# How to...

## *Use the Collection variable and the associated Collection Operation action.*

### Introduction

This example will demonstrate the use of the collection variable by creating two workflows that use a collection variable.

### Background

The collection variable is a collection of values stored into a single workflow variable. This variable type can be used to store any other type of workflow variable. If you add a number variable it will contain a collection of numbers, or if the collection is built using a regular expression then it will store a collection of text values. However, a Collection can only contain 1 type of variable.

There are two workflow actions designed to work with a collection variable:

The' For Each' loop action which will iterate through each value in the collection and store it to another variable so the value is accessible by other workflow actions. 'For Each' action is used when each item in the collection must be processed.

The 'Collection Operation' action is used to perform other operations on a collection such as adding or removing individual items, counting the number of items in a collection and retrieving an item at a specified position.

## Prerequisites

The workflows will be running on a list with 5 additional fields, 4 number fields and 1 single line of text as shown:

**Columns**

A column stores information about each item in the list. The following columns are currently available in this list:

| Column (click to edit) | Type | Required |
|---|---|---|
| Title | Single line of text | ✔ |
| email list | Single line of text | |
| num1 | Number | |
| num2 | Number | |
| num3 | Number | |
| total | Number | |

The sample item used in this tutorial had the following data:
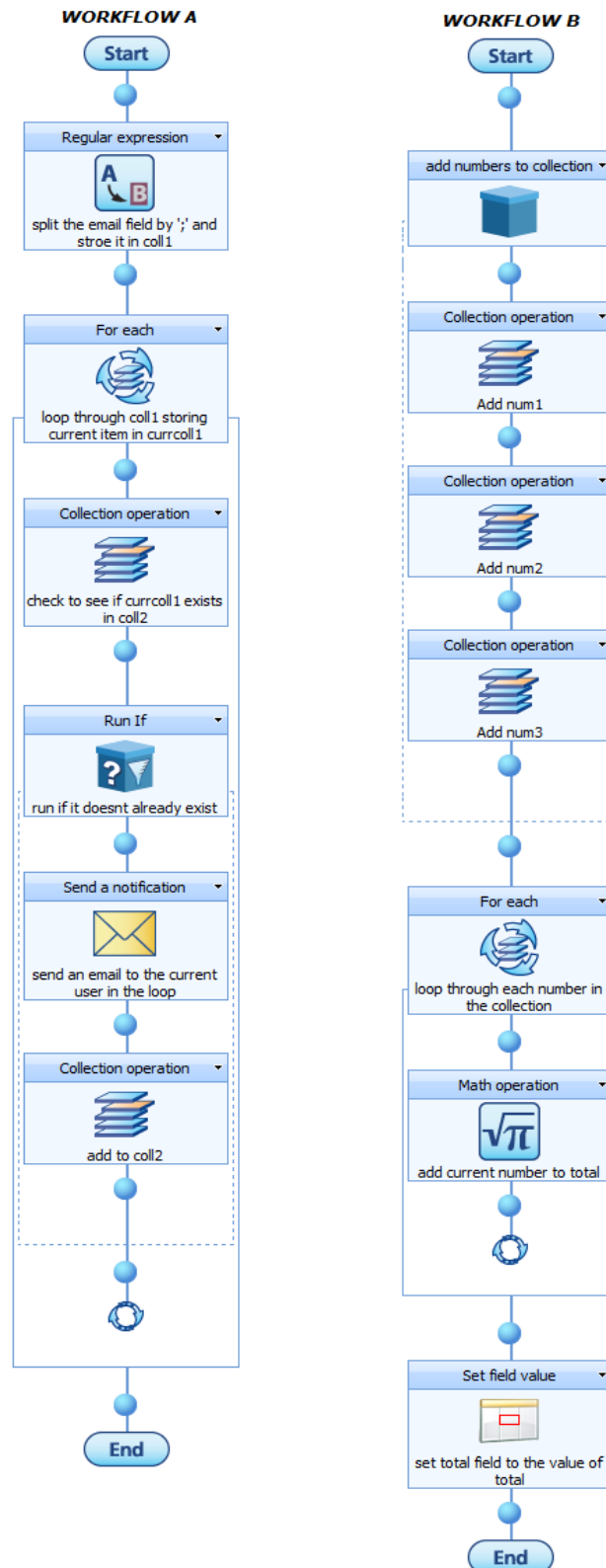
| email list | num1 | num2 | num3 |
|---|---|---|---|
| user1@gmail.com;user3@nintex.com;user1@gmail.com;user1@gmail.com;user2@nintex.com;user2@gmail.com;user3@nintex.com | 5 | 12 | 8 |

*Note: 'total' was left blank and the 'email list' field consisted of this data:*
*user1@gmail.com;user3@nintex.com;user1@gmail.com;user1@gmail.com;user2@nintex.com;user2@gmail.com;user3@nintex.com*

## Build Workflows:

In this tutorial 2 workflows will be created.  The completed workflows will look as follows:

**WORKFLOW A**

- Start
- Regular expression — split the email field by ';' and stroe it in coll1
- For each — loop through coll1 storing current item in currcoll1
- Collection operation — check to see if currcoll1 exists in coll2
- Run If — run if it doesnt already exist
- Send a notification — send an email to the current user in the loop
- Collection operation — add to coll2
- End

**WORKFLOW B**

- Start
- add numbers to collection
- Collection operation — Add num1
- Collection operation — Add num2
- Collection operation — Add num3
- For each — loop through each number in the collection
- Math operation — add current number to total
- Set field value — set total field to the value of total
- End

*Creating Workflow A:*

Workflow A reads the email list field and creates a collection variable based on each of the emails. This collection is then checked to make sure only 1 email is sent regardless of how many times the email appears in the list. This creates a new collection which has no duplicate entries.

To create the workflow, please follow these steps:

- Create the following workflow variables:
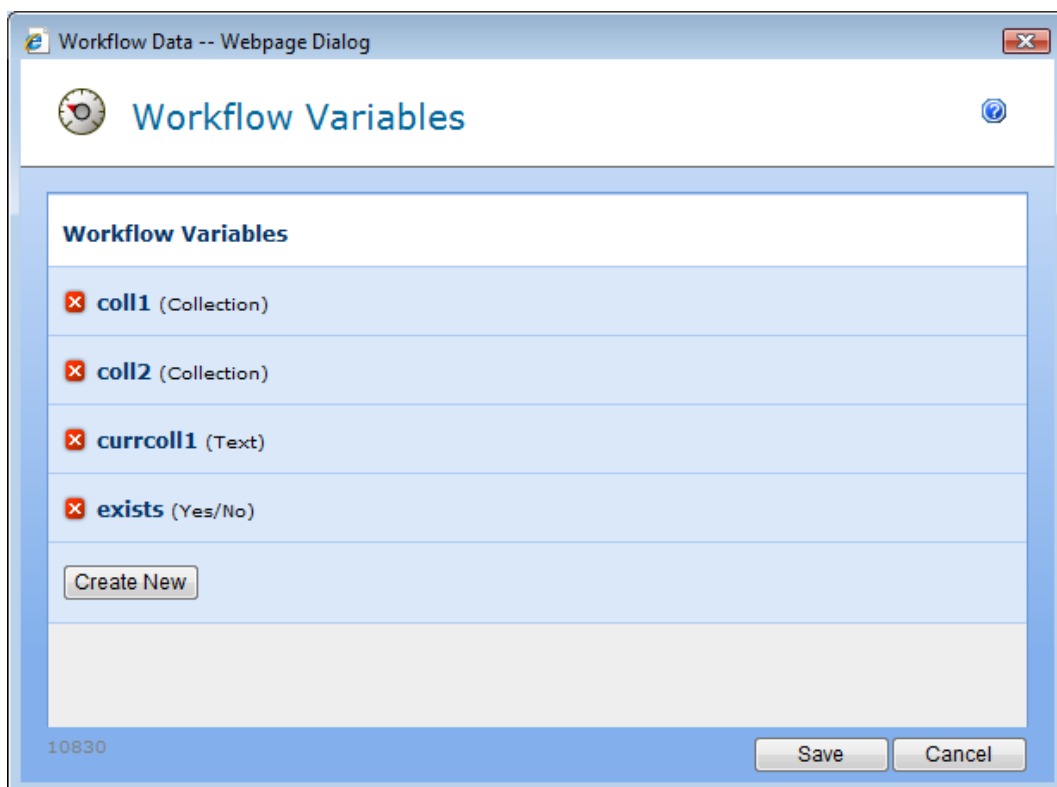
- The first step is to create the initial collection which will consist of all the emails in the email list field. This is done using a Regular Expression configured as follows:
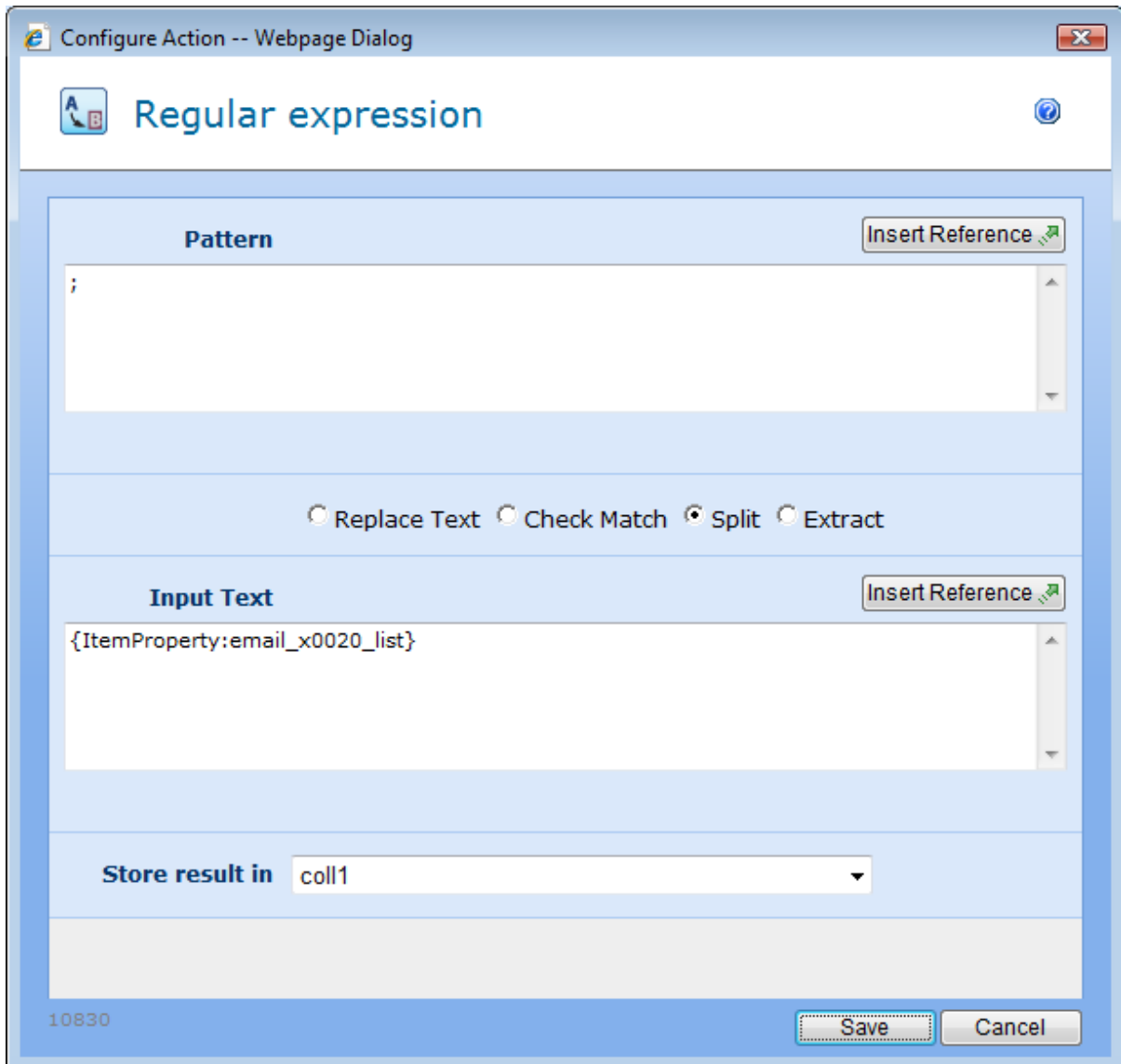


This will split the text field value by ';' and store each email address as an item within the collection.

- The next step is to add the For each loop which will go through each item in the collection and store the current item into the variable 'currcoll1' which can then be used to send a email notification. The For Each loop is configured as follows:



Note: The 'Index' parameter is optional and can be left blank. If a variable is selected, the position of the current item will be stored into the selected variable.

- To ensure that duplicate email notifications are not sent we can use the Collection operation action to check if the current item has already been added to the 2$^{nd}$ collection and if it has don't add it and don't send a notification email. The operation is configured as follows:
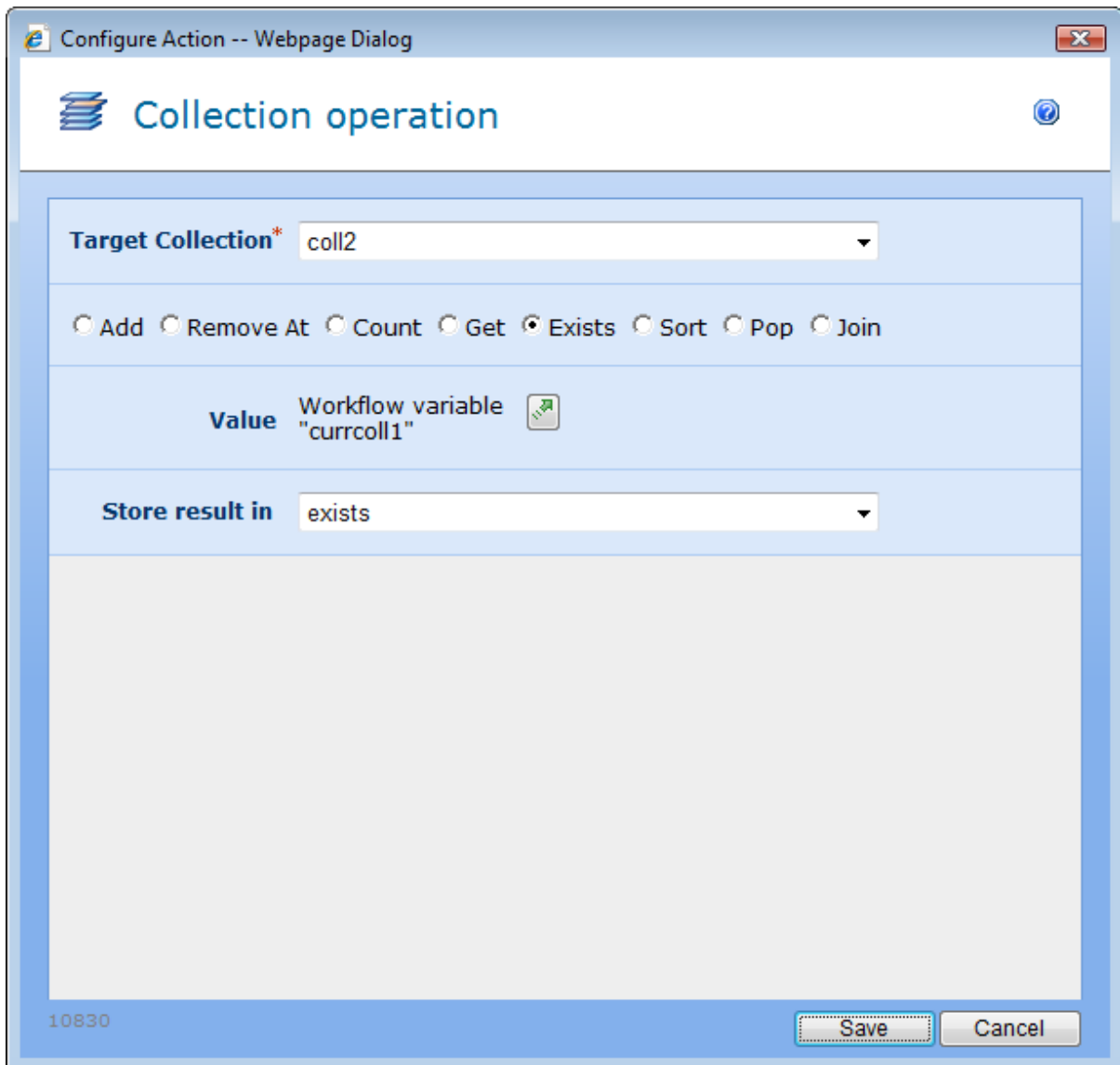
- A Run If action is used to make sure duplicate emails are not processed. This is done by checking the result of the previous collection operation action. The run if is configured as follows:
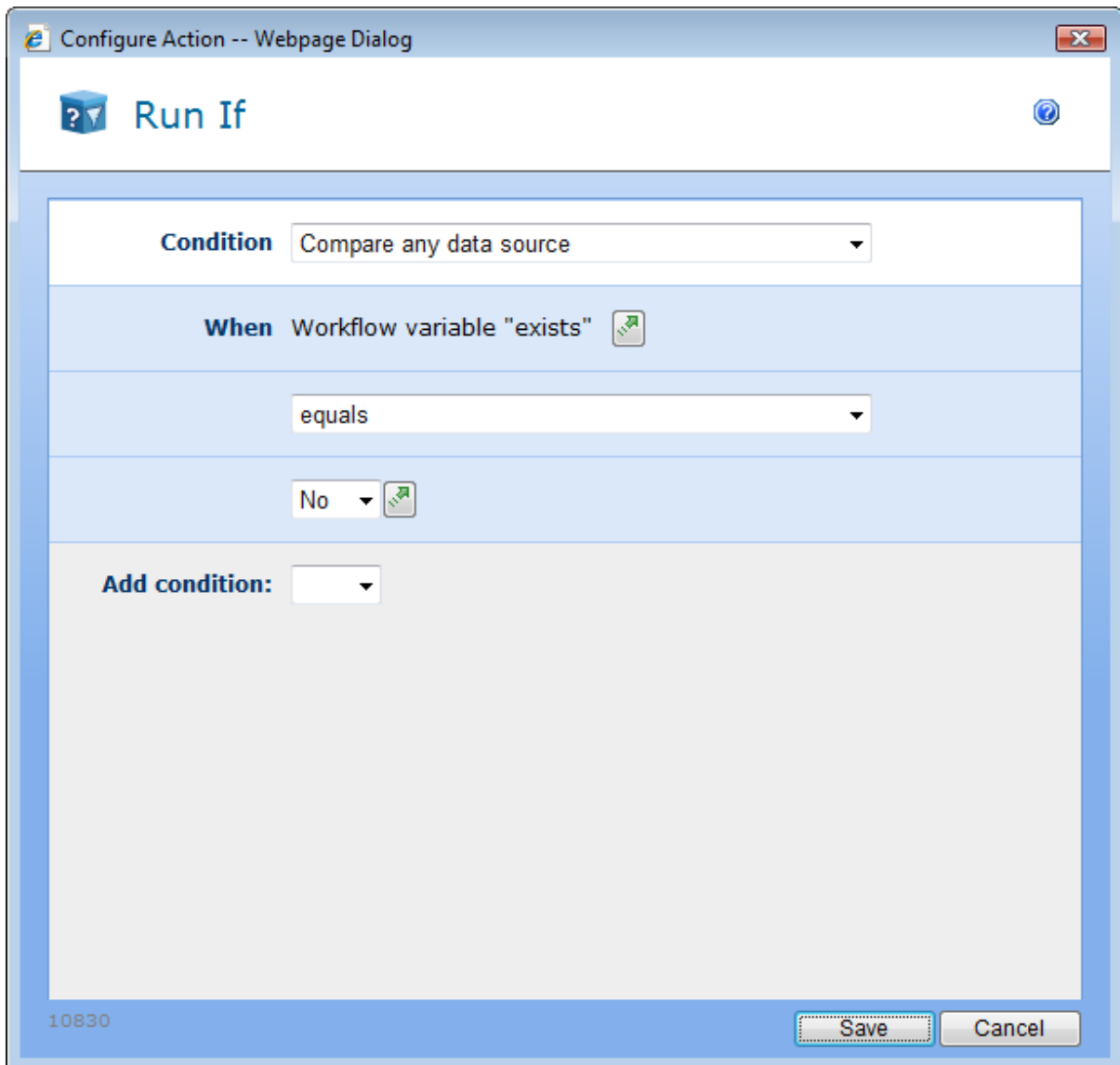


Note: The actions encapsulated in the Run If only execute if the current email is not already in the 2<sup>nd</sup> collection.

- The next action will send an email to the current email in the collection. This is done by configuring the Send a notification action as follows:
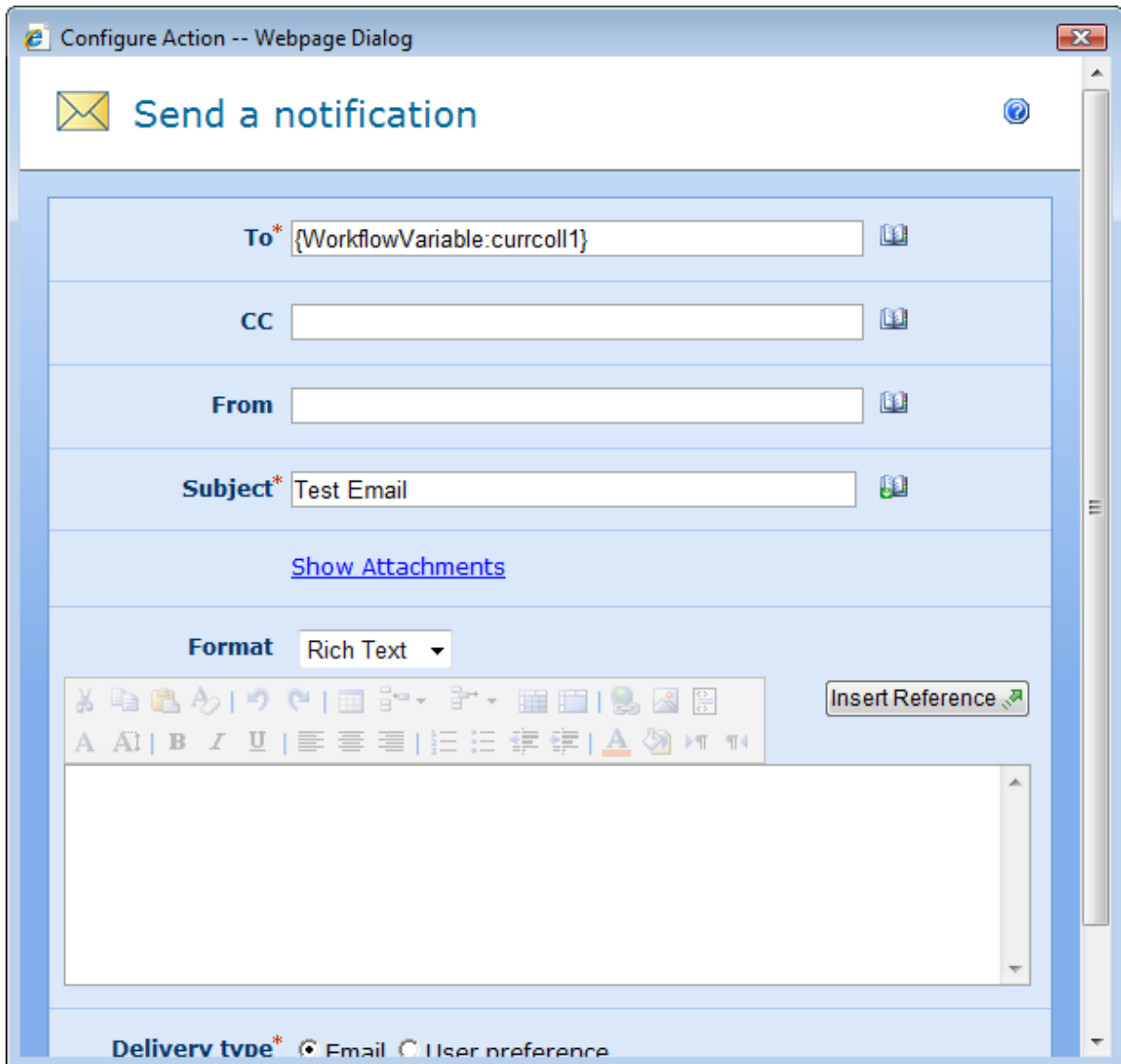
- Finally you must add any non duplicate emails to another collection to ensure emails are only sent once. This collection basically contains a list of all the emails sent. To do this a Collection operation is used and configured as follows:
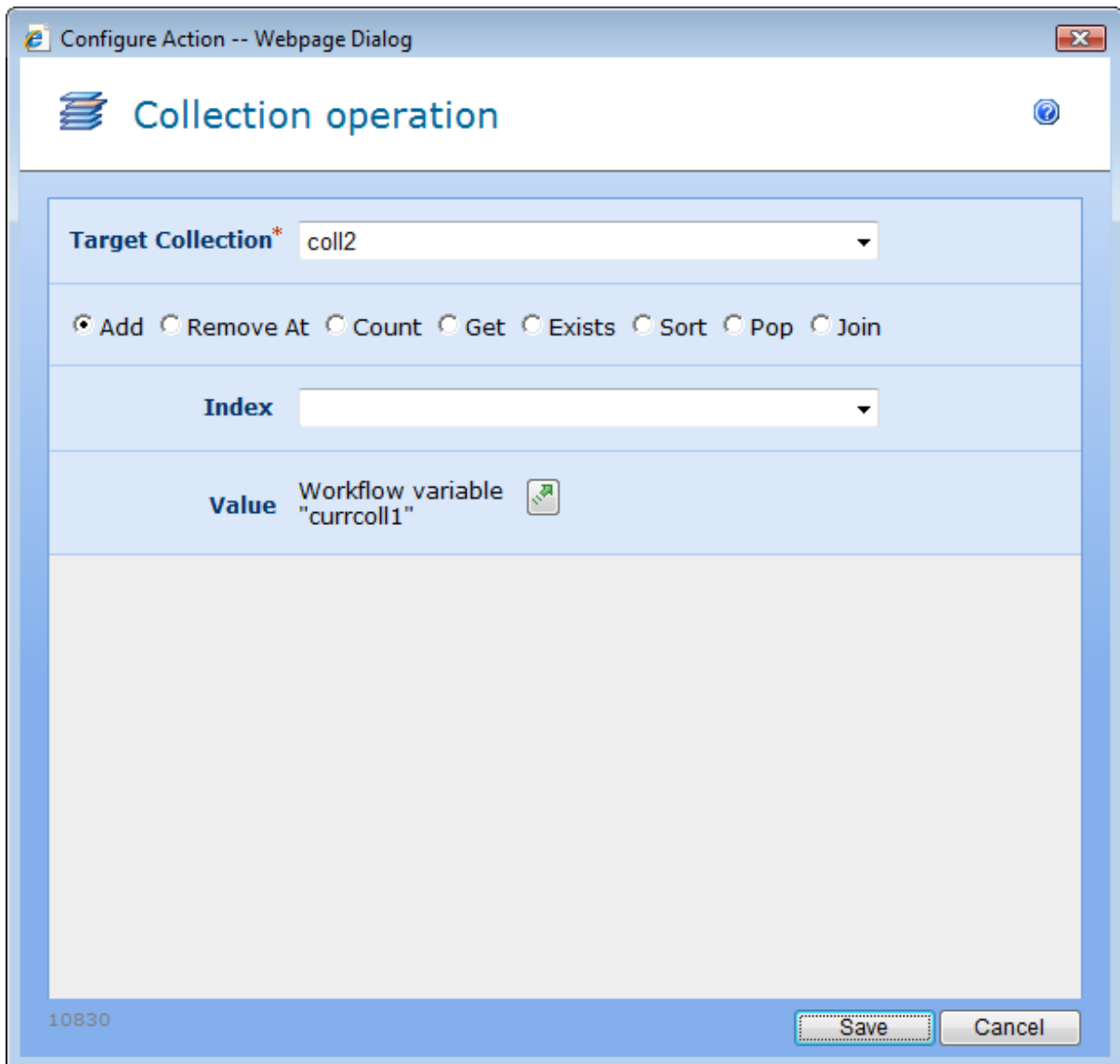
*Creating Workflow B:*

Workflow B generates a collection of numbers based on the 3 number fields in the list item; num1, num2 and num3. The collection is then cycled through and each item is added to another number variable which is then stored in the list field 'total'. Basically it adds the 3 fields together using a collection variable, math operation and for each loop.

To create this workflow, please follow these steps:

- Create the following workflow variables:
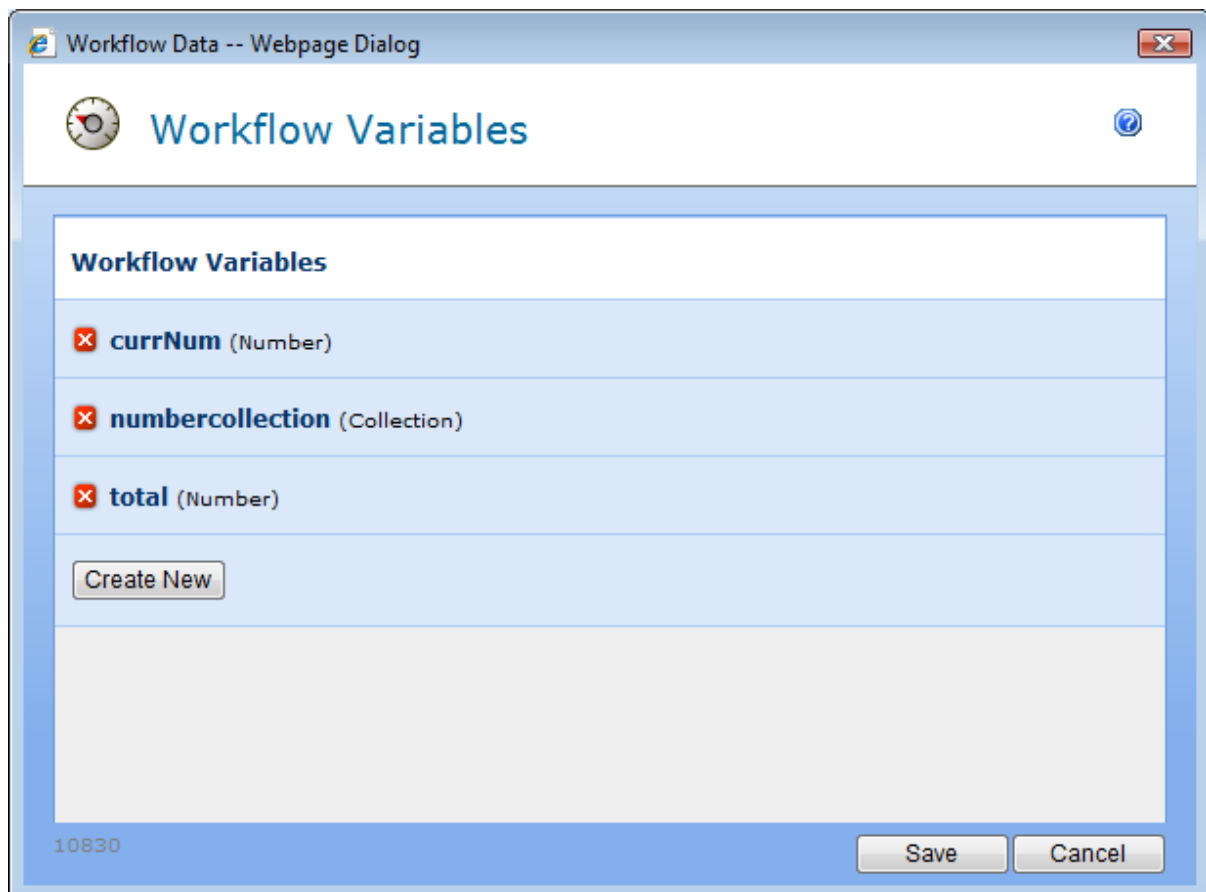
- The first three actions are wrapped in an 'action set'. This is optional but can make the workflow more manageable. The first three actions are all configured in the same way except for the field that is selected for the 'value' parameter. They are configured as follows:
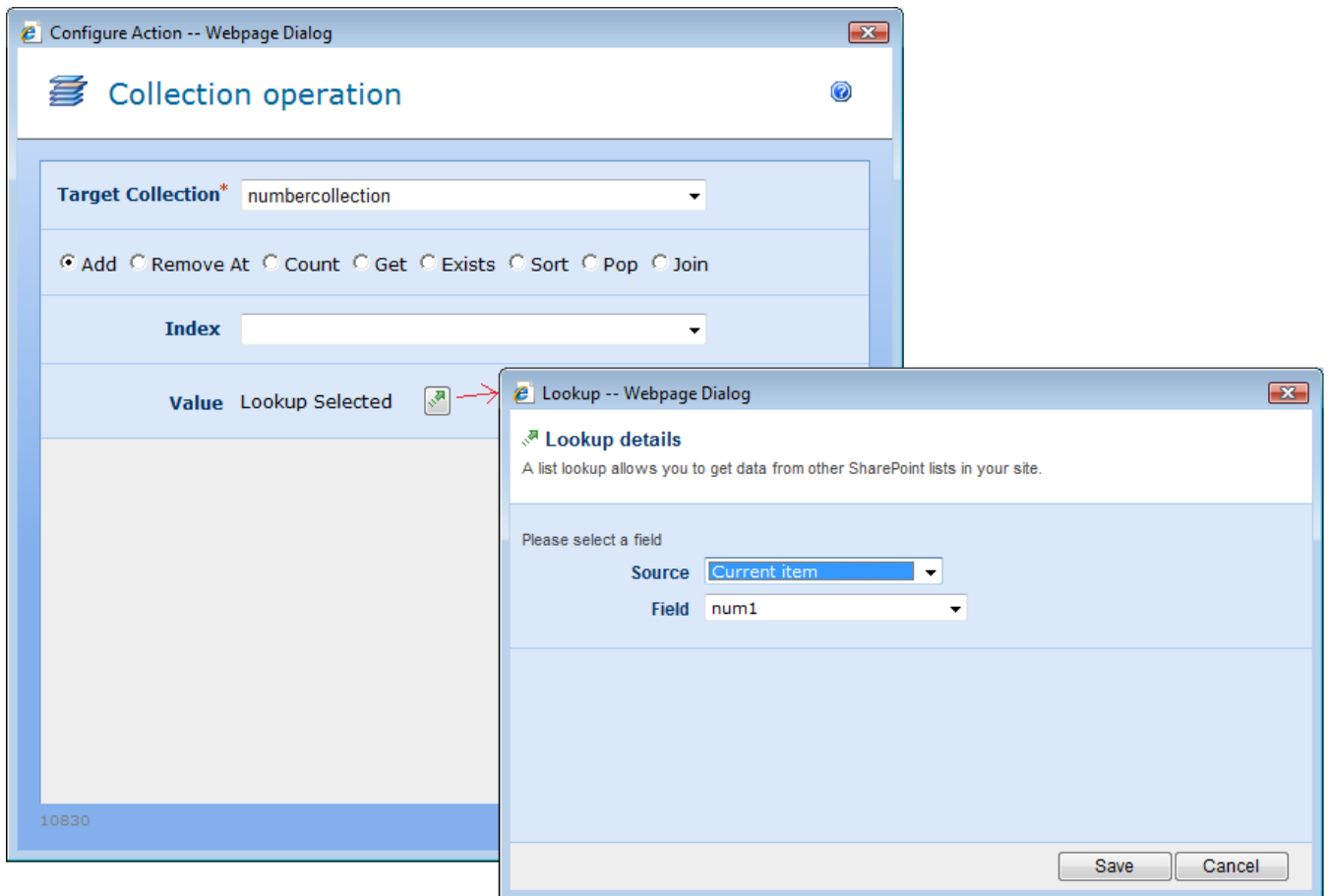


Note: for the 2nd and 3rd actions replace num1 with num2 and num3 respectively.

- Next a For Each loop is used to iterate though each number in the collection and store the current item into the workflow variable 'currNum'. This is configured as follows:

- A Math operation is used to add the current number to the total and store it in a workflow variable. Configure the action as follows:

- Finally a Set field value action is used to set the total field in the list item to the calculated total of all the numbers in the collection. This action is configured as follows:



Configure Action -- Webpage Dialog

## Set field value

Set* total = Workflow variable "total"

10830                    Save    Cancel