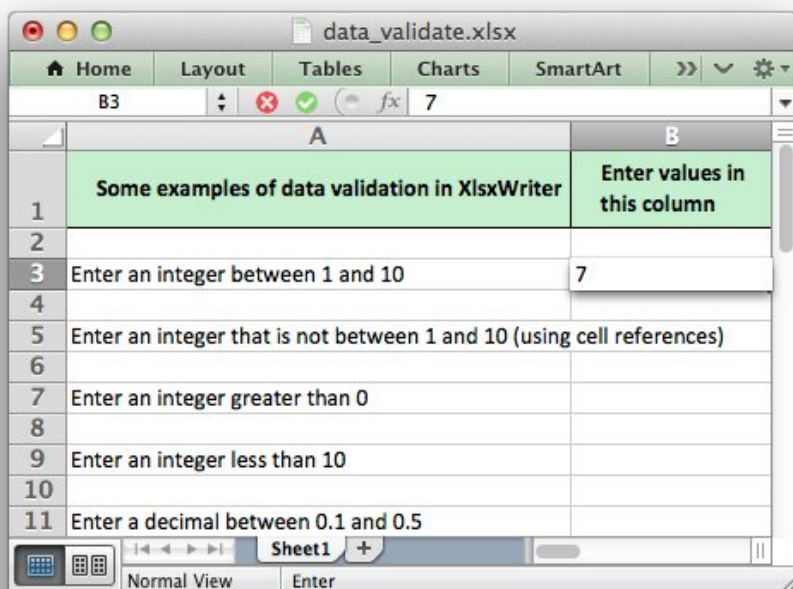


# Example: Data Validation and Drop Down Lists

## XlsxWriter



Example of how to add data validation and drop down lists to an XlsxWriter file. Data validation is a way of limiting user input to certain ranges or to allow a selection from a drop down list.



```
#####  
#  
# Example of how to add data validation and dropdown lists to an  
# XlsxWriter file.  
#  
# Data validation is a feature of Excel which allows you to restrict  
# the data that a user enters in a cell and to display help and  
# warning messages. It also allows you to restrict input to values in  
# a drop down list.  
#  
# SPDX-License-Identifier: BSD-2-Clause  
# Copyright 2013-2022, John McNamara, jmcnamara@cpan.org  
#  
from datetime import date, time  
import xlsxwriter  
  
workbook = xlsxwriter.Workbook('data_validate.xlsx')  
worksheet = workbook.add_worksheet()  
  
# Add a format for the header cells.  
header_format = workbook.add_format({  
    'border': 1,  
    'bg_color': '#C6EFCE',  
    'bold': True,  
    'text_wrap': True,  
    'valign': 'vcenter',  
    'indent': 1,  
})
```

```

}))

# Set up layout of the worksheet.
worksheet.set_column('A:A', 68)
worksheet.set_column('B:B', 15)
worksheet.set_column('D:D', 15)
worksheet.set_row(0, 36)

# Write the header cells and some data that will be used in the examples.
heading1 = 'Some examples of data validation in XlsxWriter'
heading2 = 'Enter values in this column'
heading3 = 'Sample Data'

worksheet.write('A1', heading1, header_format)
worksheet.write('B1', heading2, header_format)
worksheet.write('D1', heading3, header_format)

worksheet.write_row('D3', ['Integers', 1, 10])
worksheet.write_row('D4', ['List data', 'open', 'high', 'close'])
worksheet.write_row('D5', ['Formula', '=AND(F5=50,G5=60)', 50, 60])

# Example 1. Limiting input to an integer in a fixed range.
#
txt = 'Enter an integer between 1 and 10'

worksheet.write('A3', txt)
worksheet.data_validation('B3', {'validate': 'integer',
                                  'criteria': 'between',
                                  'minimum': 1,
                                  'maximum': 10})

# Example 2. Limiting input to an integer outside a fixed range.
#
txt = 'Enter an integer that is not between 1 and 10 (using cell references)'

worksheet.write('A5', txt)
worksheet.data_validation('B5', {'validate': 'integer',
                                  'criteria': 'not between',
                                  'minimum': '=E3',
                                  'maximum': '=F3'})

# Example 3. Limiting input to an integer greater than a fixed value.
#
txt = 'Enter an integer greater than 0'

worksheet.write('A7', txt)
worksheet.data_validation('B7', {'validate': 'integer',
                                  'criteria': '>',
                                  'value': 0})

# Example 4. Limiting input to an integer less than a fixed value.
#
txt = 'Enter an integer less than 10'

worksheet.write('A9', txt)
worksheet.data_validation('B9', {'validate': 'integer',
                                  'criteria': '<',
                                  'value': 10})

# Example 5. Limiting input to a decimal in a fixed range.

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#
txt = 'Enter a decimal between 0.1 and 0.5'

worksheet.write('A11', txt)
worksheet.data_validation('B11', {'validate': 'decimal',
                                   'criteria': 'between',
                                   'minimum': 0.1,
                                   'maximum': 0.5})

# Example 6. Limiting input to a value in a dropdown list.
#
txt = 'Select a value from a drop down list'

worksheet.write('A13', txt)
worksheet.data_validation('B13', {'validate': 'list',
                                   'source': ['open', 'high', 'close']})

# Example 7. Limiting input to a value in a dropdown list.
#
txt = 'Select a value from a drop down list (using a cell range)'

worksheet.write('A15', txt)
worksheet.data_validation('B15', {'validate': 'list',
                                   'source': '=$E$4:$G$4'})

# Example 8. Limiting input to a date in a fixed range.
#
txt = 'Enter a date between 1/1/2013 and 12/12/2013'

worksheet.write('A17', txt)
worksheet.data_validation('B17', {'validate': 'date',
                                   'criteria': 'between',
                                   'minimum': date(2013, 1, 1),
                                   'maximum': date(2013, 12, 12)})

# Example 9. Limiting input to a time in a fixed range.
#
txt = 'Enter a time between 6:00 and 12:00'

worksheet.write('A19', txt)
worksheet.data_validation('B19', {'validate': 'time',
                                   'criteria': 'between',
                                   'minimum': time(6, 0),
                                   'maximum': time(12, 0)})

# Example 10. Limiting input to a string greater than a fixed length.
#
txt = 'Enter a string longer than 3 characters'

worksheet.write('A21', txt)
worksheet.data_validation('B21', {'validate': 'length',
                                   'criteria': '>',
                                   'value': 3})

# Example 11. Limiting input based on a formula.
#
txt = 'Enter a value if the following is true "=AND(F5=50,G5=60)"'

worksheet.write('A23', txt)

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worksheet.data_validation('B23', {'validate': 'custom',
                                  'value': '=AND(F5=50,G5=60)'})

# Example 12. Displaying and modifying data validation messages.
#
txt = 'Displays a message when you select the cell'

worksheet.write('A25', txt)
worksheet.data_validation('B25', {'validate': 'integer',
                                  'criteria': 'between',
                                  'minimum': 1,
                                  'maximum': 100,
                                  'input_title': 'Enter an integer:',
                                  'input_message': 'between 1 and 100'})

# Example 13. Displaying and modifying data validation messages.
#
txt = "Display a custom error message when integer isn't between 1 and 100"

worksheet.write('A27', txt)
worksheet.data_validation('B27', {'validate': 'integer',
                                  'criteria': 'between',
                                  'minimum': 1,
                                  'maximum': 100,
                                  'input_title': 'Enter an integer:',
                                  'input_message': 'between 1 and 100',
                                  'error_title': 'Input value is not valid!',
                                  'error_message':
                                      'It should be an integer between 1 and 100'})

# Example 14. Displaying and modifying data validation messages.
#
txt = "Display a custom info message when integer isn't between 1 and 100"

worksheet.write('A29', txt)
worksheet.data_validation('B29', {'validate': 'integer',
                                  'criteria': 'between',
                                  'minimum': 1,
                                  'maximum': 100,
                                  'input_title': 'Enter an integer:',
                                  'input_message': 'between 1 and 100',
                                  'error_title': 'Input value is not valid!',
                                  'error_message':
                                      'It should be an integer between 1 and 100',
                                  'error_type': 'information'})

workbook.close()

```