Creating a project: Click on the "Create" button as indicated in the screen. A window will appear with three choices; Create an Application Create a process and Create a business site. Select the option to Build a process as displayed in the screenshot. Next you will be presented with options, like web and mobile application and application backend; we will opt for the web and mobile application to develop a front end application. In the following window you will need to enter a project name and brief description; select a project name provide a description and then click on "create."

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Starting a business process; When working on a project you have the option to establish a process. This process mirrors a workflow commonly seen in business settings. Within this process you can incorporate elements such, as forms, decisions and automation. Upon creating the project a new tab will open to facilitate the creation of the process. In the dialogue box, for creating the process you need to input a Name and Description for your process. Finally select Create to proceed.

Create and Configure Forms: Tasks are a part of any business process. SAP Build Process Automation helps you to create forms that are made available to the business users in their inboxes to take relevant action. These interactive forms can be created by dragging and dropping the text elements and input fields into the canvas. Once a form has been created, it can then be used as a process trigger to start the process or added as an approval step in the business process.

Create a form to trigger a business process: you will create a trigger form that will start the business process. For that, you have to open your process in the process builder and add a new form. As explained below.

This screenshot displays the process builder now we will see the steps to add a form. Choose Add a Trigger in the Trigger settings > Choose Submit a Form > Choose Blank form > In the pop-up window for new form: Enter the Name, Enter a Description > Choose Create The form will be added as the Start Trigger.
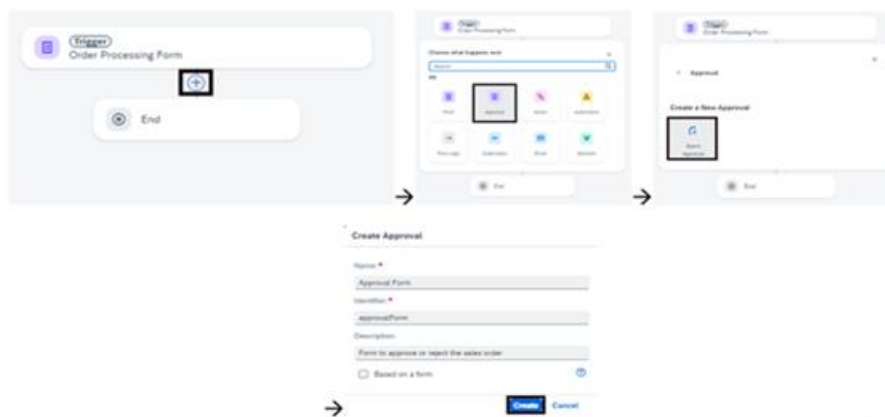
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Design the form: To design the form, choose the three dots and select Open Editor. You will now design the Form with available layout and input field options. First, drag and drop the form layout fields and enter the required names and field settings based on your requirements. The process of creation is similar to that of drag and drop process of creation of apps in SAP build apps. After the design save the form.
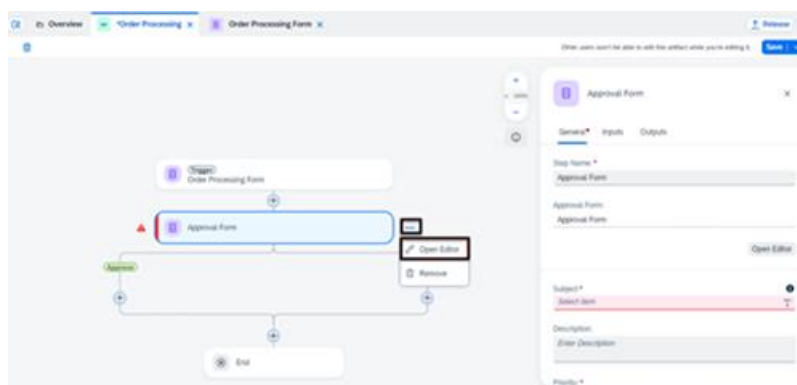

Create an approval form: The approval form will be used to get faster and easier approvals from the business users, to take informed decisions, and get rid of sending emails. These approval forms could be about approving or rejecting sales orders, invoices, onboarding, IT requests, etc. The forms are then converted into tasks in an automated workflow which will appear in the My Inbox of the user. Go to the tab, in which your business process is there and choose + below the Trigger. Choose Approval > Choose Blank Approval> In the Create Approval dialog box, do the following: In the Name field, and Description field enter your required data.> Choose Create.
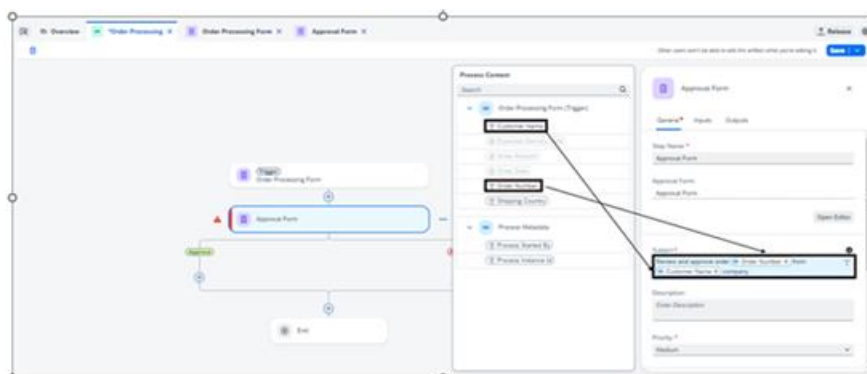

Choose Open Editor of the Approval Form> Design the Approval Form in the form builder by dragging-and-dropping fields into the form editor and configuring as per your requirement. The process of form design is similar to the one we used in trigger form.
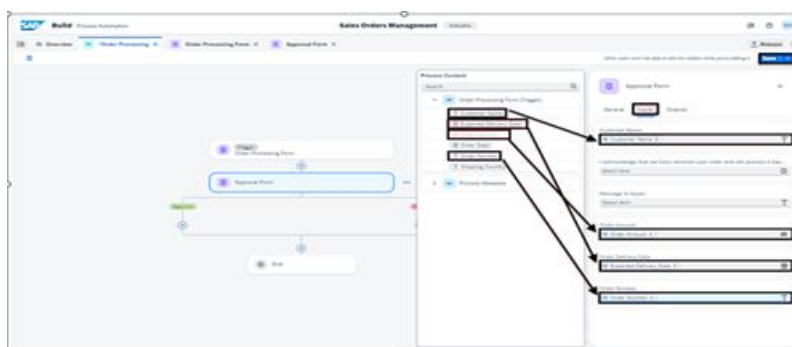
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Configure an approval form: Go back to the process builder to map the process content with the form input fields > Select the Approval Form to configure the General information section. In the subject like add the subject line you can also add the mapping to the subject so that your form text can be seen here in th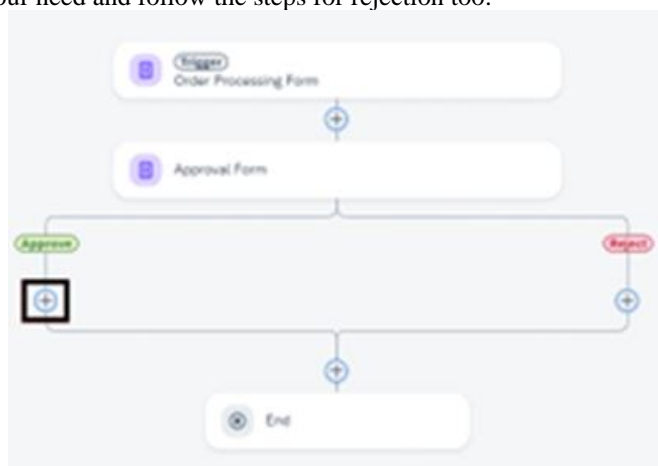e form example below. In the example, you can see the mapping done for the content of the trigger form to the subject line. This can be done simply by selecting the required field. You have to map recipients who will receive this under the user section. You can also map dates for approval duration.

Similarly, you can go to the Inputs section and map the different input fields, which were marked as read-only in the approval form, by selecting the respective Process Content entry.

Following these above process for the creation of forms, you can similarly create approval form and rejection forms. Click on + below to create the form of your need and follow the steps for rejection too.

Duplication of forms can be attained by going to the overview page there you can click on three dots and click on duplicate, adding the name and identifier.
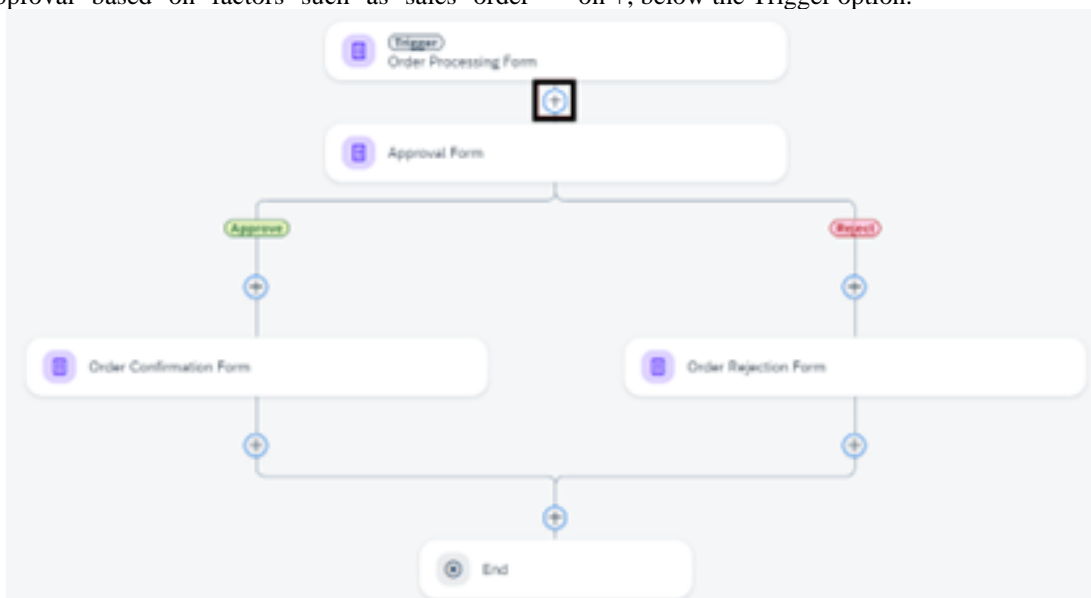

After saving you can see the complete process as in the screenshot below.

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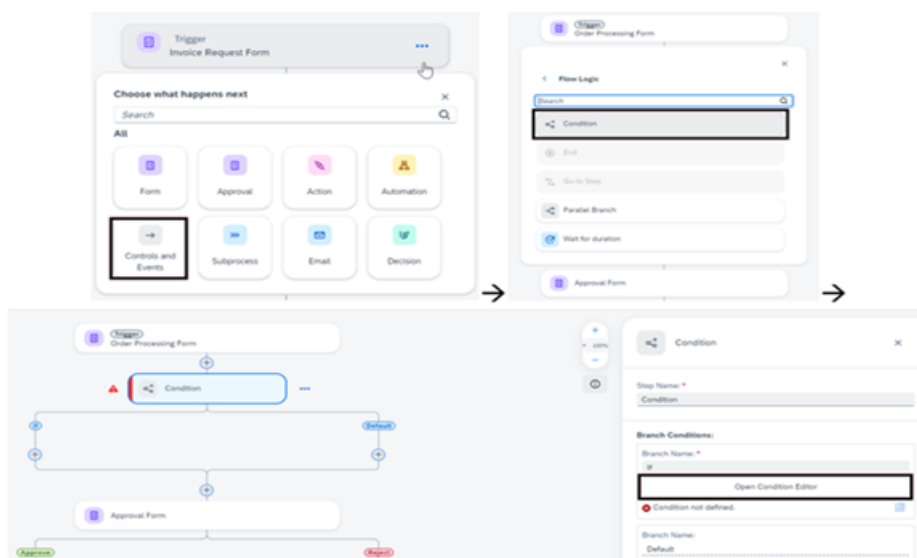
When setting up a business process you can use process conditions to make approvals more efficient by directing workflows based on criteria. These conditions, which are set up in the process builder involve applying rules like If or Else to the content of the process. They determine whether the process should go through an automated approval or a step, by step approval based on factors such as sales order information. This feature helps cut down on approvals by guiding the workflow according to established rules improving efficiency and decision making. Once you've designed the process with forms you can specify which flow should be followed depending on the if/ condition criteria. To add a condition to a process open the Process Builder. Click on +, below the Trigger option.
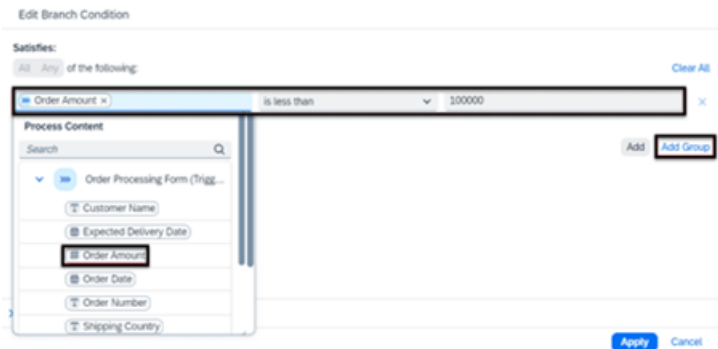

Then Controls and Events > Condition > To configure the condition, choose Open Condition Editor. Process content will contain a list of attributes.
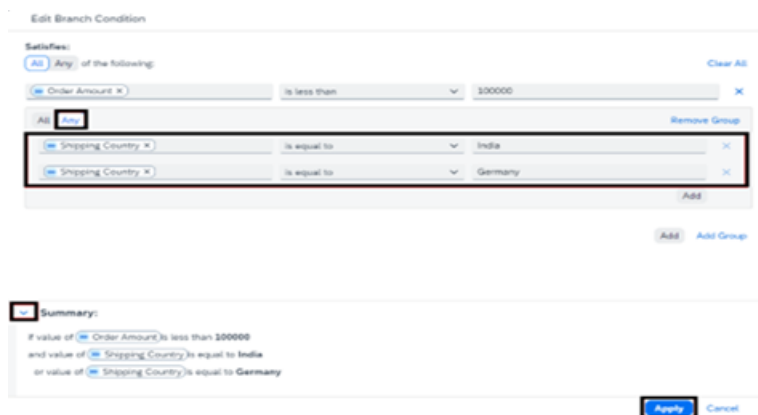
You can set conditions such as greater than, less then, or equal as developers know it from if condition in various languages this provides a similar framework. For example, you can edit the condition for adding order Amount from the process content and select less than enter 100000 as the value. Now we have Configured if branch to if the Order Amount is less than 100000.

To add one more condition. Select Add Group > In the group section select Any to make it OR conditional group > Apply.

Note: expand the Summary section to understand how the process conditions are set up. The process condition directs sales orders exceeding a specified amount, for approval while those below that threshold are automatically approved. Additionally include a notification form in the If branch to inform requesters of auto approvals and conclude the process.
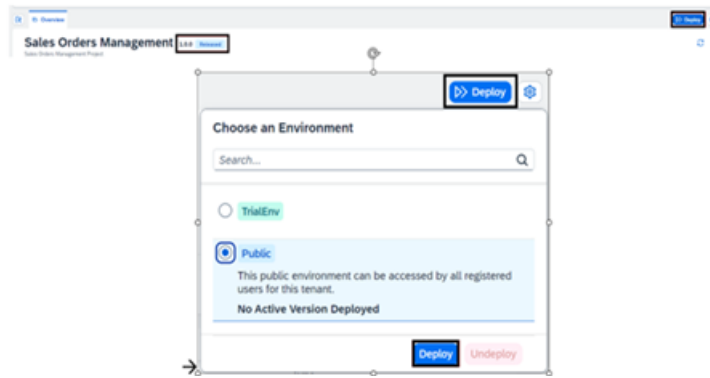
Run the Business Process; To initiate the process you must first. Deploy the business process project. Releasing a project generates a version or snapshot of the modifications. Deploying it makes it accessible at runtime, for utilization.

Only a released version of the project can be. There can be deployed versions of the same project simultaneously.

Within the Process Builder to release a project Release. If it is your release the version will commence as 1.0.0. Subsequent releases will automatically update version numbers. Versions adhere to the format x.y.z where x represents versions y indicates versions and z signifies patch numbers. Each release incrementally adjusts the version based on how changes are stored in the repository—whether they are updates, minor updates or patches.

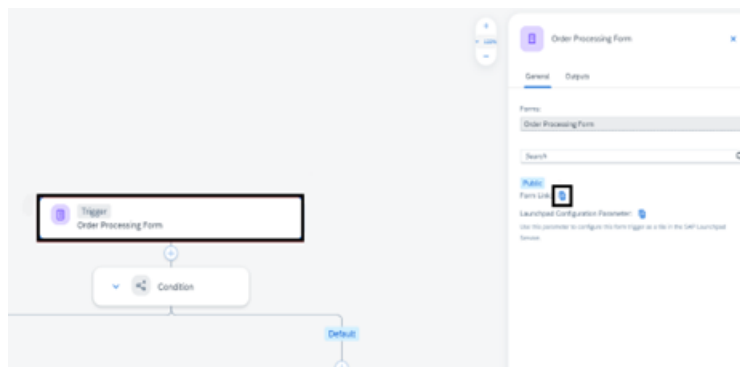
Deploy released project: Once the project is released successfully, you will find a Deploy > Choose the environment > select Deploy.

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The time it takes to deploy can vary depending on the size of the project and the complexity of the artifact usually taking anywhere from a few seconds to minutes. If there are any deployment errors they will be shown immediately in the Design Console for you to address and resolve promptly. Once deployment is successful the status will be updated accordingly. You can see all versions of your project that have been deployed or released in the project status list to the project name. Projects that have already been released or deployed cannot be edited; you will need to choose the option if you want to make changes.

To initiate the business process access the process builder, for the deployed version > select your trigger form to obtain its URL, which can then be opened directly in a web browser > Fill out. Submit the form.

4. Conclusion

This handbook serves as a guide, for developers and consultants looking to make the most of SAP Build for automating processes. We first looked into setting up SAP Process Automation in SAP BTP covering steps like entitlements setup, service configuration and integration with SAP systems. This initial setup ensures an productive automation environment.

Moving on we explored how to automate processes using SAP Build Automation highlighting its user no code features. We discussed designing, implementing and optimizing workflows and robotic processes using drag and drop tools. By utilizing these functionalities you can streamline business operations reduce work and improve efficiency.

To sum up SAP Build Automation in SAP BTP provides a foundation, for configuring and automating business processes. This handbook has equipped you with the knowledge and practical guidance to effectively utilize these tools empowering you to deliver solutions that enhance operational excellence.

Declarations

Ethics approval and consent to participate: Not Applicable

Consent for publication: All authors have consent to submit this paper to the Journal of Cloud Computing. Also, we confirm that this paper or any part of this paper was not submitted anywhere.

Availability of data and materials: Not Applicable

Competing interests: Not Applicable

Funding: Not Applicable

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