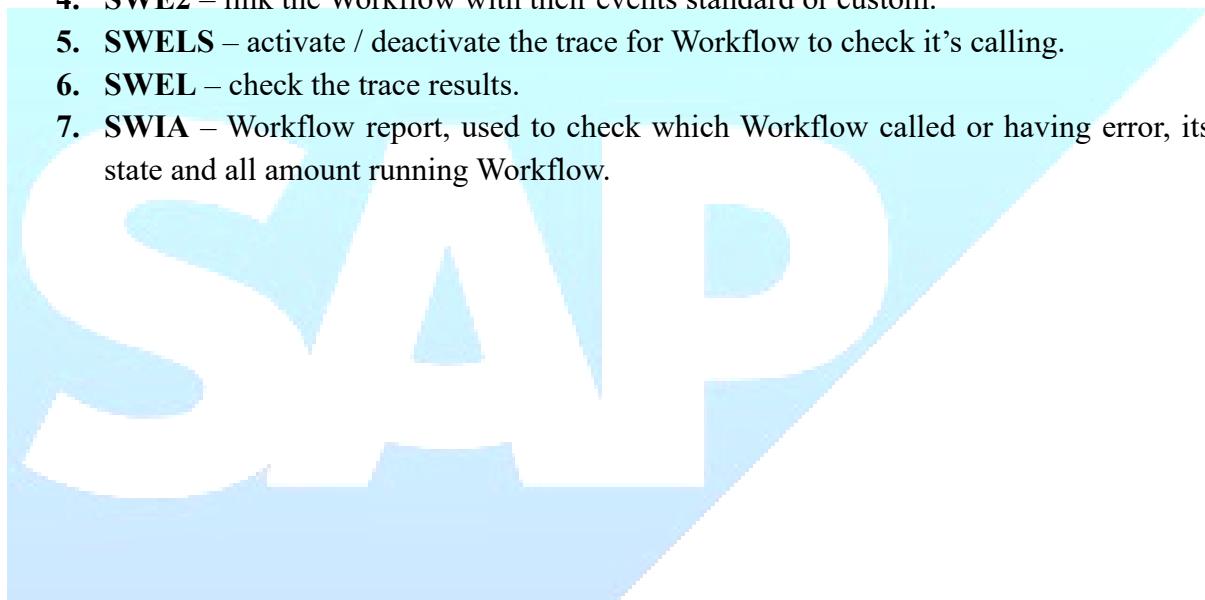


## TOPIC:

### **SAP ABAP Custom Workflow Creation and Make Copy of Standard Workflow.**

Mandatory T-Codes to remember in workflows.

1. **SWO1** – create business object.  
Make a copy of standard business object.  
Delegate copy with standard business object to use custom over standard.
2. **PFTC** – create Workflow.  
Create tasks to use in Workflow.  
Activate Workflow standard or custom.  
Edit Workflow using Workflow builder.
3. **SWDD** – Workflow builder.
4. **SWE2** – link the Workflow with their events standard or custom.
5. **SWELS** – activate / deactivate the trace for Workflow to check it's calling.
6. **SWEL** – check the trace results.
7. **SWIA** – Workflow report, used to check which Workflow called or having error, its state and all amount running Workflow.



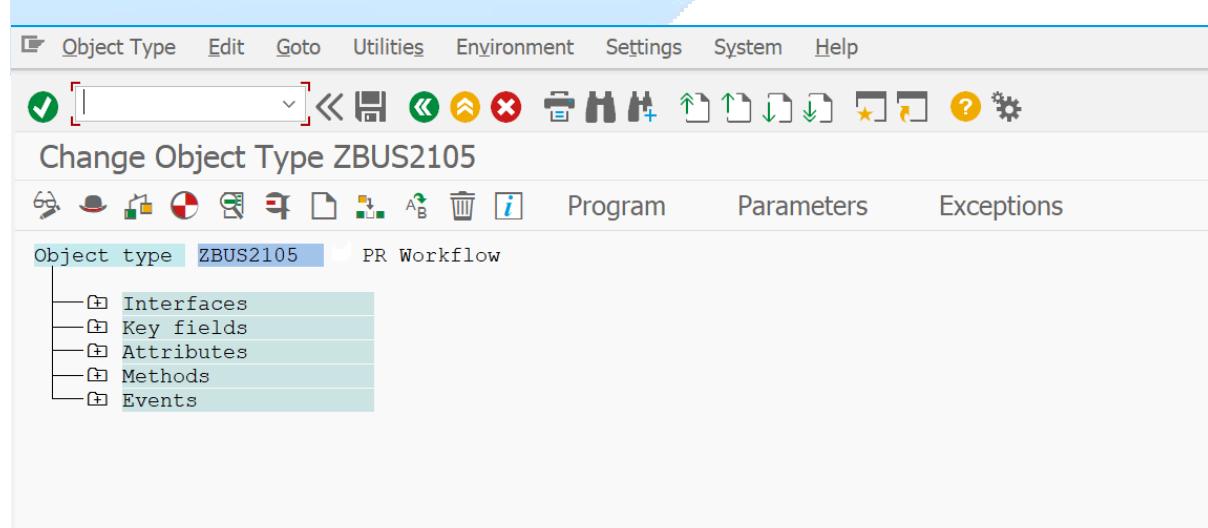
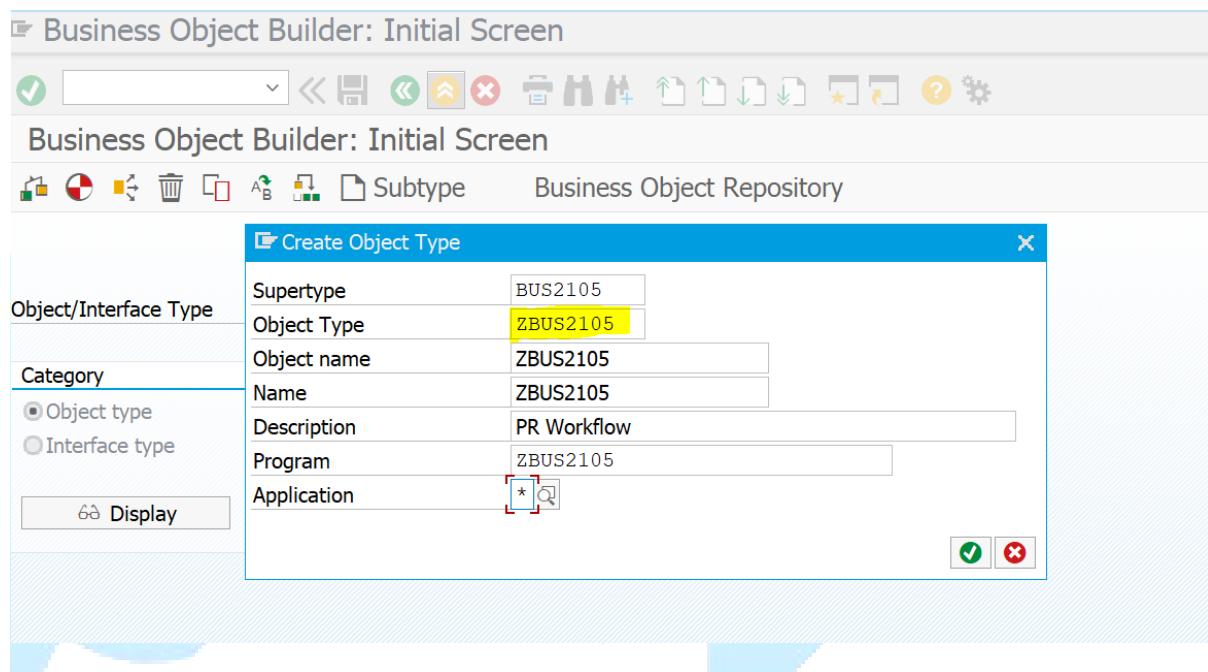
## **Workflow Scenario:**

When a PR is created or changed or cancelled a Workflow will call. We will maintain approvers in custom table with hierarchy level 1,2,3 and so on. The Workflow will send approval request to maintain users one by one.



## Step 1:

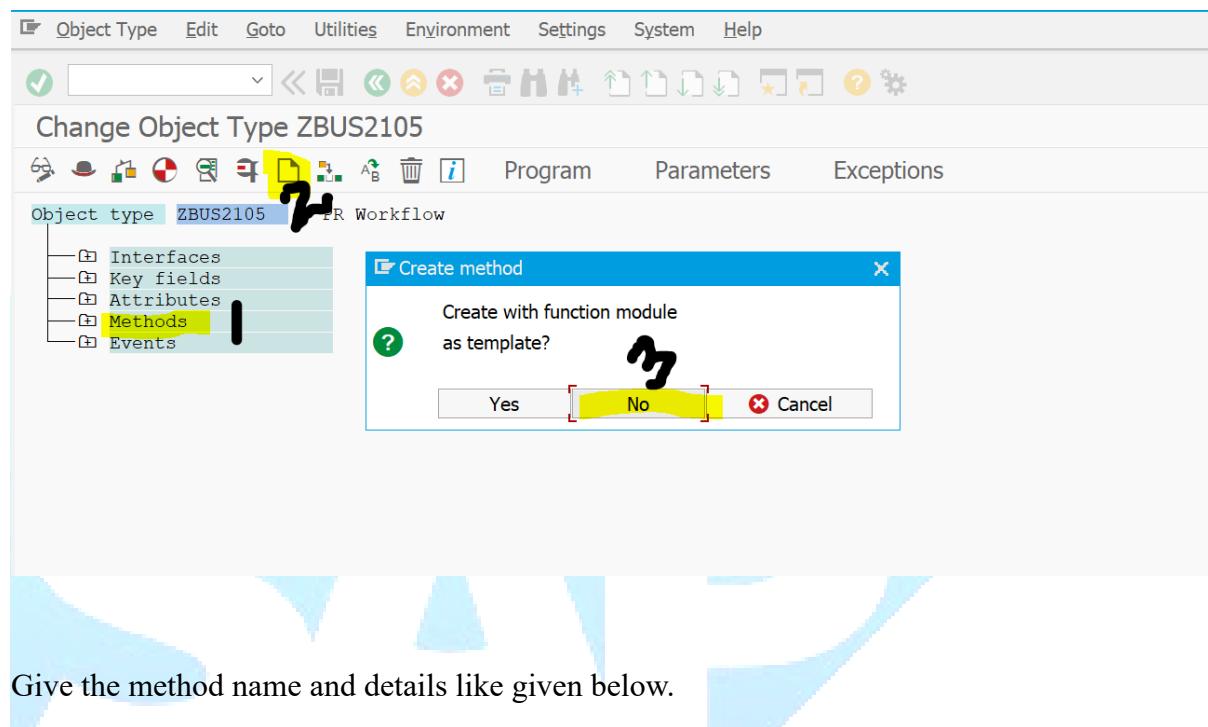
1. Create a copy of pr business object BUS2105.
2. Go to T-Code **SWO1** and click on create button.
3. Fill the fields as given below. Enter the standard Workflow in first field and other will be custom choose by developer.
4. Hit enter or OK button to final the first step.



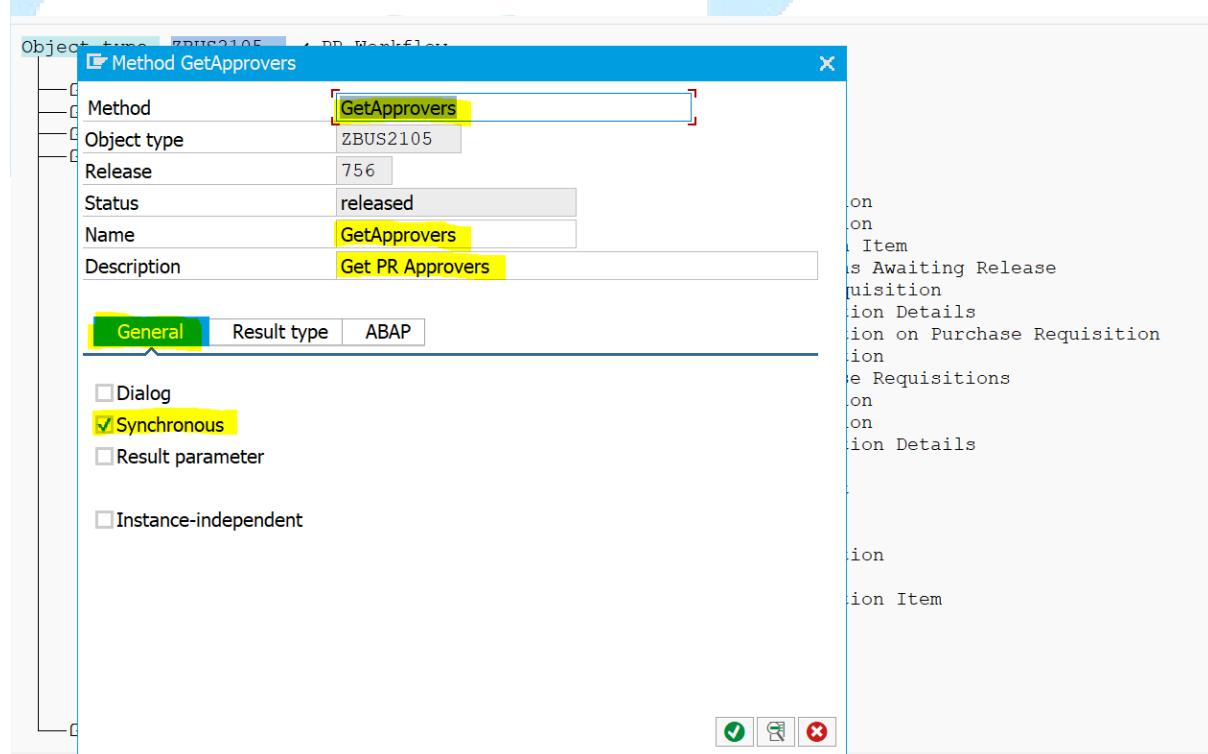
## Step 2:

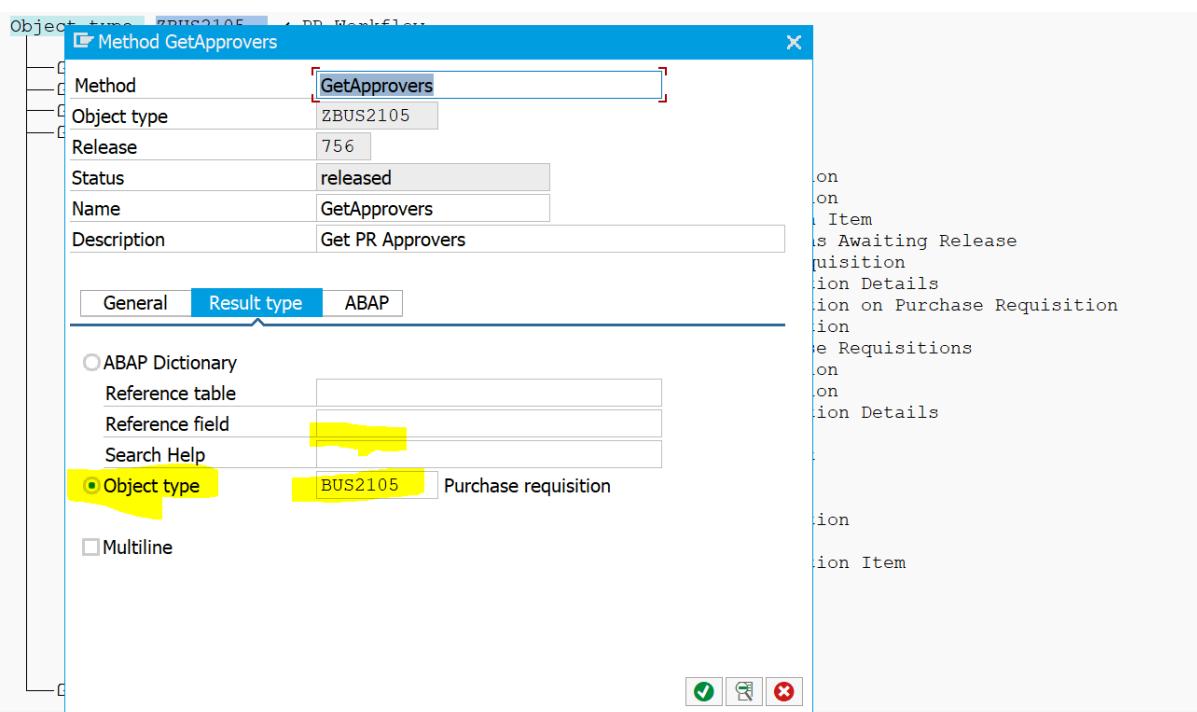
We will create method to get approvers from our custom table first.

1. Click on methods.
2. Click on create button and select no (we do not have already defined method so we will be creating here).



Give the method name and details like given below.





Hit enter or OK button finalize step 2.

### Step 3:

A new function is added.

The screenshot shows the SAP ALE Workbench interface. The top bar indicates the object type is ZBUS2105 and the PR Workflow. The left sidebar lists 'Interfaces', 'Key fields', 'Attributes', and 'Methods'. The 'Methods' section contains a long list of functions, many of which are highlighted in red. One function, 'ZBUS2105.GetApprovers', is highlighted with a yellow box. To the right of the list is a detailed description of each function's purpose.

Function	Description
ZBUS2105.CreateFromData	Create Purchase Requisition
ZBUS2105.Change	Change Purchase Requisition
ZBUS2105.GetItems	Read Purchase Requisition Item
ZBUS2105.GetItemsForRelease	List Purchase Requisitions Awaiting Release
ZBUS2105.Delete	Delete/Close Purchase Requisition
ZBUS2105.GetDetail	Display Purchase Requisition Details
ZBUS2105.GetReleaseInfo	Detailed Release Information on Purchase Requisition
ZBUS2105.Release	Release Purchase Requisition
ZBUS2105.ResetRelease	Cancel Release of Purchase Requisitions
ZBUS2105.CreateFromData1	Create Purchase Requisition
ZBUS2105.Changel	Change Purchase Requisition
ZBUS2105.GetDetail1	Display Purchase Requisition Details
ZBUS2105.SingleRelease	Individual Release
ZBUS2105.ExistenceCheck	Check Existence of Object
ZBUS2105.Display	Display Object
ZBUS2105.InfoReleaseReset	Info: Release Cancelled
ZBUS2105.Edit	Process Purchase Requisition
ZBUS2105.InfoReleaseRejected	Info: Release Refused
ZBUS2105.EditAsync	Process Purchase Requisition Item
ZBUS2105.InfoReleaseEffectuated	Info: Release Effectuated
ZBUS2105.Confirm	Confirm Input (ARL)
ZBUS2105.DisplayErrorLog	DisplayErrorLog
<b>ZBUS2105.GetApprovers</b>	Get PR Approvers

Add the parameters for our function.

Click on function and click on parameters button as shown below.

This screenshot is similar to the one above, showing the SAP ALE Workbench interface for object type ZBUS2105. The 'Parameters' tab is selected in the top navigation bar. The 'Methods' list includes the newly added 'ZBUS2105.GetApprovers' function, which is highlighted with a yellow box. A large yellow '2' is overlaid on the screen, likely indicating a step in a sequence.

We must add following parameters. Their properties are shown below.

Object Type ZBUS2105: Edit Parameters for Method GETAPPROVERS							
	Parameter	Obj. Type	First Release	Imp.	Man.	Exp.	Key
	Tab_agent	ZBUS2105	756	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Numb_appr	ZBUS2105	756	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Click on Create Button to create below Parameters.

#### Tab\_agent (Table to get Approvers)

Object Type ZBUS2105: Edit Parameters for Method GETAPPROVERS

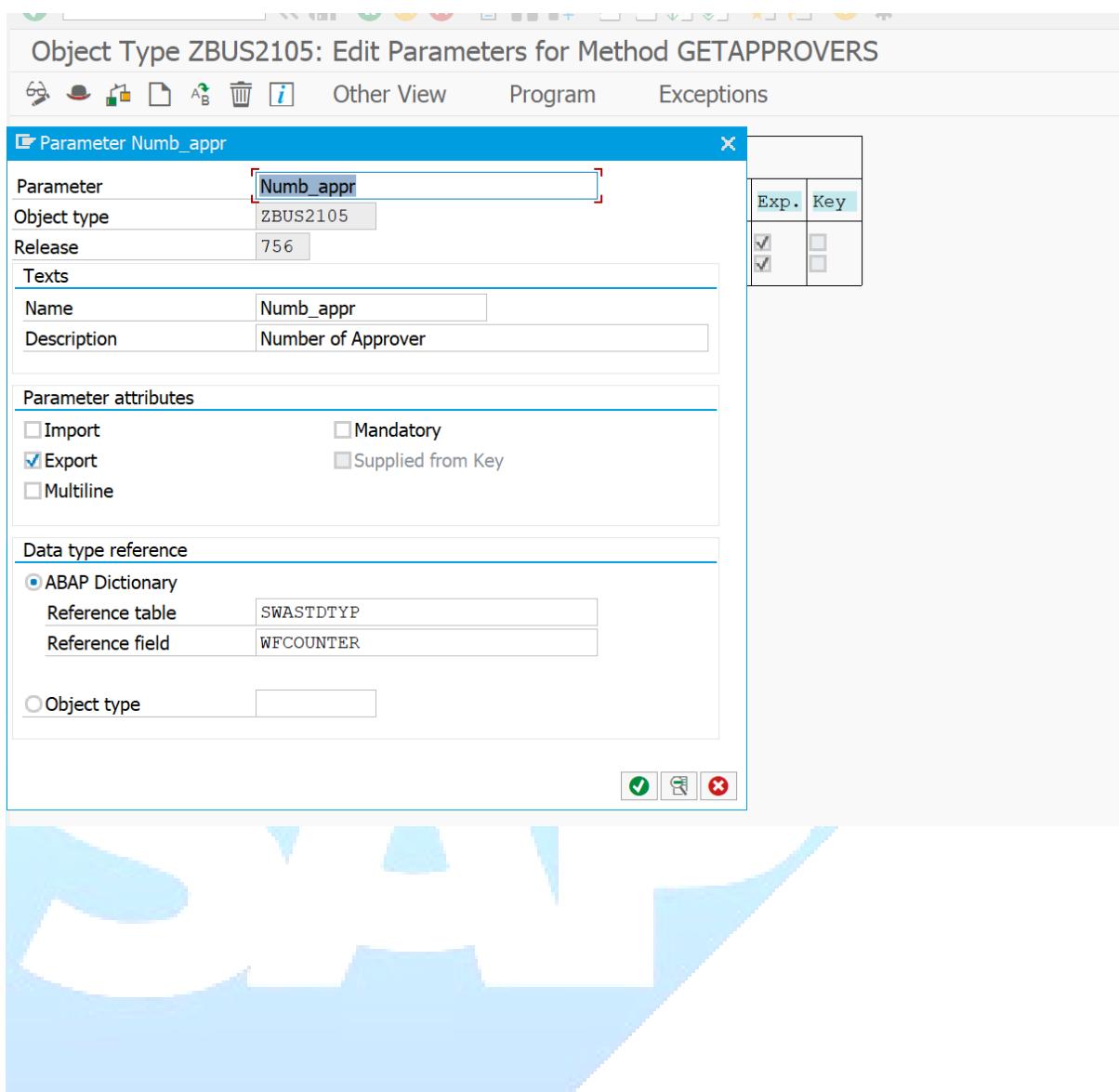
Parameter Tab\_agent

Exp.	Key
<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>

Parameter	Tab_agent
Object type	ZBUS2105
Release	756
<b>Texts</b>	
Name	Tab_agent
Description	Agents
<b>Parameter attributes</b>	
<input type="checkbox"/> Import	<input type="checkbox"/> Mandatory
<input checked="" type="checkbox"/> Export	<input type="checkbox"/> Supplied from Key
<input checked="" type="checkbox"/> Multiline	
<b>Data type reference</b>	
<input checked="" type="radio"/> ABAP Dictionary	Reference table: SWHACTOR
	Reference field:
<input type="radio"/> Object type	

✓
✖
✖

Numb\_appr (Number Of Approvers).



## Step 4:

Create Approvers Table to maintain approvers.

Fields and data type shown below.

Dictionary: Display Table

Transparent Table **ZWF\_PR\_APPROVERS** Active  
Short Description Approvers Table for Purchase Requisition

Attributes Delivery and Maintenance **Fields** Input Help/Check Currency/Quantity Fields Indexes

1 / 3

Field	Key	Init...	Data element	Data Type	Length	Deci...	Coordinate	Short Description
MANDT	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	MANDT	CLNT	3	0		0 Client
APPR_EVEL	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	INT1	INT1	3	0		0 1 Byte Unsigned Integer
APPROVER	<input type="checkbox"/>	<input type="checkbox"/>	XUBNAME	CHAR	12	0		0 User Name in User Master Record



## Step 5:

Select method and click on program button same as we clicked on parameters button.

A pop up will appear select yes for predefined code of added parameters.

Enter the following code mentioned below.

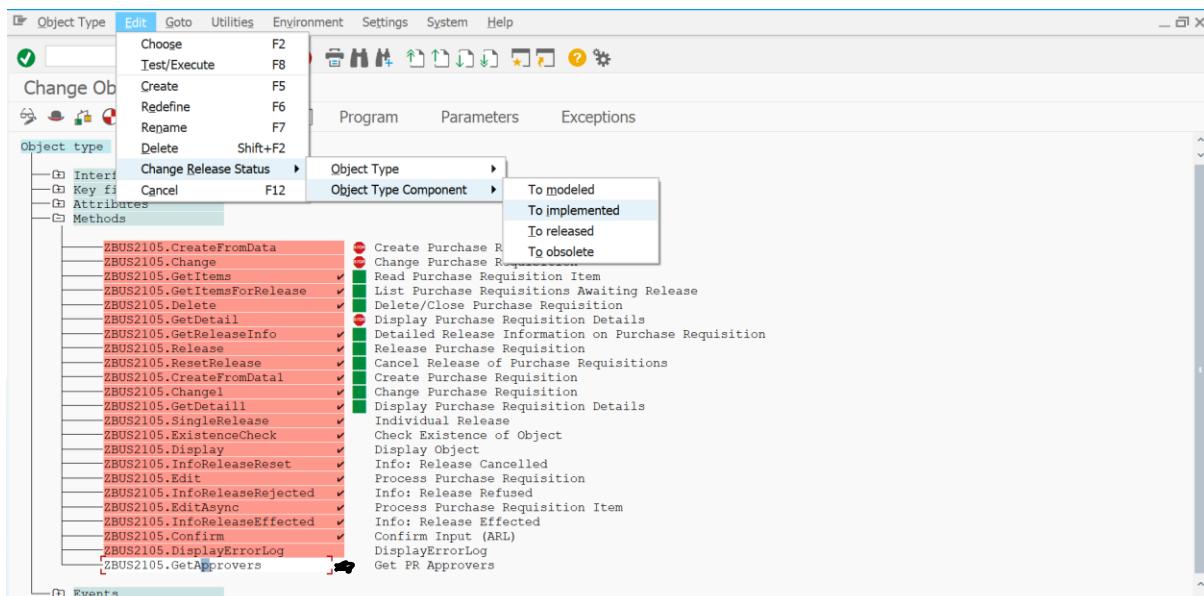
Object Type ZBUS2105 Change

Pattern Pretty Printer Text Elements

```
13 END_DATA OBJECT. " Do not change.. DATA is generated
14
15 BEGIN_METHOD GETAPPROVERS CHANGING CONTAINER.|  
DATA: TAB_AGENT LIKE SWHACTOR OCCURS 0,
16     NUMB_APPR TYPE SWASTDTYP-WFCOUNTER,
17     WA_AGENT LIKE LINE OF TAB_AGENT.
18
19
20
21 DATA: IT_MAPPER TYPE TABLE OF ZWF_PR_APPROVERS,
22       LWA_MAPPER TYPE ZWF_PR_APPROVERS.
23
24 SELECT * FROM ZWF_PR_APPROVERS INTO CORRESPONDING FIELDS OF TABLE IT_MAPPER.
25   SORT IT_MAPPER ASCENDING BY APPR_EVEL.
26
27 LOOP AT IT_MAPPER INTO LWA_MAPPER.
28
29   CLEAR: WA_AGENT.
30
31   WA_AGENT-OTYPE = 'US'.
32   WA_AGENT-OBJID = LWA_MAPPER-APPROVER.
33
34   APPEND WA_AGENT TO TAB_AGENT.
35
36 ENDOLOOP.
37
38 DESCRIBE TABLE IT_MAPPER LINES NUMB_APPR.
39
40   SWC_SET_TABLE CONTAINER 'Tab_agent' TAB_AGENT.
41   SWC_SET_ELEMENT CONTAINER 'Numb_appr' NUMB_APPR.
```

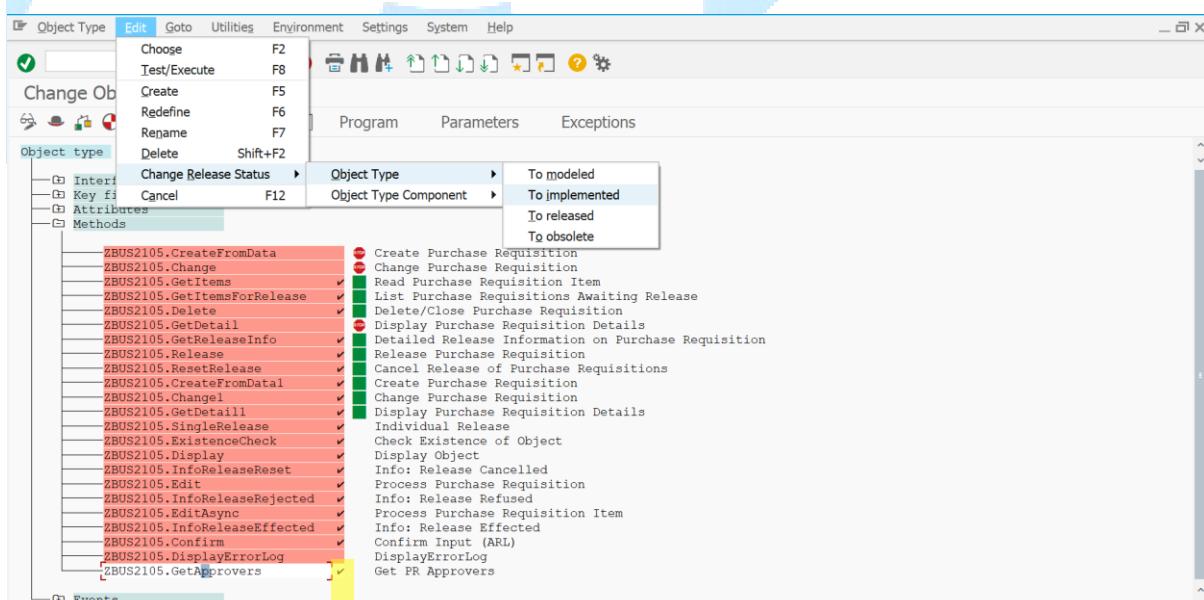
## Step 6:

1. Go to edit.
2. Select chnage release status.
3. Select object type component to make function available for use in Workflow.
4. Select Implemented.



After that repeat same step and now select released.

**Tick** will appear near function name that show function is now available for use.



Same steps follow as above.

1. Click on edit -> change release state -> object type -> To be implemented.
2. Click on edit -> change release state -> object type -> To Released.
3. Click generate button a Red and White circled button near check button.
4. Save the Business Object.

Due to this step a tick will appear near Business Object Name. That will make available the business object to use in Workflow.

Function	Description
ZBUS2105.CreateFromData	Create Purchase Requisition
ZBUS2105.Change	Change Purchase Requisition
ZBUS2105.GetItems	Read Purchase Requisition Item
ZBUS2105.GetItemsForRelease	List Purchase Requisitions Awaiting Release
ZBUS2105.Delete	Delete/Close Purchase Requisition
ZBUS2105.GetDetail	Display Purchase Requisition Details
ZBUS2105.GetReleaseInfo	Detailed Release Information on Purchase Requisition
ZBUS2105.Release	Release Purchase Requisition
ZBUS2105.ResetRelease	Cancel Release of Purchase Requisitions
ZBUS2105.CreateFromData1	Create Purchase Requisition
ZBUS2105.Changel	Change Purchase Requisition
ZBUS2105.GetDetail1	Display Purchase Requisition Details
ZBUS2105.SingleRelease	Individual Release
ZBUS2105.ExistenceCheck	Check Existence of Object
ZBUS2105.Display	Display Object
ZBUS2105.InfoReleaseReset	Info: Release Cancelled
ZBUS2105.Edit	Process Purchase Requisition
ZBUS2105.InfoReleaseRejected	Info: Release Refused
ZBUS2105.EditAsync	Process Purchase Requisition Item
ZBUS2105.InfoReleaseEffected	Info: Release Effected
ZBUS2105.Confirm	Confirm Input (ARL)
ZBUS2105.DisplayErrorLog	DisplayErrorLog
ZBUS2105.GetApprovers	Get PR Approvers

Now we can see Tick near Business Object name and Function Name.

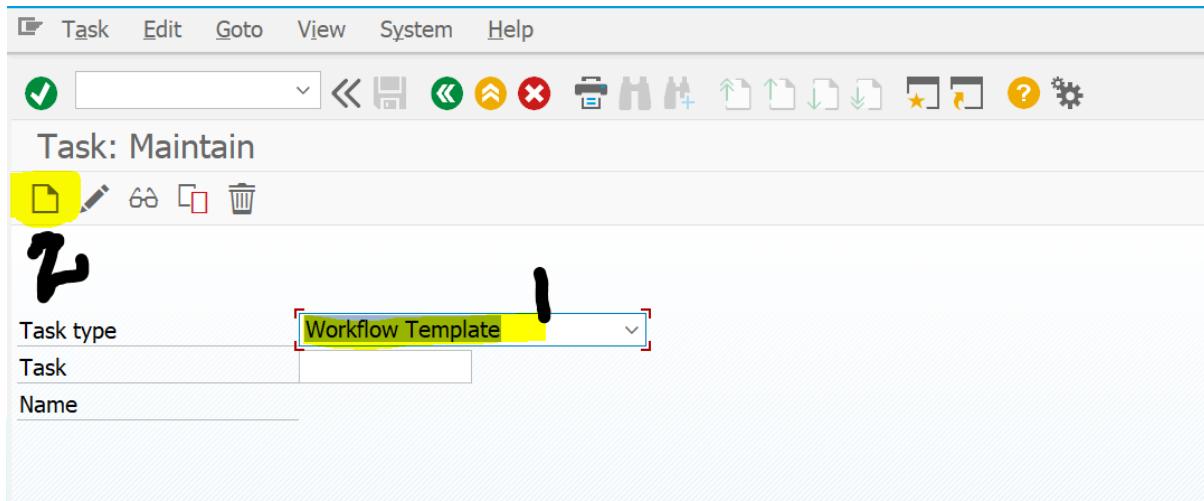
If you can see It's Perfect.

### Important Step:

Click on Delegate and add information and save.

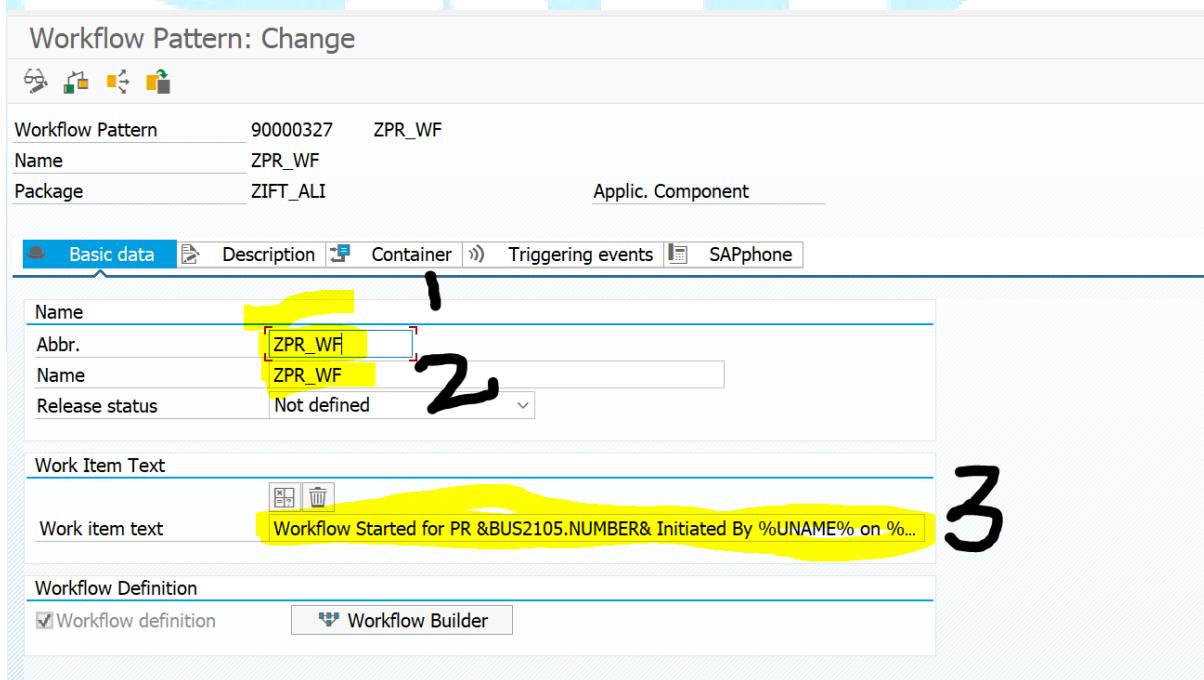
## Step 7:

1. Create workflow.
2. Go to t-code PFTC.
3. Select workflow template in task type and click create button.



Give the details as given below and click on save button or **CLTR+F3**.

Now the workflow is created.



Go to container tab and create a parameter with the name of business object (you can use any name, but type will be same).

**Workflow Pattern: Change**

Workflow Pattern 90000327 ZPR\_WF  
Name ZPR\_WF  
Package ZIFT\_ALI

Applic. Component

Basic data Description Container Triggering events SAPphone

Change Container Element

Element BUS2105  
Texts  
Name BUS2105  
Short Descript. BUSINESS OBJECT

D. Type Properties Initial Valu Change Data

SelectionOfPredefinedTypes  
Object Type BOR Object Type  
BUS2105 Purchase requisition

ABAP Dict. Reference  
Structure  
Field

ABAP Dict. Data Type

In properties check Import and Export.

Workflow Pattern 90000327 ZPR\_WF  
Name ZPR\_WF  
Package ZIFT\_ALI

Basic data Description

Change Container Element

Element BUS2105  
Texts  
Name BUS2105  
Short Descript. BUSINESS OBJECT

D. Type Properties Initial Valu Change Data

Parameter Settings  
 Import  Mandatory  
 Export

Element Is  
 Multiline  
 Transient (value is not saved at runtime)

## Step 8:

1. Go to triggering Tab.
2. Select Object Category as BOR Object Type.
3. Object Type BUS2105.
4. Event (Select for which you want to trigger your Workflow).

**Note:** These Step can be done by SWE2.

(To active Standard Workflow, You will just do this step by PFTC or SWE2)

Workflow Pattern: Change

The screenshot shows the SAP Fiori interface for managing workflow patterns. The top navigation bar includes icons for back, forward, search, and refresh. Below the title, there are fields for Workflow Pattern (90000327), Name (ZPR\_WF), and Package (ZIFT\_ALI). A 'Basic data' tab is selected, followed by tabs for Description, Container, Triggering events, and SAPphone. The 'Triggering events' tab is currently active, indicated by a blue underline. Below this, a table titled 'Standard events' lists three entries. The first two entries have checkboxes checked under 'Binding...', indicating they are selected. The third entry has an unchecked checkbox. The columns in the table are: Binding..., Object Category, Object Type, Event, and Name. The 'Event' column shows three distinct events: CANCELED, REJECTED, and RELEASESTEPCREATED. The 'Name' column lists three corresponding actions: Purchase requisition Canc..., Purchase requisition Relea..., and Purchase requisition Relea... . The background features a light blue abstract graphic.

Binding...	Object Category	Object Type	Event	Name
<input checked="" type="checkbox"/>	BOR Object Type	BUS2105	CANCELED	Purchase requisition Canc...
<input checked="" type="checkbox"/>	BOR Object Type	BUS2105	REJECTED	Purchase requisition Relea...
<input type="checkbox"/>	BOR Object Type	BUS2105	RELEASESTEPCREATED	Purchase requisition Relea...

Click save button and click on Workflow Builder.

You can go to workflow builder by SWDD.

Workflow Pattern: Change

Workflow Pattern 90000327 ZPR\_WF

Name ZPR\_WF

Package ZIFT\_ALI

Applic. Component

Basic data Description Container Triggering events SAPphone

Name  
Abbr. ZPR\_WF  
Name ZPR\_WF  
Release status Not defined

Work Item Text

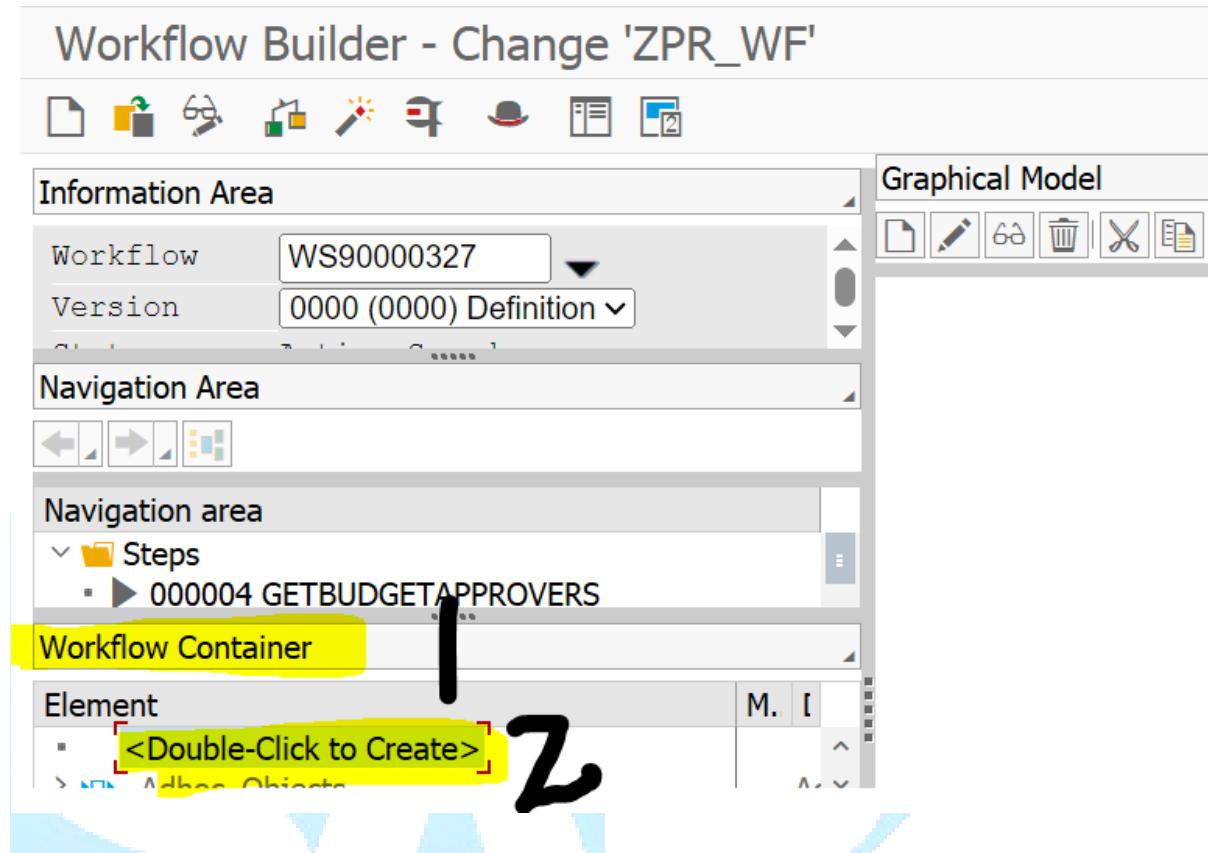
Work item text Workflow Started for PR &BUS2105.NUMBER& Initiated By %UNAME% on %...

Workflow Definition

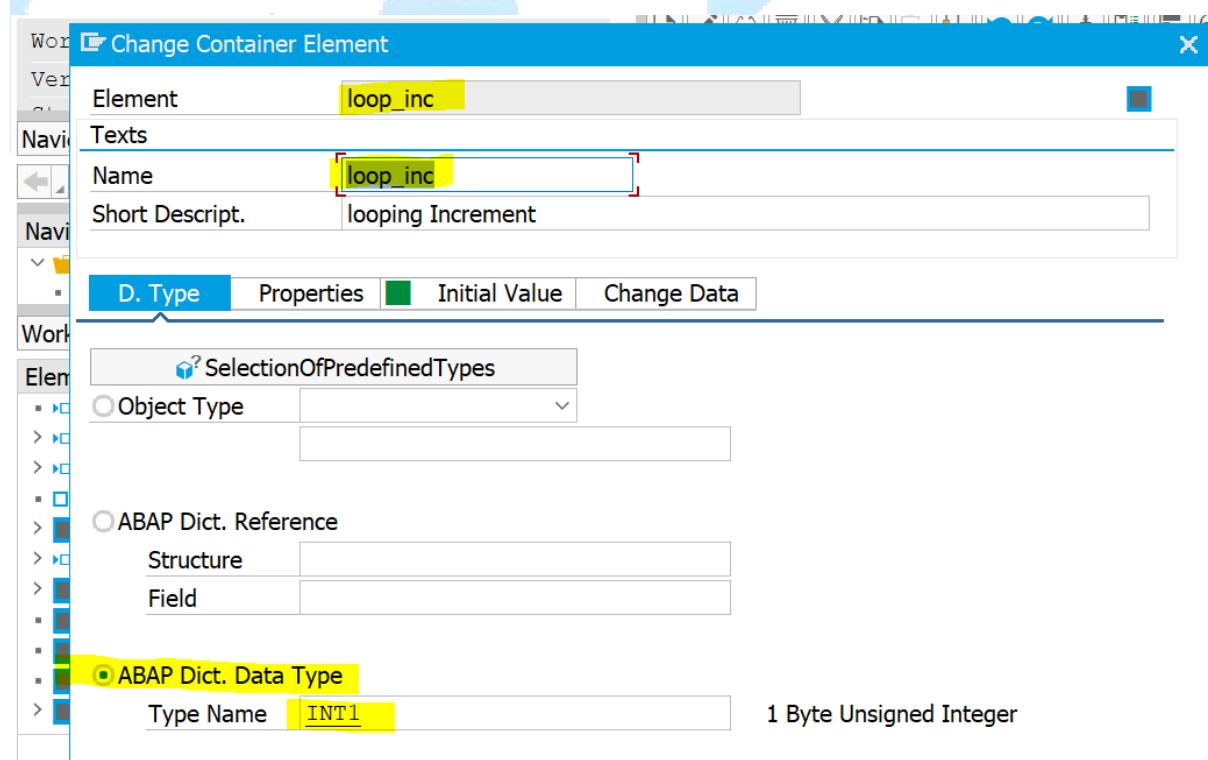
Workflow definition **Workflow Builder**

Here we must create some variables for loop and conditions.

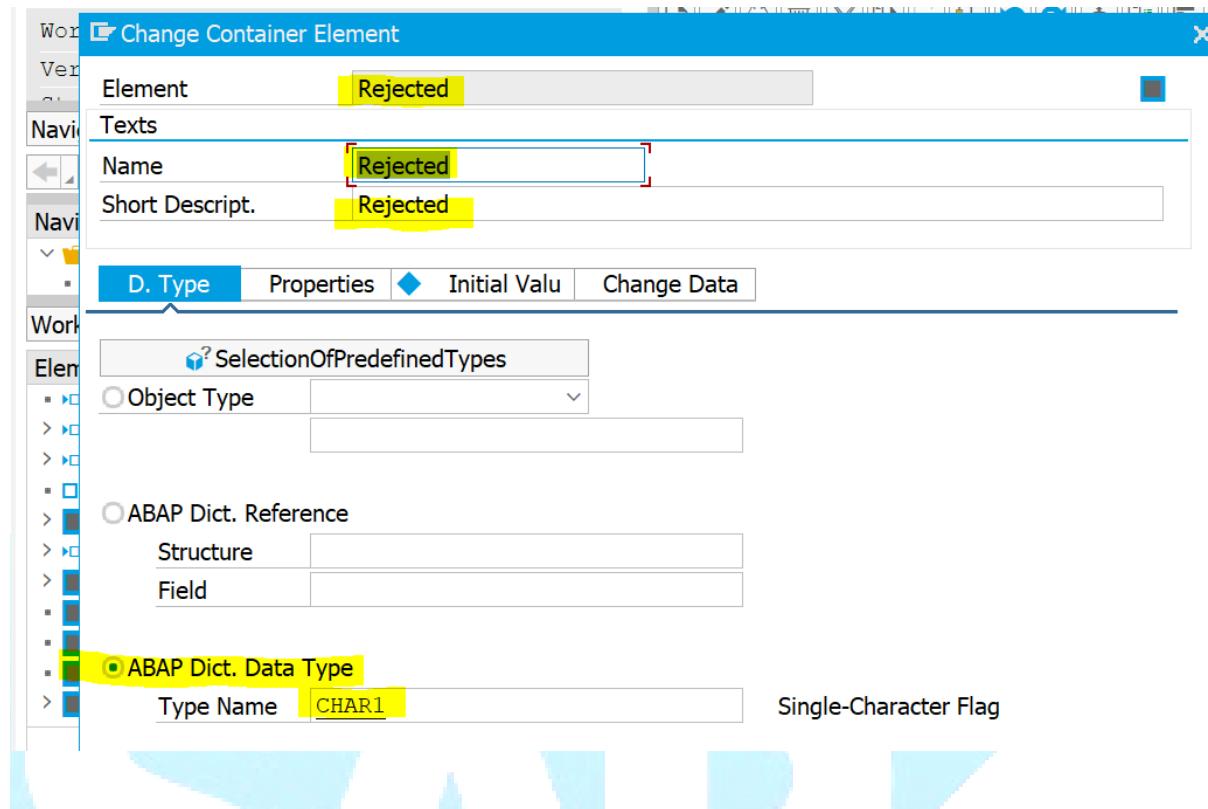
Select workflow container and double click to create variable.



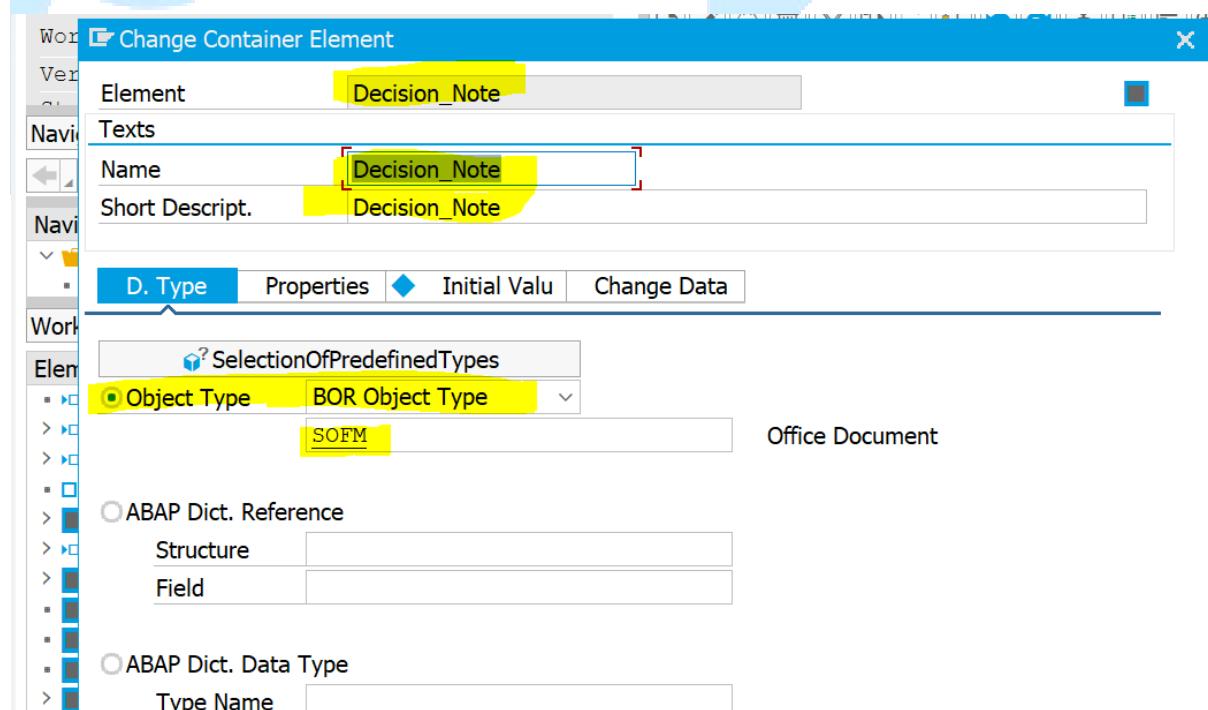
Create first variable for loop increment as given below.



By following same steps create another variable Rejected to check that approver has rejected the PR.



By following same steps create another variable decision Note to make any decision on base of condition.

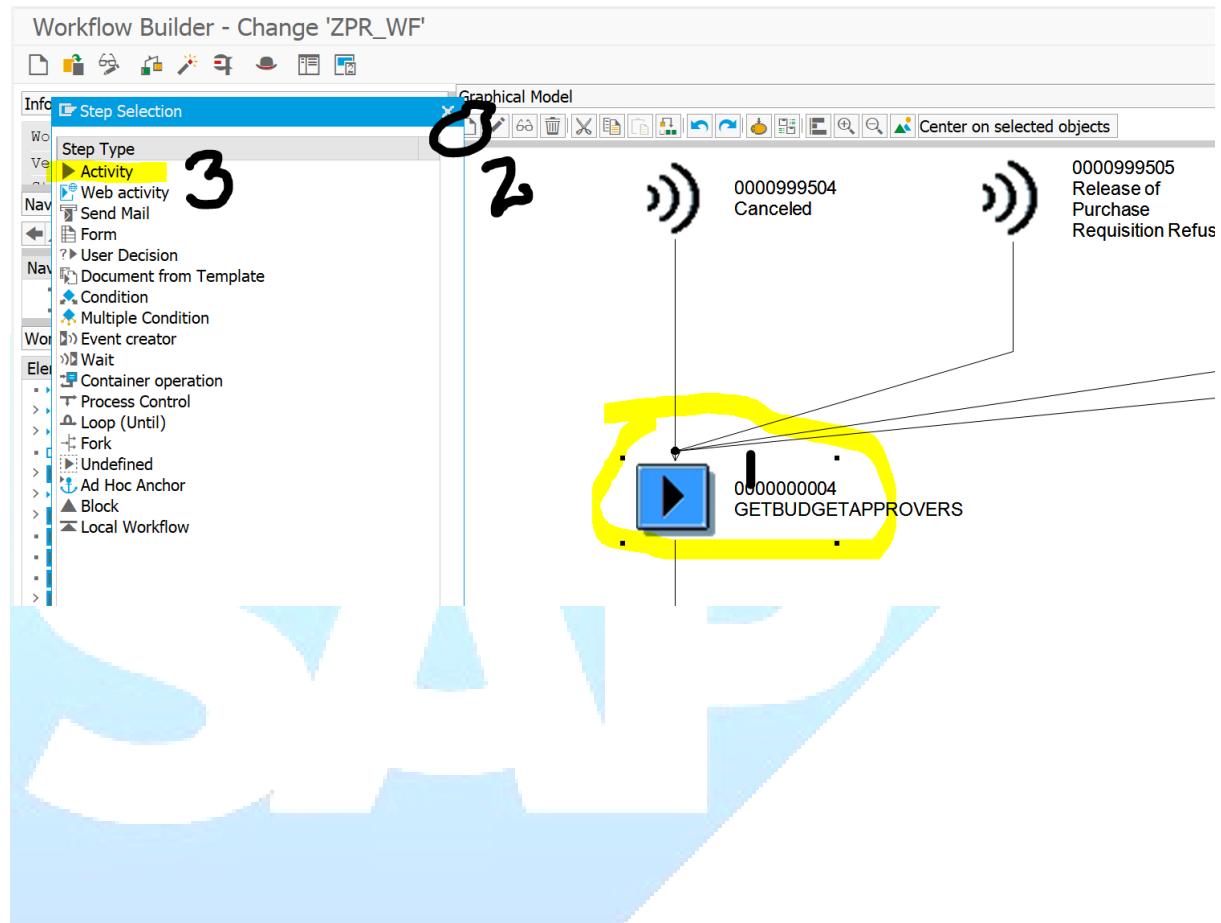


## Step 9:

It's time to start designing Workflow.

Add first activity to get approvers.

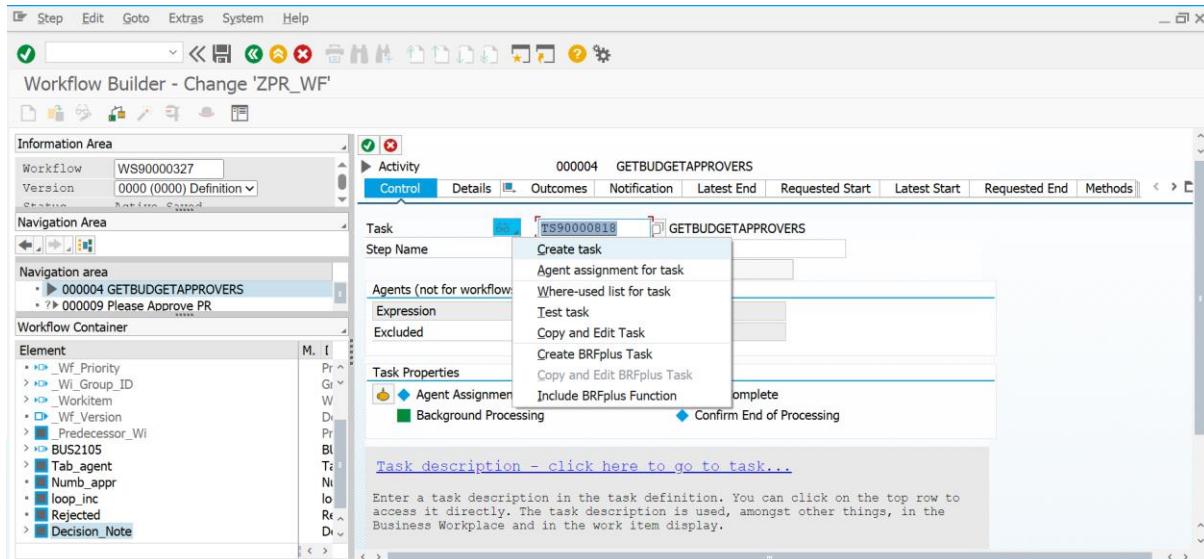
Click on select circle area point 1 and click on create button point 2 and select Activity point 3.



## Step 10:

Here we need to create Task.

Click on little arrow button near Task and select Create Task.



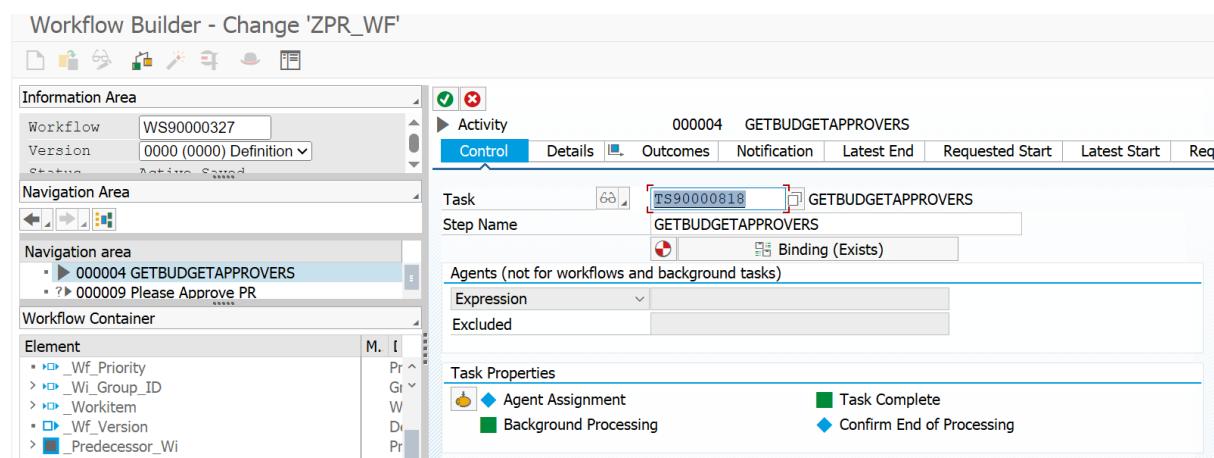
Give the following details as given below.

Note if your Business Object is generated successfully, you will be able to find your custom created function in Business Object.

The screenshot shows the 'Standard Task: Display' dialog box. The task is identified as '90000818 ZGETPRAPPR'. The 'Basic data' tab is selected, showing the following details:

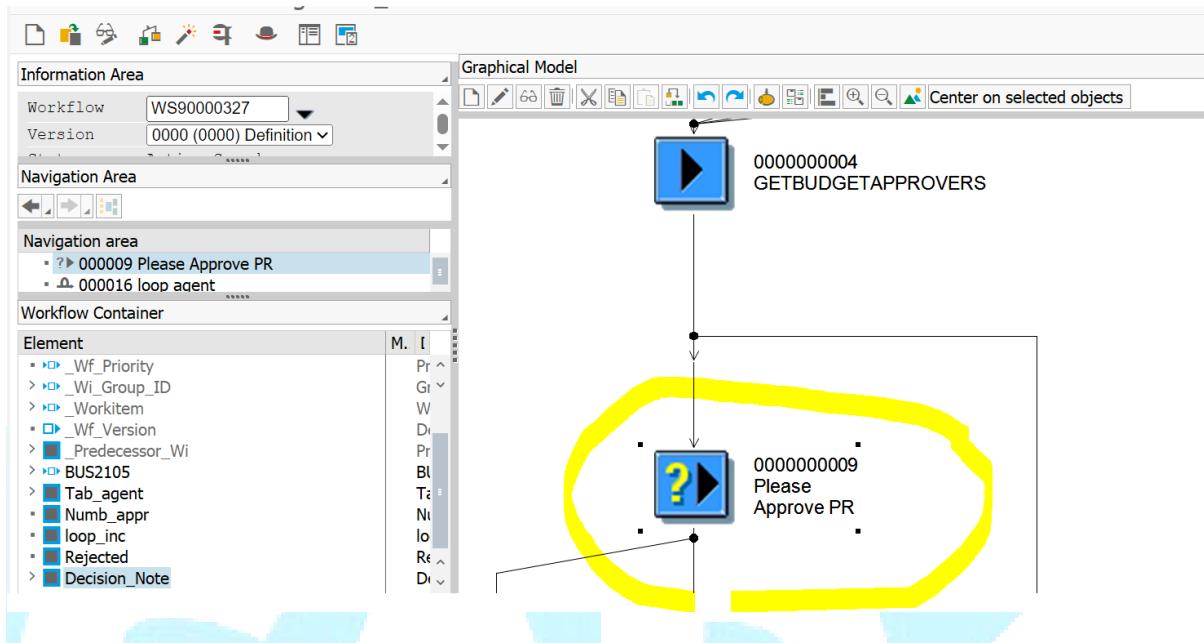
- Name:** ZGETPRAPPR
- Abbr.:** ZGETPRAPPR
- Name:** GETBUDGETAPPROVERS
- Release status:** Not defined
- Work Item Text:** Get Approvers of Purchase Requisition
- Object method:**
  - Object Category:** BOR Object Type
  - Object Type:** BUS2105 Purchase requisition
  - Method:** GETAPPROVERS
  - Execution:** Synchronous object method (checkbox checked)
  - Execution Options:** Background processing (checkbox checked), Executable with SAPforms, Confirm end of processing (checkbox unchecked)

Task has been created and added.



Now we have to add another step in Workflow.

1. To add this, click on circled area and click on create button just down the Graphical Model text.
2. Select user decision from pop up.



Add the following details given below and save the Workflow.

This screenshot shows the 'Workflow Builder - Change 'ZPR\_WF'' interface. In the 'Information Area', 'Workflow' is 'WS90000327' and 'Version' is '0000 (0000) Definition'. The 'User Decision' dialog is open, showing the following details:

- Title:** Please Release PR
- Parameter 1:** &BUS2105.NUMBER&
- Agents:** Expression: &TAB AGENT[&loop\_inc&]; Agent: Tab\_agent

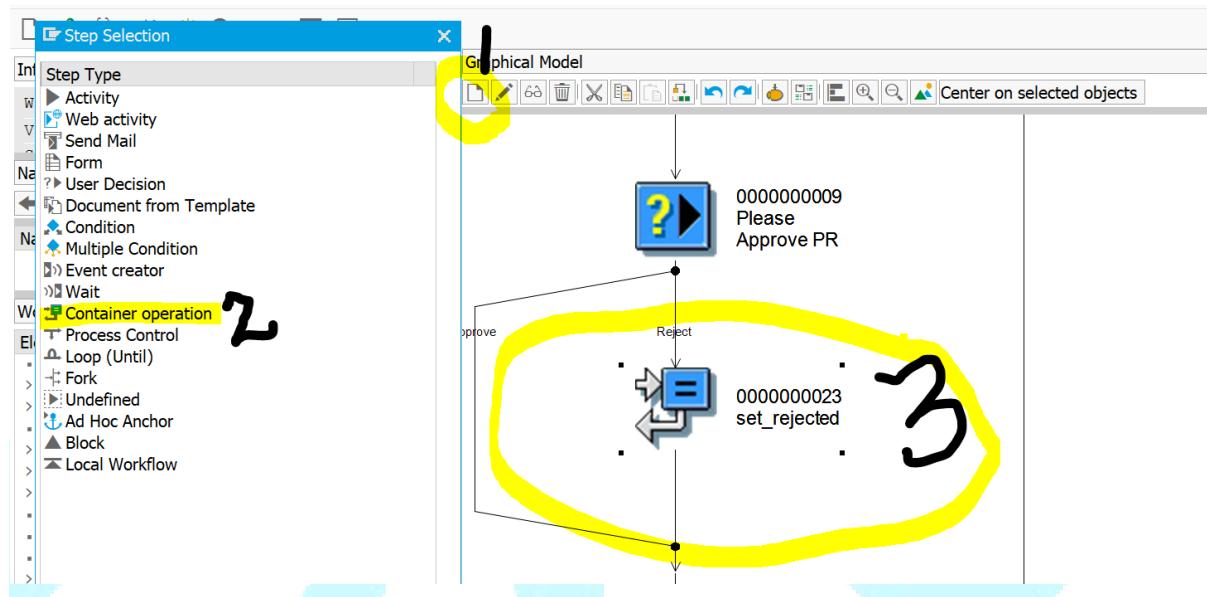
Below the dialog, the 'Decision Options' table is shown:

Decision Texts	Outcome Name	Justification
Approve	Approve	
Reject	Reject	

## Step 11:

Now we have to handle rejected case.

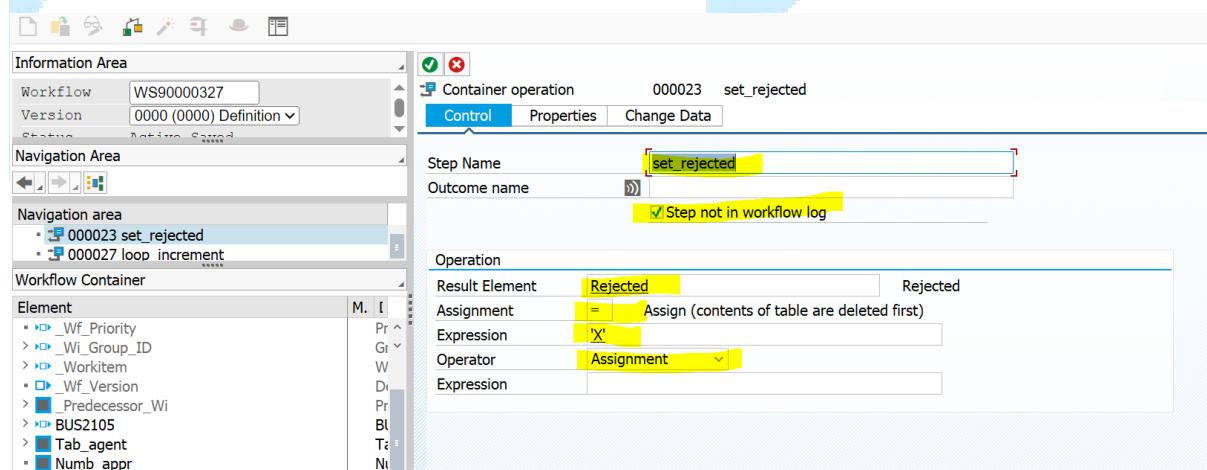
Select the circled area point 3 and click on create button point 1 and select Container Operation.



Add the following details given below.

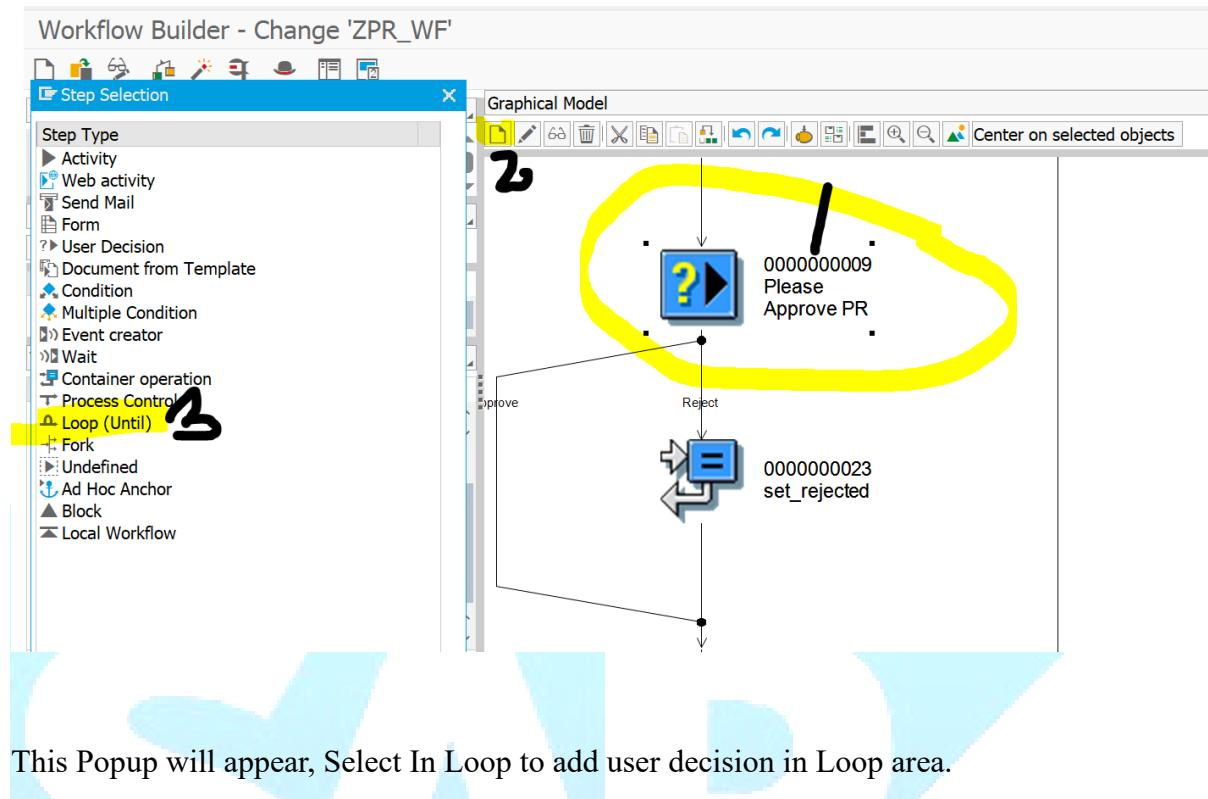
Rejected = 'X'.

It will pass X to Rejected Variable to confirms that user has rejected the PR.

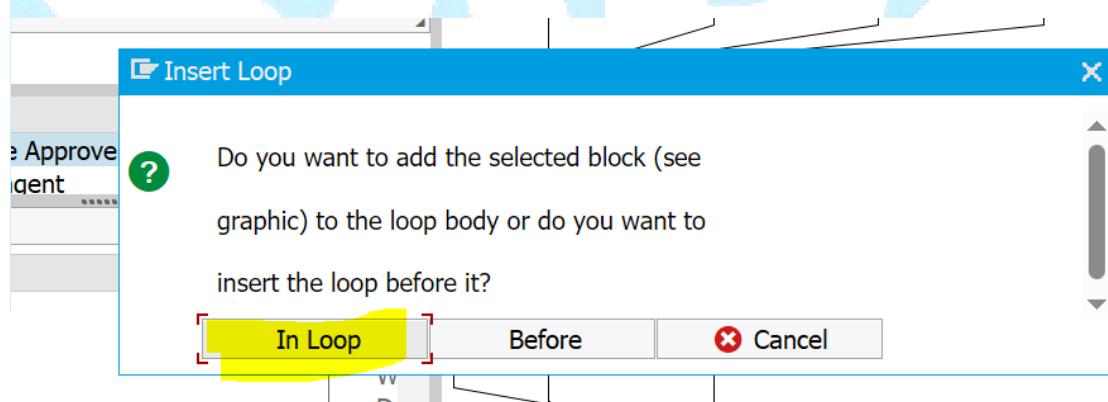


## Step 12:

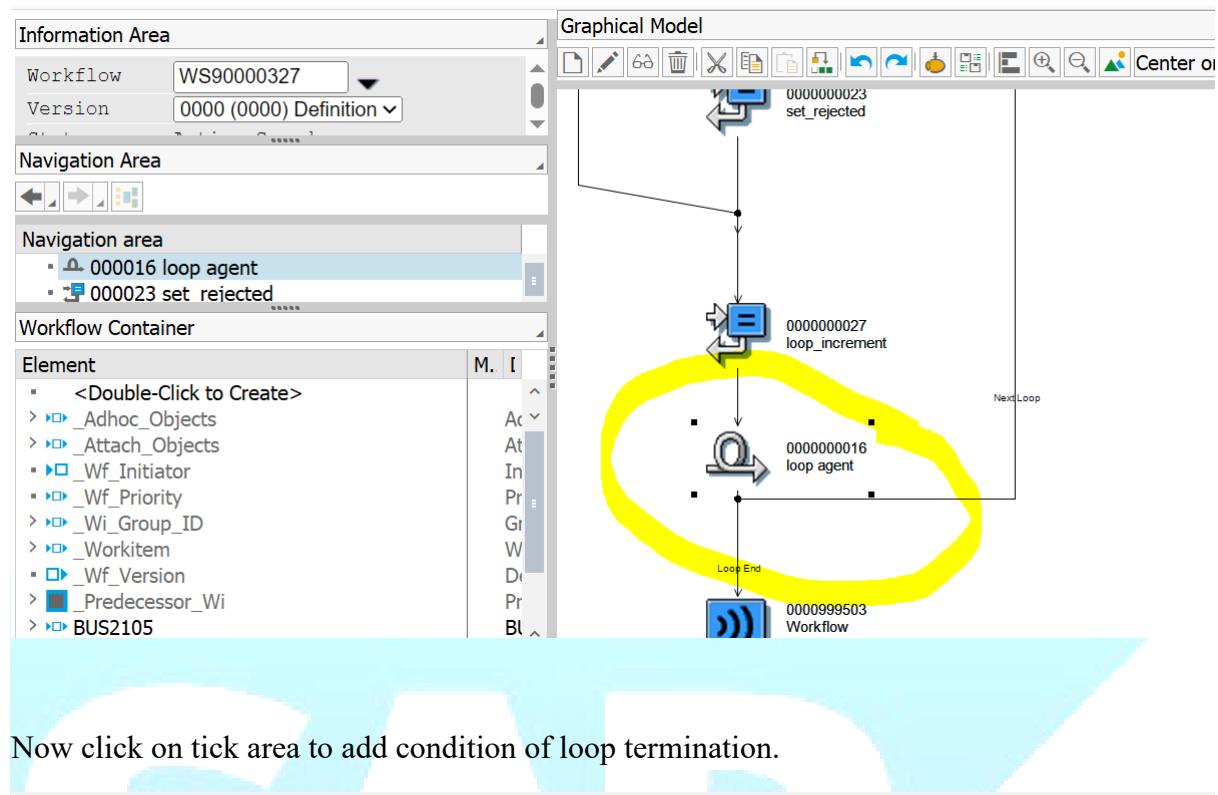
Select use decision activity and click on create button and select Loop (Until).



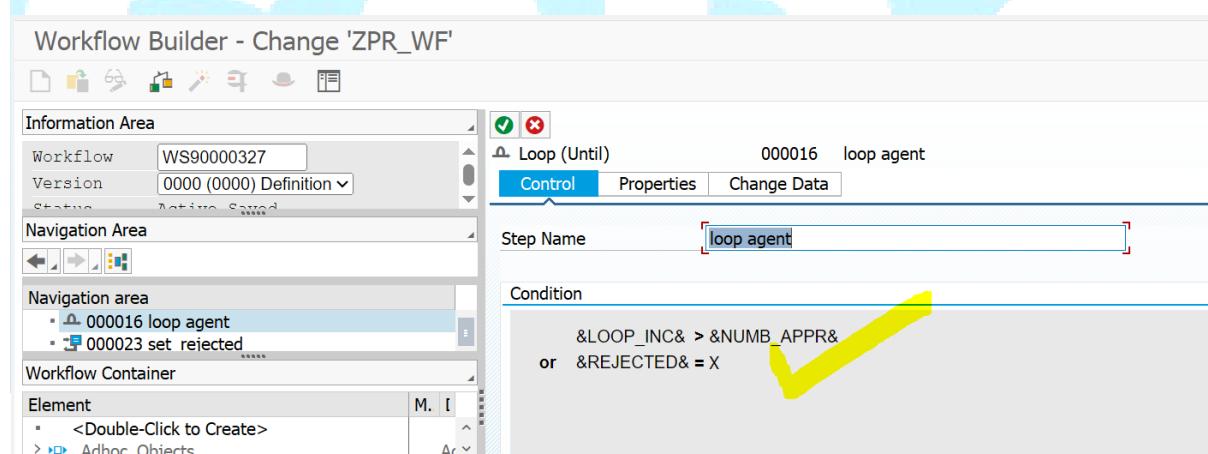
This Popup will appear, Select In Loop to add user decision in Loop area.



Double click on selected activity.



Now click on tick area to add condition of loop termination.



Add the following condition as given below.

It will terminate the loop when given condition will meet.

Operators	Logic	Expression 1	Description
= ≠ EX	And	> _Attach_Objects	Attachments of Workflow Instance
< ≥ NX	Or	▪ Wf_Initiator	Initiator of Workflow Instance
> ≤ CE		▪ Wf_Priority	Priority of Workflow Instance
[x] ≠ [x] NE		> _Wi_Group_ID	Grouping Characteristic for Workflow Instances

Constant	Condition
(...)	Not L Express. 1 -> &LOOP_INC& -> &REJECTED&
(...)	Op... R Express. 2 -> > &NUMB_APPR& -> = X
(...)	And/Or or

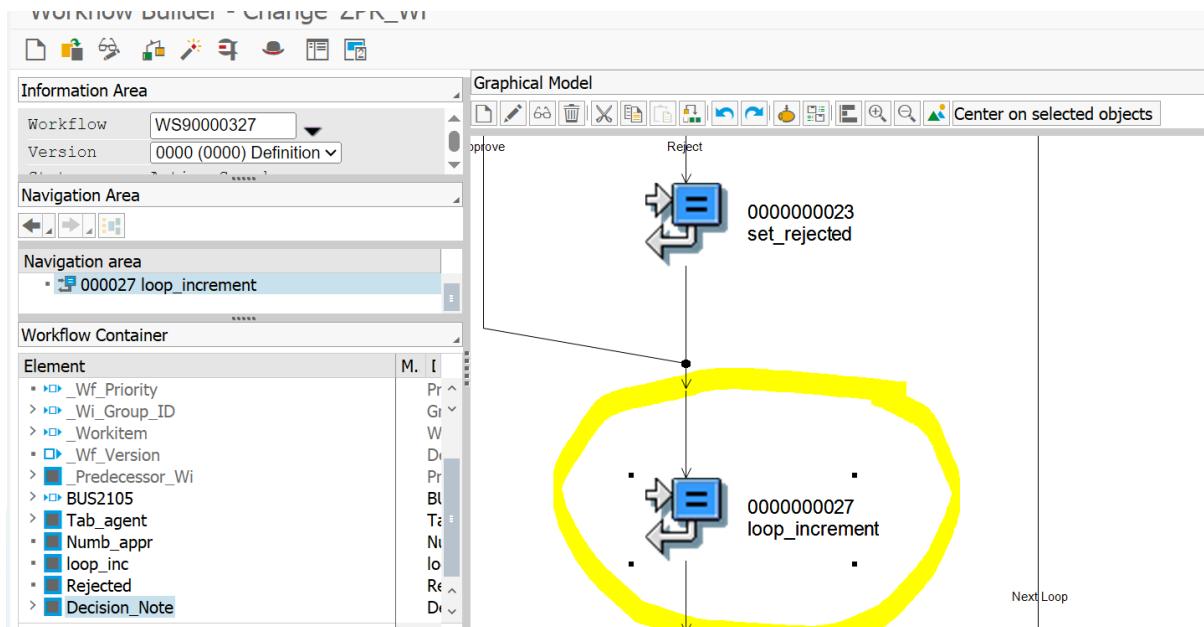
Add the last 2 lines given below.

Condition
&LOOP_INC& > &NUMB_APPR& or &REJECTED& = X

Outcomes	Name
O. Outbox True (Loop End)	Loop End
False (New Loop Pass)	Next Loop

## Step 13:

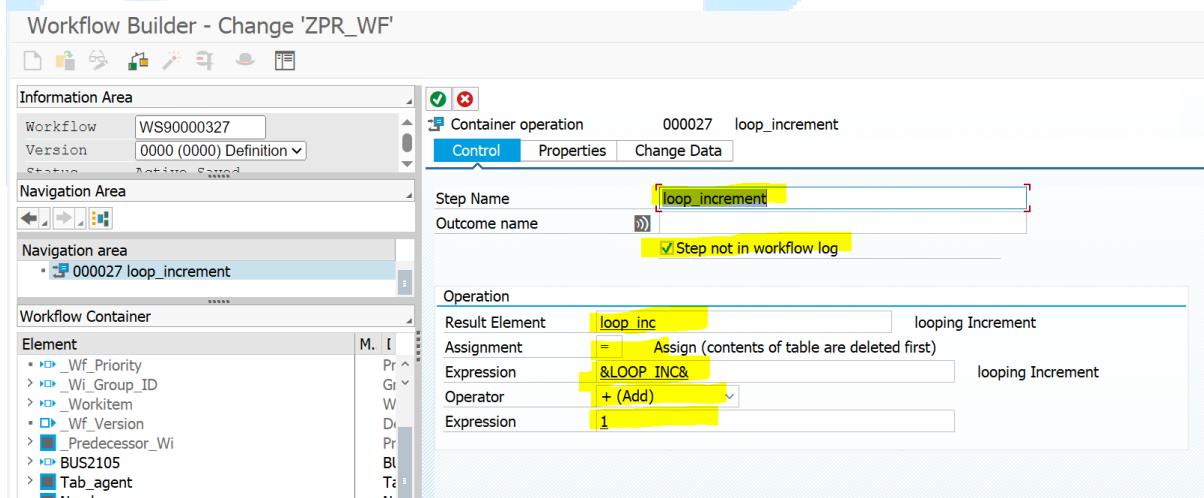
After the Approver Activity add another container operation by following last activity.



Give the details given below.

$$\text{Loop\_inc} = \text{loop\_inc} + 1.$$

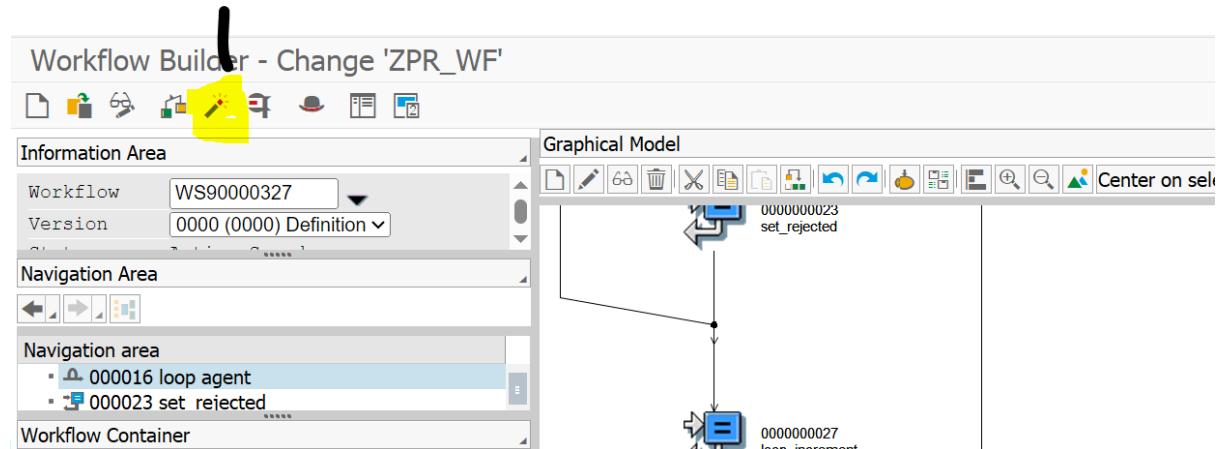
It will make an increment of 1 on every loop.



## Step 14:

Now Workflow Creation is Final.

Now activate the workflow.



To check the workflow execution.

Click on Run button point 2.

Select business object BUS2105.

Give the PR Number and hit execute button.

Further results you can check by SWELS and SWEL T-Code by tracing and SWIA Report.

