

**Jonathan Urie**

# **Task List Maker**

**Simple, Powerful Insight Into Every To Do List**

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**VBA**

## Executive Summary

Task List Maker is an Excel 2010 Add-in that allows a user to enter tasks and then view those lists according to different criteria, including urgency, importance, group involvement, and duration. It also allows users to import old lists and export new lists using the CSV file format.

## Problem

Many organizations and entities are inundated with tasks and it is difficult to determine which tasks they should work on at any given time. At times, it is most effective to work on the most urgent tasks (things that are due very soon). At other times, it is valuable to focus on tasks that are the most important or perhaps tasks that are going to take the longest to complete.

In short, task lists by themselves do not help entities or organizations decide how to complete all their tasks.

## Solution and System

The Task List Maker focuses on the problem of deciding which tasks an entity or organization should focus on, given different criteria. It assists with the entry of tasks as well as manipulating the data in order to gain valuable insight about what tasks to do based on a user's current situation. It includes a custom ribbon and has the following functionality:

- 1) Automatically setup workbook (i.e. creates support tables)
  - a. Master Task list (where all tasks and their data are stored)
  - b. Thresholds (contains definitional information about what is "urgent" or what "low priority" is, etc.)
- 2) Delete Task List Manager Worksheets (support tables)
- 3) Change Thresholds
- 4) Import data from previously exported lists
- 5) Export data on current sheet to a CSV file which can then be re-imported later or used in another program
- 6) Make "Default" lists, including
  - a. Urgent Tasks
  - b. Group work
  - c. Individual work
  - d. Easy wins (less than an hour long)
  - e. On the Radar (tasks that are furthest away according to the thresholds sheet)
  - f. Important
- 7) Delete Default lists
- 8) Create Custom List
- 9) Add Task(s)

## Documentation

Task List Maker is built in VBA and is shipped as an Excel Add-in. After installation, a custom tab will appear on the ribbon which drives all functionality. This section discusses both the components of the system as well as instructions on how to use the system to gain insight into your task list.

### Components

This section discusses the code structure that underpins the Task List Maker system

#### *Worksheets*

##### Master List

The Master List Table contains all of the tasks that are used in creating other to-do lists based on criteria. It contains columns for Task Name, Due Date, Estimated Duration, Importance, and Group Involvement.

- Due Date drives “urgency” or the measure of how soon tasks need to be completed
- Estimated Duration drives “duration” or the measure of how big a given task is
- Importance drives “importance” or the measure of how important a given task in relationship to other tasks
- Group Involvement is a simple yes/no that delineates between group and individual work

##### Thresholds

The Thresholds table contains definitional information about how you define “urgency” “importance” and other measures. These numbers determine the ranges used in reports.

- Urgency has three ranges
  - Urgent (0 days to the value. Defaults to 2 days.)
  - Pressing (urgent value to this value. Defaults to 7 days.)
  - On the radar (urgent value to this value. Defaults to 14 days.)
- Duration has five ranges
  - Short (0 days to the value. Defaults to 1 hour)
  - Afternoon (defaults to 4 hours)
  - Multi day (defaults to 8 hours)
  - Significant (defaults to 20 hours)
  - Long term (defaults to 40 hours)
- Importance has four ranges (1 is low 10 is high)
  - Low (defaults to 3 )
  - Medium (defaults to 6)
  - High (defaults to 8)
  - Extreme (defaults to 10)

These values are changed via the “Change Thresholds” button in the ribbon. This functionality is discussed in the usage section.

## Forms

### Change Thresholds (frmThresholds)

This form displays the current threshold information and allows you to change these values and save them to the current worksheet. Only non-numeric, filled in, sequential numbers are allowed to be filled in.

**Edit Thresholds**

Urgency (days)

Urgent	2
Pressing	7
On the Radar	14

Duration (hours)

Short	1
Afternoon	4
Multi-Day	8
Significant	20
Long Term	40

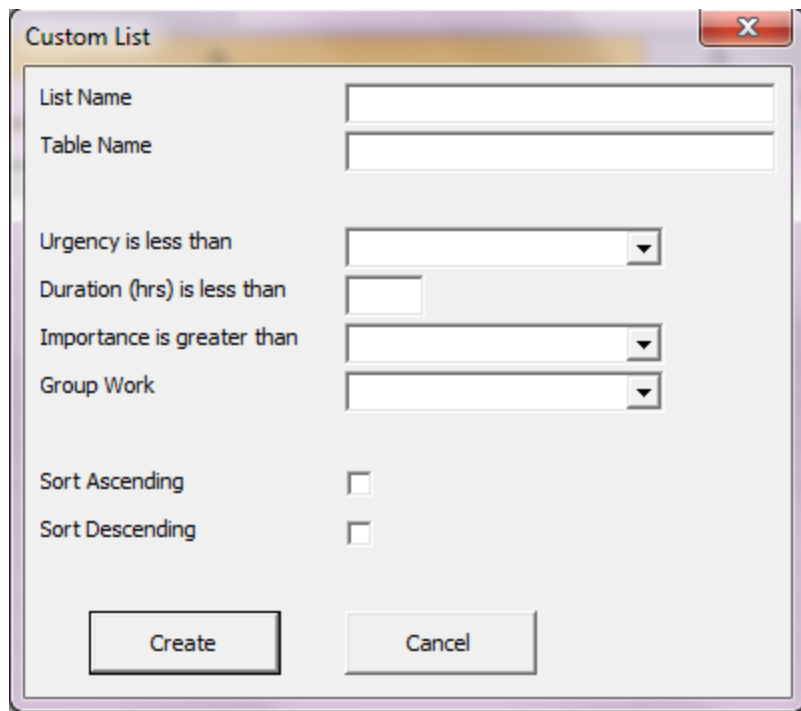
Importance (1 is low, 10 is high)

Low	3
Medium	6
High	8
Extreme	10

Save Cancel

### Create Custom List (frmCustom)

This form is where users can define custom lists. After inputting all information, a new worksheet is created and the list is created according to the users's criteria. List Name determines the name of the worksheet and table name determines the name of the table on the worksheet.

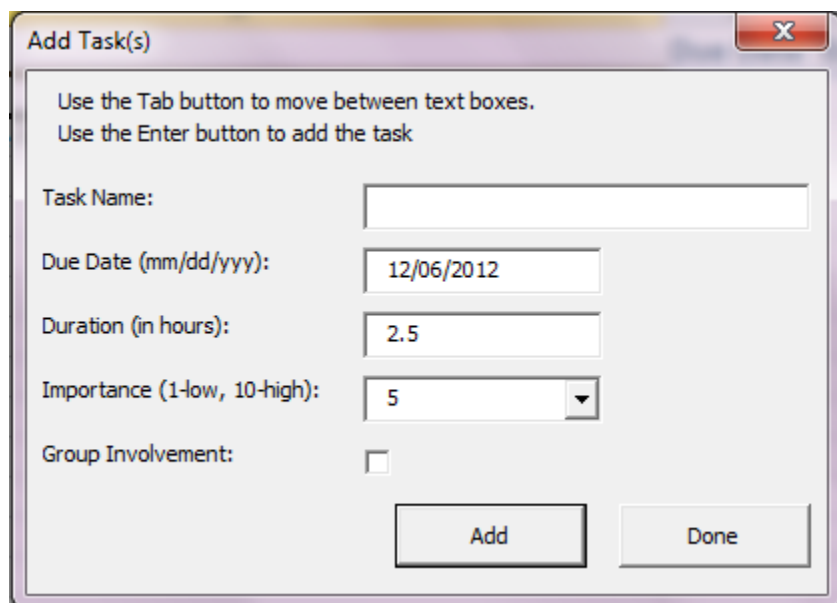


A dialog box titled "Custom List" with a close button (X) in the top right corner. It contains several input fields and checkboxes. The fields are: "List Name" (text box), "Table Name" (text box), "Urgency is less than" (dropdown menu), "Duration (hrs) is less than" (text box), "Importance is greater than" (dropdown menu), and "Group Work" (dropdown menu). Below these are two checkboxes: "Sort Ascending" and "Sort Descending". At the bottom are two buttons: "Create" and "Cancel".

List Name	<input type="text"/>
Table Name	<input type="text"/>
Urgency is less than	<input type="text"/>
Duration (hrs) is less than	<input type="text"/>
Importance is greater than	<input type="text"/>
Group Work	<input type="text"/>
Sort Ascending	<input type="checkbox"/>
Sort Descending	<input type="checkbox"/>
<input type="button" value="Create"/>	
<input type="button" value="Cancel"/>	

#### Add Task(s) (frmAddTask)

This is a form that is used to enter tasks in an easier way than manual entry on the Master List Worksheet. Typing Enter will add the task and clear the fields, allowing for quick multiple entry into the Master List worksheet.



A dialog box titled "Add Task(s)" with a close button (X) in the top right corner. It contains instructions and several input fields. The instructions are: "Use the Tab button to move between text boxes." and "Use the Enter button to add the task". The fields are: "Task Name:" (text box), "Due Date (mm/dd/yyyy):" (text box with value "12/06/2012"), "Duration (in hours):" (text box with value "2.5"), "Importance (1-low, 10-high):" (dropdown menu with value "5"), and "Group Involvement:" (checkbox). At the bottom are two buttons: "Add" and "Done".

Use the Tab button to move between text boxes. Use the Enter button to add the task	
Task Name:	<input type="text"/>
Due Date (mm/dd/yyyy):	<input type="text" value="12/06/2012"/>
Duration (in hours):	<input type="text" value="2.5"/>
Importance (1-low, 10-high):	<input type="text" value="5"/>
Group Involvement:	<input type="checkbox"/>
<input type="button" value="Add"/>	
<input type="button" value="Done"/>	

## Modules

### Ribbon

This module contains all the functions that drive the custom ribbon. It contains the following sub procedures and functions:

- Sub btnSetUpWorkbook\_click(control As IRibbonControl)
  - Creates support worksheets
  - Calls setupWorkbook in the workbookSetupMagic module
- Sub btnChangeThresholds\_click(control As IRibbonControl)
  - Opens the Thresholds form
  - Calls launchThresholdsDialog in the TaskManagerFunctions module
- Sub btnImport\_click(control As IRibbonControl)
  - Allows the user to select a CSV file from a file dialog
  - Appends the data found in the first contiguous region from A2 to the bottom and right of the cell to the Master List worksheet
  - Calls importList in the TaskManagerFunctions module
- Sub btnExportData\_click(control As IRibbonControl)
  - Exports the data on the current sheet to a csv file
  - Titles the csv the name of the current worksheet – timestamp.csv
  - Calls exportList in the TaskManagerFunctions module
- Sub btnDefault\_click(control As IRibbonControl)
  - Creates all the default lists on separate worksheets
  - Calls createAll in the TaskManagerFunctions module
- Sub btnDelete\_click(control As IRibbonControl)
  - Deletes all the default lists (worksheets)
  - Calls deleteAll in the TaskManagerFunctions Module
- Sub btnCustom\_click(control As IRibbonControl)
  - Launches the Custom list form which allows a user to make their own list
  - Calls launchCustomDialog from the TaskManagerFunctions module
- Sub btnAddTasks2\_click(control As IRibbonControl)
  - Launches the Add Task(s) form which allows a user to add tasks to the Master List Worksheet
  - Calls launchAddTaskDialog from the TaskManagerFunctions module
- Sub btnDeleteSupport\_click(control As IRibbonControl)
  - Deletes the two support worksheets Master List and Thresholds
  - Calls deleteItAll in the workbookSetupMagic module
- Sub setupError()
  - Used for error handling
  - Displays a MsgBox tell the user that something bad happened

## TaskManagerFunctions

- Sub launchAddTaskDialog()
  - Opens the frmAddTask Form
- Sub launchThresholdsDialog()
  - Opens the frmThresholds Form
- Sub launchCustomDialog()
  - Opens the frmCustom Form
- Sub createAll()
  - Creates all the default lists
  - createUrgent (see below)
  - createGroup (see below)
  - createIndividual (see below)
  - createEasyWins (see below)
  - createOnTheRadar (see below)
  - createImportant (see below)
- Sub deleteAll()
  - Deletes all the default sheets
  - "Urgent Tasks"
  - "Group Work"
  - "Individual Work"
  - "Easy Wins"
  - "On the Radar"
  - "Important"
- Sub createUrgent()
  - Creates a new list (worksheets) of urgent tasks
  - Calls createListOnNewSheet, getDateThreshold, sortDateAscending, filterBeforeDate, and finishSort (see below)
  - Finds all urgent tasks (based on threshold data)
  - Sorts ascending
- Sub createGroup()
  - Similar to createUrgent, but with different criteria (group work)
- Sub createIndividual()
  - Similar to createUrgent, but with different criteria (individual work)
- Sub createEasyWins()
  - Similar to createUrgent, but with different criteria (duration less than an hour)
- Sub createOnTheRadar()
  - Similar to createUrgent, but with different criteria (in the "on the radar" range)
- Sub createImportant()
  - Similar to createUrgent, but with different criteria (only "important" tasks and above)
- Sub createListOnNewSheet(sheetName As String, tableName As String)
  - Uses the sheetName Parameter to create a new sheet

- Uses the tableName parameter to create a new table
  - Copies the Master list to the new sheet
  - Formats the data as a table
- Sub deleteSheet(sheetName As String)
  - Uses the sheetName Parameter to delete a sheet
  - Suppresses all alerts and does not error out if the sheet doesn't exist
- Sub filterBeforeDate(sheetName As String, tableName As String, beforeDate As String)
  - Based on the sheet and table names, adds a filter to the table in question
  - Criteria=">= beforeDate"
- Sub filterAfterDate(sheetName As String, tableName As String, afterdate As String)erator:=xlAnd
  - Based on the sheet and table names, adds a filter to the table in question
  - Criteria="<= afterDate"
- Sub filterGroup(sheetName As String, tableName As String, criteria As String)
  - Based on the sheet and table names, adds a filter to the table in question
  - Criteria is either yes or no
- Sub filterDuration(sheetName As String, tableName As String, criteria As String)
  - Based on the sheet and table names, adds a filter to the table in question
  - Criteria="<=criteria"
- Sub filterUrgency(sheetName As String, tableName As String, urgencyRangeName As String)
  - Based on the sheet and table names, adds a filter to the table in question
  - Looks up the appropriate criteria using getDateThreshold (see below)
  - Criteria=">=dateThreshold"
- Sub filterImportance(sheetName As String, tableName As String, importanceRangeLowerLimit As String)
  - Based on the sheet and table names, adds a filter to the table in question
  - Looks up the appropriate criteria using getDateThreshold (see below)
  - Criteria=">=dateThreshold"
- Sub sortDateAscending(sheetName As String, tableName As String)
  - Sorts the table on the sheet (per parameter)
  - Sorts ascending
- Sub sortDateDescending(sheetName As String, tableName As String)
  - Sorts the table on the sheet (per parameter)
  - Sorts ascending
- Sub finishSort(sheetName As String, tableName As String)
  - Applies all unapplied sorts to a table on a sheet (per paramaters)
  - Used to finish off the process of sorting a table
- Function getDateThreshold(limitName As String, returnSheet As String) As String
  - Based on a limitName string (parameter)
  - Looks up the corresponding value on the Thresholds Worksheet
  - Returns a date from now that corresponds to the range
- Function getNumber(limitName As String, returnSheet As String) As String



- Similar to getDate Threshold, but actually returns the number
  - Searches on the Thresholds worksheet and returns the number to the right
  - Used by a lot of forms and functions to get the correct threshold data
- Function setNumber(limitName As String, setValue As String, returnSheet As String)
  - Takes in a limitName and setValue
  - Sets the limit to the new value on the Thresholds sheet
  - Returns focus to a worksheet named returnSheet
- Sub importList()
  - Launches a file dialog file picker
  - Filters based on csv
  - Opens the csv file in a new workbook, copies the data from A2 down (no titles) and appends it to the Master List worksheet
- Sub exportList()
  - Launches a file dialog folder picker
  - After a user selects a folder, exports all the data on the current sheet to csv file
  - File name is saved in the form “<current\_worksheet\_name>-<timestamp>.csv” to preserve uniqueness
- Function findNextRow() As Integer
  - Looks on the Master List worksheet and finds the next empty row
  - Used when appending things to the list

### workbookSetupMagic

- Sub setupWorkbook()
  - A HUGE macro that creates the two support worksheets Master List and Thresholds
- Sub deleteItAll()
  - Deletes the two support worksheets Master List and Thresholds

### Usage

The following section describes how to actually use the Task List Manager

### Setup

1. Click on the File Menu
2. Click Options
3. Click Add-ins
4. Click “Go” at the bottom of the screen
5. Click Browse and find the .xlam Add-in file
6. Click OK

The Add-in is now added to your system and your ribbon should be updated to have the Task List Maker tab. It looks like this:



In order to start using Task List Maker, click “Setup Workbook” and it will create the support worksheets needed to start using the system.

If you click on “Delete task List Manager Worksheets,” the support worksheets will be deleted

Clicking on “Change Thresholds” allows you to change the definitions of thresholds. The thresholds must be numeric, filled in and sequential within their categories.

**Edit Thresholds**

Urgency (days)

Urgent	2
Pressing	7
On the Radar	14

Duration (hours)

Short	1
Afternoon	4
Multi-Day	8
Significant	20
Long Term	40

Importance (1 is low, 10 is high)

Low	3
Medium	6
High	8
Extreme	10

Save Cancel

### Import/Export



Import allows you to select a previously-saved csv and append the data to the end of the Master List worksheet.

Export Current Sheet exports the current sheet's data to a csv file in a folder of your choosing. The file is saved in the format "<current\_worksheet\_name>-<timestamp>.csv"

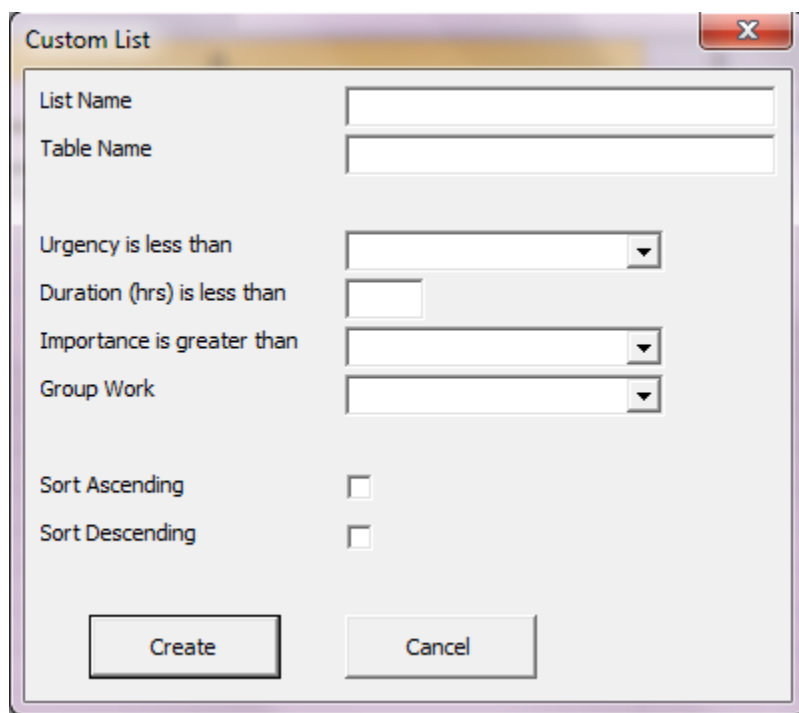
## Lists

Make Default lists creates the following lists on new worksheets:

- Urgent Tasks
- Group work
- Individual work
- Easy wins (less than an hour long)
- On the Radar (tasks that are furthest away according to the thresholds sheet)
- Important

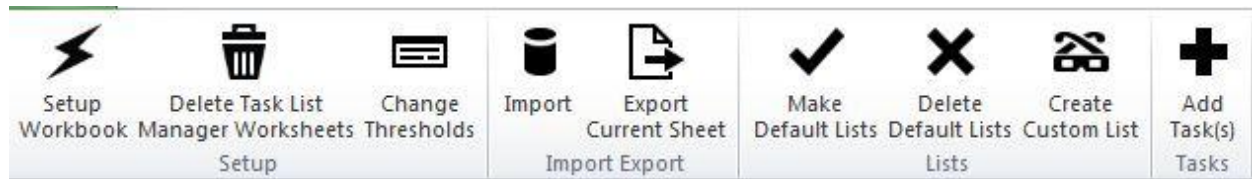
Delete Default Lists deletes the worksheets mentioned above

Create Custom List launches the Custom List form

The image shows a 'Custom List' dialog box with a title bar containing a close button (X). The dialog has several input fields and checkboxes. The 'List Name' and 'Table Name' fields are at the top. Below them are four rows, each with a label and a dropdown menu: 'Urgency is less than', 'Duration (hrs) is less than', 'Importance is greater than', and 'Group Work'. At the bottom, there are two checkboxes: 'Sort Ascending' and 'Sort Descending'. At the very bottom are two buttons: 'Create' and 'Cancel'.

The list Name will be used to title the new worksheet. The table name will be used to title the table on the new worksheet. Urgency determines the upper limit of urgency that will be used in creating the new list. Duration, importance, and group work are all used to filter the new list. Sort options can be used to sort by date.

## Tasks



Add Task(s) launches the Add Task(s) form. This form is used to append new tasks to the Master List worksheet.

The screenshot shows a dialog box titled 'Add Task(s)' with a close button (X) in the top right corner. Inside the dialog, there is instructional text: 'Use the Tab button to move between text boxes.' and 'Use the Enter button to add the task'. Below this, there are five input fields: 'Task Name:' (a text box), 'Due Date (mm/dd/yyyy):' (a date picker showing 12/06/2012), 'Duration (in hours):' (a text box showing 2.5), 'Importance (1-low, 10-high):' (a dropdown menu showing 5), and 'Group Involvement:' (a checkbox). At the bottom of the dialog are two buttons: 'Add' and 'Done'.

## Future expansion

In the future, I'd like to expand the custom list generation capabilities as well as create a "tracking" system for checking off items. Currently it's just a task list maker, but eventually it would be cool to track when things get done.

## Learning and Conceptual Difficulties

Sorting and filtering was somewhat difficult in this assignment, and there are some things that are still a little rough, but I've created enough error catching that you can work around it. I learned a ton about structuring subs, error catching, etc. However, I was able to find most of the answers or work around problems in order to create this final project.

## Assistance

Aside from Extensive Googling of Excel VBA forums and Gove's RibbonFoundry (awesome), I didn't receive any assistance on this project.