

ROLE AND EFFECTIVENESS OF WORKFLOWS IN SHAREPOINT

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ABSTRACT

Office 365 is an online application suite made available depending on the type of chosen plan / subscription. Microsoft Office 365 gives the power of cloud productivity, allowing companies to save time, resources, and money. SharePoint is a content management system that can be used to provide information to users. Workflows can be defined for a set of associated documents through SharePoint. A SharePoint workflow is based on an automatic logical scheme that contains the process map with the step-by-step instructions. The purpose of using document flows by companies is to reduce costs and to increase efficiency.

KEYWORDS: *Office365, cloud, workflow, SharePoint*

1. INTRODUCTION

Office 365 is the brand name used by Microsoft for a group of software and service subscriptions that provides customers with office application and cloud services. In April 2017, Microsoft announced that as of October 13, 2020, it will no longer provide support for Office 2016, which will make access to OneDrive for Business and Office 365-hosted servers for Skype for Business unavailable to those who are not using a current version obtained through an Office 365 subscription. All Office 365 household and staff plans are based on a monthly or annual subscription, and the Office 365 Home plan allows subscription sharing with up to four family members. Most Office 365 plans for schools and nonprofit organizations, companies, include fully installed applications, but also basic plans with the Office online versions, file storage and email [1-4]. The list of the main applications available for the educational licensing plan is as follows:

Admin - allows managing the settings of each subscription as well as managing the accounts and user permissions;

Calendar - allows the management of time and current activities

Class Notebook - is useful for doing lessons, using a workspace where students can get customized feedback.

Delve - allows getting personal and relevant information about who you are working for / what you are working on.

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Dynamics 365 - is based on business processes and applications with Microsoft Dynamics 365.

Flow - allows creating workflows between applications in order to automate time-consuming tasks.

Forms - allows carrying out surveys, questionnaires that can be sent to users in order to get their answers in real time.

Newsfeed - allows navigating easily into news feeds.

OneDrive – makes available to users the storage space for files to be found in one place, and then easily access them from any device connected to the Internet.

OneNote - allows organizing and reusing the notes on all devices.

Outlook - allows managing emails.

People - allows organizing all the contact details of your colleagues, friends, family members, etc. in one place.

Planner - helps you create new plans, organize and assign tasks.

PowerApps - allows you to create mobile apps with the data your organization already uses.

Security & Compliance - helps you comply with legal and technical standards for a good security of the content of data in transit.

SharePoint - allows you to share and manage content and applications to facilitate teamwork.

Staff Notebook - allows collaboration to share notes, policies, procedures, deadlines and calendars.

StaffHub - is used to manage the online work program.

Sway - allows creating and sharing interactive reports, presentations, personal stories, and more.

Tasks - creates and manages tasks in Outlook.

Teams - offers customised chat-based workspace in Office 365.

To-Do - allows you to manage the important tasks you need to do on a daily basis.

Video - allows you to share videos, presentations, and training sessions.

Word, Excel, and PowerPoint - online is the Office suite in the cloud

Yammer - allows you to share information between teams and organize on joint projects.

2. ROLE OF DOCUMENTS FLOWS IN THE CONTEXT OF MICROSOFT SHAREPOINT TECHNOLOGIES

In the context of Microsoft SharePoint technologies, workflow is defined as the automated movement of documents or items through a specific sequence of actions or tasks that are related to a particular purpose. Workflows can be used to manage processes that have a joint goal for University / Faculty / organization, allowing them to develop a functional logic for documents in the SharePoint library. Functional logic is based on a set of instructions that control the actions that happen to documents handling between University / Faculty / organization members. The role of workflows is to reduce the costs and time required for proper tasks coordination. Practical examples of how to use workflows are approval requests applications, documents, projects, etc., effectively managing the tasks and human resources responsible for those approval processes. Workflows can be simple or complex, depending on the business processes in the organization. Developers have the ability to create workflows started by people who use a site or workflows that start automatically based on a specific event, such as when a list

item is created or changed. If the author of the document starts a workflow for a document in the Sharepoint library, then the workflow generates the activities for document approval, assigns those tasks to users who are considered participants in the workflow, sends those participants email alerts that will contain instructions for that task, and a link to the document to be approved [1][5-9]. While the workflow is in progress, the workflow author / owner and the participants can access the Workflow Status page. When the workflow participants complete their workflow tasks, the workflow owner is automatically notified that the workflow has completed [4]. The functional diagram of a workflow is shown as in Figure 1.

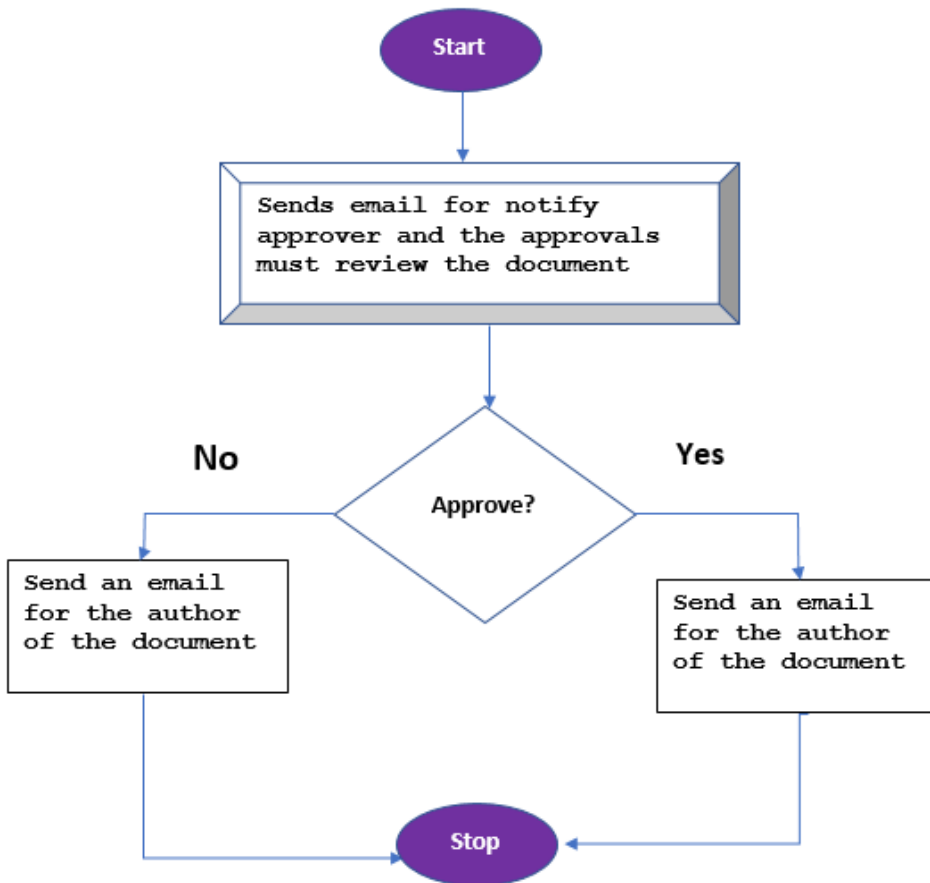


Figure 1. Functional diagram

A SharePoint site may contain predefined workflows that require various actions such as:

- **Approval** - action that establishes that workflow routes a document to a group of people for approval. By default, the Approval workflow must be associated with the type of Document that requires approval and is available in document libraries (see figure 2)

Document Libraries				
Form Templates	Document ...	0	17.03.2018 01:55	This library contains administrator-
formular_1_TEST	Document ...	0	17.03.2018 01:55	Formular Test InfoPath
Inscriere_Licenta	Document ...	1	18.03.2018 21:24	Cerere inscriere licenta
Shared Documents	Document ...	13	18.03.2018 19:48	Share a document with the team b
Site Assets	Document ...	1	05.08.2017 01:16	Use this library to store files which
Site Pages	Document ...	3	18.03.2018 20:58	Use this library to create and store
Style Library	Document ...	5	05.08.2017 01:16	Use the style library to store style s

Figure 2. Document library

- **Collect Feedback** - routes a document having the role of review to a group of people for feedback. These are compiled and sent to the person who initiated the workflow.
- **Collect Signatures** – is meant to route a Microsoft Office document to a group of people to collect their digital signatures. This workflow can be started with an Office 2013 program.
- **Publishing approval** - is similar to Approval workflow and is designed specifically for publishing sites,
- **Three-state** - is used to manage activities that require organizations to track a high volume of documents (for example, subscription requests for Bachelor degree paper, subscription forms for student scientific communication sessions, absence permission requests, absence motivation requests, etc.).

Choosing a type of workflow is carried out according to Figure 3. Each of these workflows can be customized when adding a workflow to a list, to a library, or to a content type, in order to make it available later to customize lists of tasks where information on the created workflow is stored.

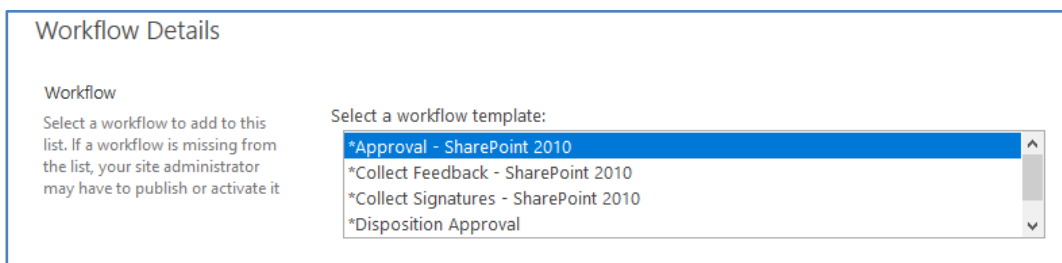


Figure 3. Predefined workflows

Any of these workflows can be customized when adding a workflow to a list, library, or content type, in order to make it available later to customize the tasks lists in which information on the created workflow is stored [8] [10-11].

3. SHAREPOINT DESIGNER 2013

SharePoint Designer 2013 can be used for many important tasks, including connecting to a SharePoint site as in Figure 4.

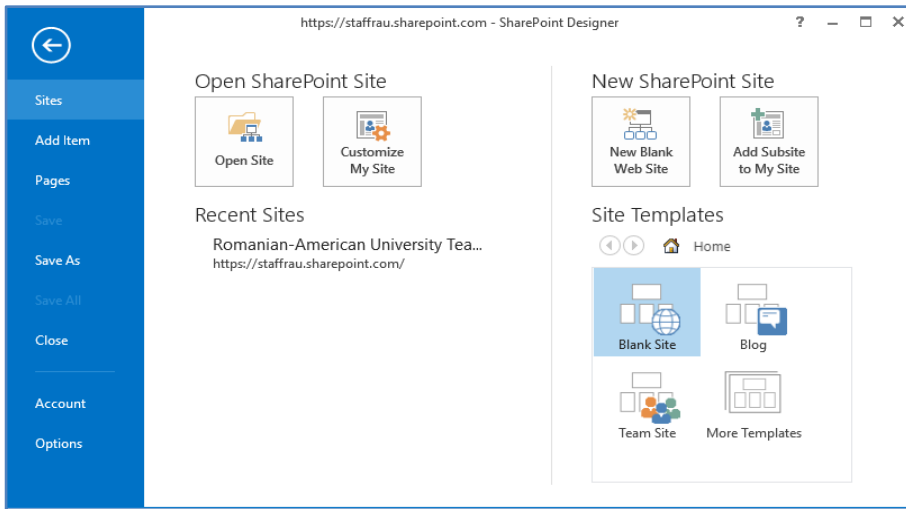


Figure 4. Connecting to a SharePoint site.

To create a new workflow list based on the SharePoint Designer 2013 workflow, a worklist is created for which a name and description are defined. It is important that the work platform type is set as SharePoint 2013 workflow as shown in Figure 5.

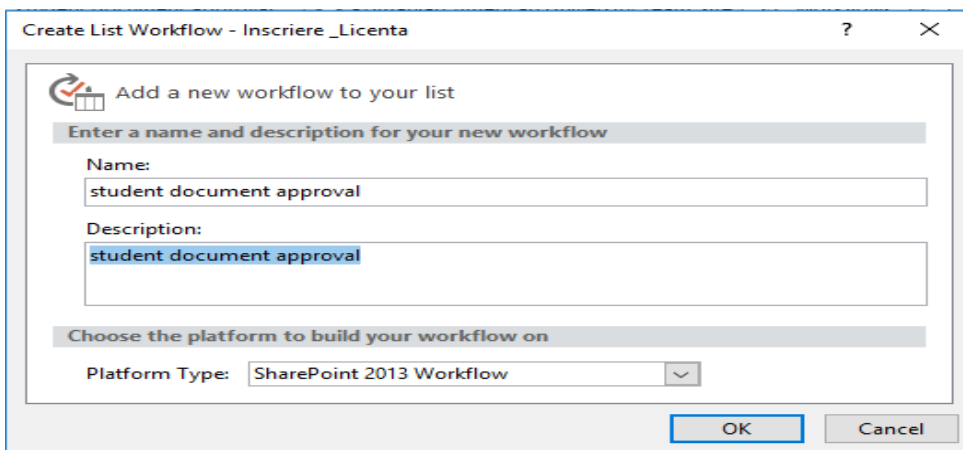


Figure 5. Creating a new workflow in SharePoint Designer 2013

When a workflow is created, it is intended to add actions, conditions, steps, stages and loop to define it. These elements are presented in Figure 6.

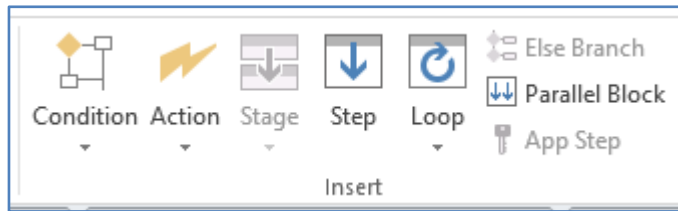


Figure 6. Workflow elements

The range of conditions and actions underlying the workflow composition are presented in Figure 7.

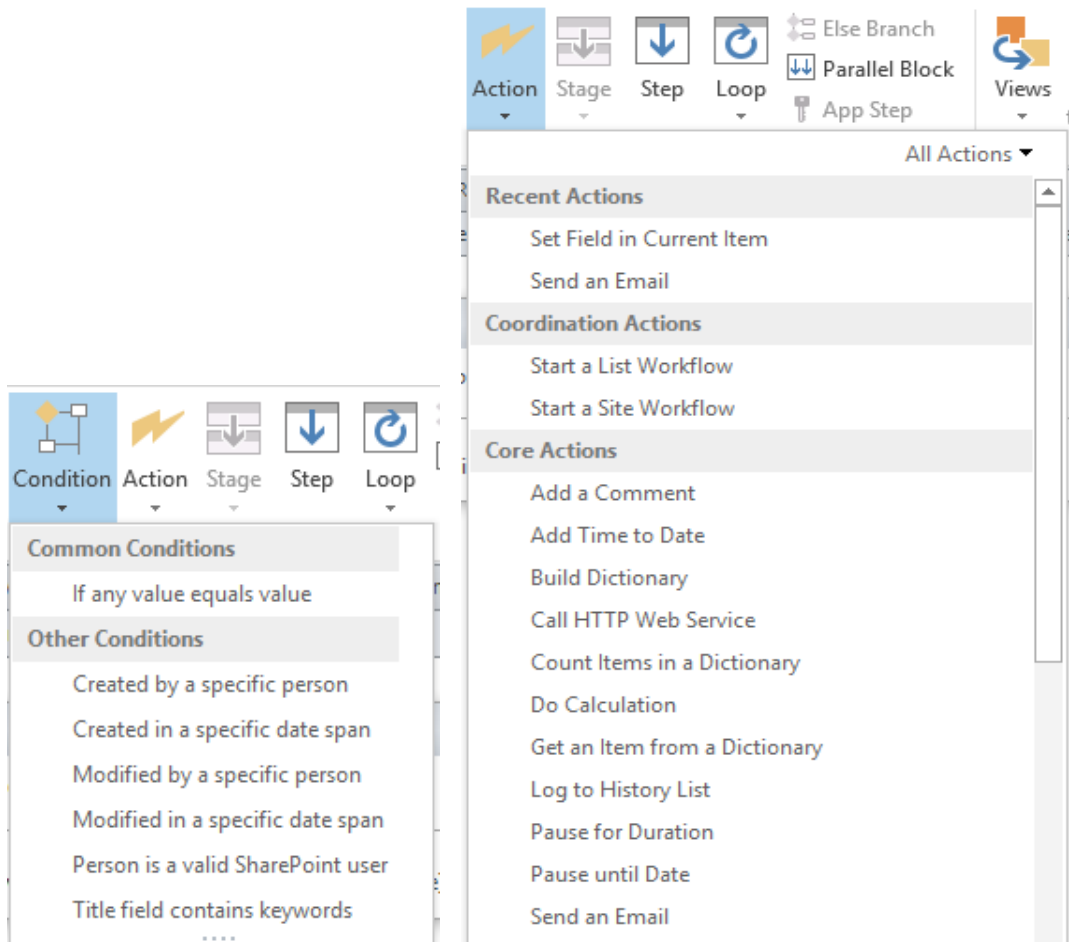


Figure 7. Conditions and actions

4. CASE STUDY: CREATING AND AUTOMATING A WORKFLOW IN OFFICE365 SHAREPOINT

The main steps in the implementation of this case study are: defining the problem; user creation and license assignment; creating the Sharepoint site; creating folders where requests will be distributed, creating workflow, and assigning.

- **Defining the Problem.**

This case study is based on the creation of a Sharepoint site for the purpose of submitting, checking and approving documents, within an educational organization. As a practical example, the student will upload a request for a Bachelor degree paper theme in the "Submit Requests" directory on the Share Point site. The coordinating professor is notified of the presence of this request by email and will be asked to approve or reject the request by choosing the Bachelor degree paper theme. In both cases (approved / rejected) as shown in Figure 1, the student will have to be informed about the status of his / her request by email. If the request has been approved, it will be moved to the "Approved Requests" folder, and if the request is rejected, it will be moved to the "Rejected Requests" folder [4] [12-16]. Requests that have not yet been analyzed and received no response will still be the "Submit Requests" folder until a decision to approve or reject will be taken. For creating users and assigning licenses, it is recommended to use PowerShell as follows:

```

Creating users: #Store the credentials in a variable
$credential = Get-credential #Connect to Azure Active Directory
Connect-AzureAD -Credential @credential
#Add users
$PasswordProfile=New-Object -TypeName Microsoft.Open.AzureAD.Model.PasswordProfile
$PasswordProfile.Password="Password!"
New-AzureADUser -DisplayName " Coordinating Professor " -GivenName "Professor" -SurName
"Coordinating" -UserPrincipalName profesor@staff.ro -UsageLocation RO -ProffessorName
profesor -PasswordProfile $PasswordProfile -AccountEnabled $true
New-AzureADUser -DisplayName "Student" -GivenName "Student" -SurName "Student" -
UserPrincipalName student@stud.ro -UsageLocation RO StudntName student -PasswordProfile
$PasswordProfile -AccountEnabled $true
    
```

```

Assigning licenses:#Check licenses availability
Get-MsolAccountSku
#Assign Exchange Online licenses
Set-MsolUserLicense -UserPrincipalName profesor@staff.ro -AddLicenses staff : ...
Set-MsolUserLicense -UserPrincipalName student@stud.ro -AddLicenses stud :..
# Assign Sharepoint Online licenses
Set-MsolUserLicense -UserPrincipalName profesor@staff.ro -AddLicenses
staff:SHAREPOINTENTERPRISE
Set-MsolUserLicense -UserPrincipalName student@isaam.ro -AddLicenses
stud:SHAREPOINTENTERPRISE
    
```

- **Creating a SharePoint site** - in the appropriate Office 365 portal, go to the SharePoint administration page and from the administration page we have the "Create Site" option, select "Create site" and open a new window where we added a new site with the name "License2018" as in Figure 7.

The screenshot shows the 'Create Site' configuration page in SharePoint. It contains the following sections:

- Site name:** A text box containing 'Licenta2018' with a green confirmation message below it: 'The site name is available.'
- Group email address:** A text box containing 'Licenta2018' with a green confirmation message below it: 'The group alias is available.'
- Site Address:** A text box containing the URL 'https://staffrau.sharepoint.com/sites/Licenta2018'.
- Site description:** A text box containing 'Documente Licenta 2018'.
- Privacy settings:** A dropdown menu set to 'Private - only members can access this site'.

Figure 7. Creating a new site

To see the of Sharepoint sites collection use c-da [Get-SPOSite](#)

- **Creating folders where requests will be distributed** - By accessing the SharePoint link, we login with the Professor account that is also the administrator for this site and define the folders required for our study: "Submit Requests", "Approved Requests" and "Rejected Requests ", as shown in Figure 8.

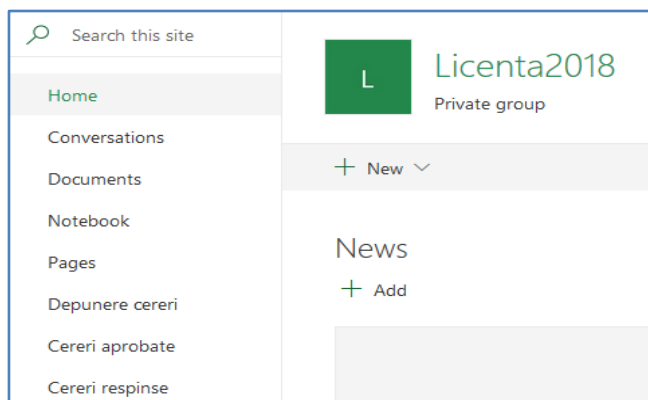


Figure 8. Requests folders

- **Creating the workflow**

The "Submit Requests" folder is accessed as in Figure 9 and the workflow is applied so that when loading a request it will automatically trigger [2][7]. **Defining the workflow is carried out by one of the methods corresponding to the Workflow Settings action, figure 9.**

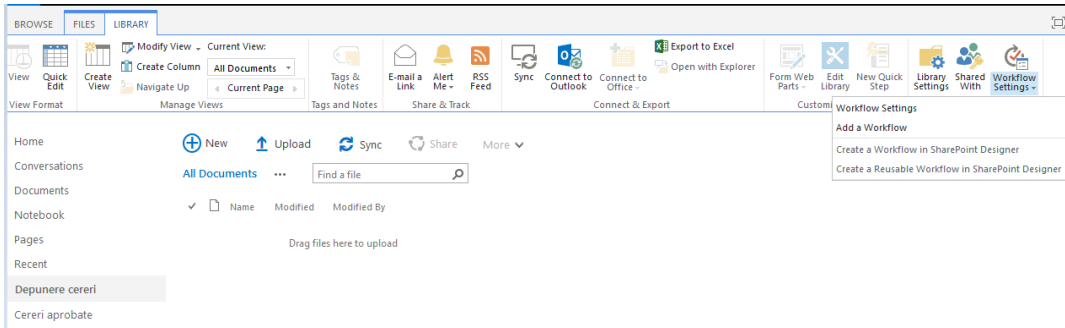


Figure 9. Creating the workflow

Stages of the created workflow process

1. Define the action that triggers the workflow, when creating a new document in the "Submit Requests" directory, specify the address of the SharePoint site and indicate the location / directory for submitting requests. When a document is created or uploaded to this directory, the workflow will start automatically.

2. Start the approval process by sending an email to the Professor containing the student's name and the path to the completed file. After uploading the document, the approval process starts and sends a notification to the Professor. In the notification, we can define details such as email title, email address, and file details (name, location) as shown in Figure 10.

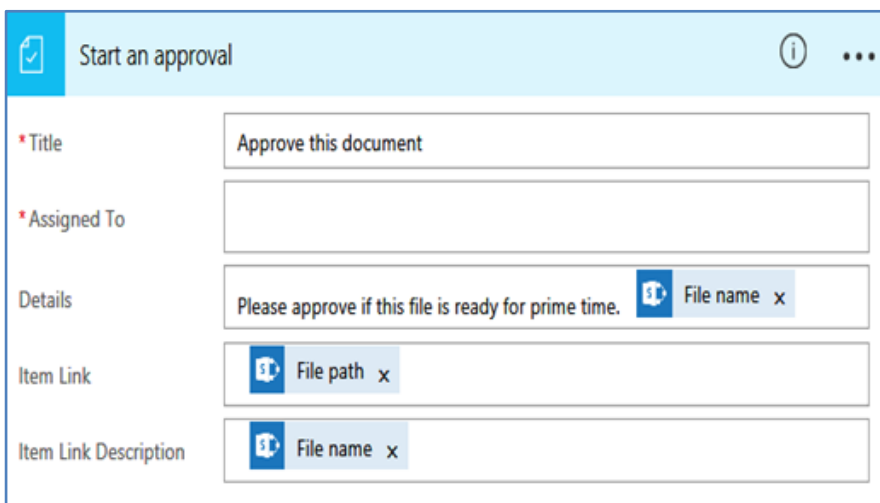


Figure 10. Start an approval

3 Define the condition as in Figure 11 and if the Professor's response is positive and the request has been approved then we pass to the next step.

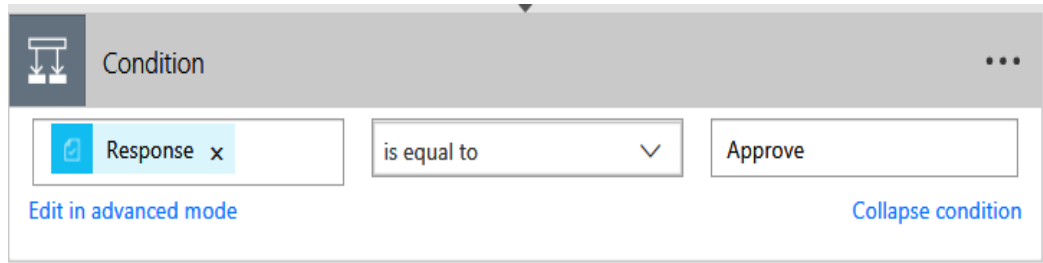


Figure 11. Creating the condition

If the document has been approved, then it is copied to "Approved Requests", and the "Submit Requests" document is deleted and an email is sent to the student with the message: "Your Request has been approved!". If the document has not been approved, it will be copied to the "Rejected Requests" folder, deleted from the original "Submit Requests" location, and an email will be sent to the student with the message: "Your request was rejected! For more details you need to contact your coordinating professor!". The "Submit Requests" folder will contain the uploaded requests and details of who uploaded the request and when the request was uploaded, the "**Approved Requests**" folder displays the approved requests, details of who and when the request was approved, and the "Rejected Requests" folder displays the rejected requests and details about who rejected the request and when the request was rejected [1][4-5].

5. CONCLUSION

Workflows included with SharePoint products work as templates that are added to lists, libraries, and site collections. These SharePoint workflows have proven to be very effective because once started, they automatically route documents, assign review tasks, track the approved / unapproved document circuit, and send notifications whenever it is needed. Workflow tasks can be monitored and the history of workflow events is kept for 60 days after completion. Furthermore, empirical evidences show that the use of workflows simplifies the process of approving / rejecting documents. Within workflows, document lists and libraries inherit permissions from the parent site, but they can be stopped when the purpose is to create unique permissions for a secured object. Legacy permissions from the parent remove all unique permissions created for the secure object.

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