

## Code characterization

General description:

Code that reads multiple Excel files (input files) and writes into a single predefined half empty excel file (output file).

The code will extract values and text from multiple Excel files and export them to sheets at the output Excel file. Each input excel file will result in a new sheet at the output Excel file.

All text search should not be Case or space sensitive – example: CHSC=ch sc

All variables should be made easy to change manually in the future.

**Input files:** multiple Excel files containing information on several sheets.

**Output file:** single excel file with multiple sheets.

2 example Excel files are attached: 1 input file: EEN-24, 1 output file: InSitu\_results Example.

1 condition table is also attached: Table1 – the table will change and grow over time

## Iteration over 1 input file

### 1. Create first sheet in output file

Open first Excel file from a defined folder. The folder will contain multiple Excel files (the code will run all Excel files in a certain folder. path to the folder should be easy to define at the beginning of the code)

Open Sheet named “**Point**” (sheet name should be available for editing in the future)

Look for cell “**Borehole**” (cell name should be available for editing in the future)

Extract Text from the cell under “borehole” – Example: **EEN-24**

Open new sheet at the output file and name it **EEN-24**

### 2. Extract data from sheet “POINT”

Look for cell with the text: **x (m)** (cell name should be available for editing in the future)

Extract the value from 1 cell under to cell A3 in sheet **EEN-24**

Extract the rest of the needed values to the appropriate cells in sheet **EEN-24** – visual description in the following page

# Extract data from sheet “point”

input file: EEN-24

	A	B	C	D	E	F	H	I
1	PointID	East	North	HoleDepth	Elevation	GW Depth	Date Started	Date Finished
2	Borehole	X (m)	Y (m)	Total Depth (m)	(m)	(m)		
3	EEN-24	201281	692453	35.00	+47	20.0	23/10/2022	25/10/2022
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output file: InSitu results Example

	A	B	C	D	E	F	G	H	I	J	K	L	M	
	borehole elevation	borehole depth [m]	GWT depth [m]	number of layers	bottom of layers [m]	layers colors	layers types	how to calculate the layers	elevation	depth	SPT	VT remolded [kPa]	VT peak [kPa]	Plas Inde
1	47	35	20	9	1	1	Fill	g	45.5	1.5		30	90	
2	201281				2.17	3	CLS	g	43.5	3.5	1			
3	692453				6	4	CH	c	41	6	2			
4					8	3	SP	g	39	8	1			
5					12	4	MARL	c	38	9	0			
6					16.03	4	CHALK	c	36	11		20	70	
7					22	4	LIMESTONE	c	35	12		20	125	
8					26.2	4	MARL	c	33.5	13.5	12			
9					35	4	CHALK	c	32	15	19			
10									47					
11									47					
12									47					
13									47					
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25									47					
26									47					

### 3. Extract data from sheet “LITHOLOGY”

Look for cell with the text: [Bottom](#) (cell name should be available for editing in the future)

Look for cell with the text: [USCS](#) (cell name should be available for editing in the future)

Extract layer names and bottoms: Extract the values from the columns under [Bottom](#) and [USCS](#)

If values in column [USCS](#) appear in two consecutive cells or more, only the last values of column [Bottom](#) and [USCS](#) will be transferred to the output file.

Determine values at column [layers colors](#) in output file: The values will be determined according to predetermined condition table that we will provided - table matching between values from column [USCS](#) to numbers (the condition table values should be available for editing in the future). The numbers will be inserted to the column under [layers colors](#), respectively to the columns in [USCS](#) column.

Determine values at column [how to calculate the layers](#) in output file: The values will be determined according to predetermined condition table that we will provided - table matching between values from column [USCS](#) to letters (the condition table values should be available for editing in the future). The letters will be inserted to the column under [how to calculate the layers](#), respectively to the columns in [USCS](#) column.



### 3. Extract data from sheet “SPT”

Look for cell with the text: [Nspt](#) (cell name should be available for editing in the future)

Look for cell with the text: [Depth](#) (cell name should be available for editing in the future)

Extract the values from the columns under [Nspt](#) and [Depth](#)

Insert [Nspt](#) values in a column under the cell with the text [SPT](#) (at K column in the Insitu\_results Example)

Insert [Depth](#) values in a column under the cell with the text [depth](#) (at J column in the Insitu\_results Example)

Values from [SPT](#) column and [depth](#) column will be inserted at the same row, and the same order the were extracted.

### 4. Extract data from sheet “VANE SHEAR”

Look for cell with the text: [Vane Undisturbed](#), [Vane Remolded](#) and [Depth](#) (cell names should be available for editing in the future)

Extract the values from the three columns under those values

Deciding where to insert values: look for the closest value between the [depth](#) column in the output file (was created while inserting data from “SPT” sheet at the last stage) and the [depth](#) column in the “VANE SHEAR” sheet in the input file, insert the [Vane Undisturbed](#) and the [Vane Remolded](#) values at the appropriate row in the input file.

## Extract data from sheet "SPT"

input file: EEN-24, sheet SPT

	B	C	D	E	F	G	H
1	Depth	Blows 1st	Blows 2nd	Blows 3rd	Total penetration	Nspt	Penetration
2							
3	2	5	5	5	45	10	30
4	4	3	4	6	45	10	30
5	6	7	7	7	45	14	30
6	8	7	10	15	45	25	30
7	10	20	30	50	45	80	30
8	12	20	30	45	45	75	30
9	14	50	0	0	5	100	5
10	16	50	0	0	3	100	3
11	18	26	27	23	45	50	30
12	20	50	0	0	7	100	7
13	22	47	20	33	5	100	5
14	24	50	0	0	6	100	6
15	26	50	0	0	13	100	13
16	28	9	20	50	32	100	17
17	30	50	0	0	8	100	8
18	32	50	0	0	12	100	12
19							
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31							

DRILL DETAILS | SAMPLES | **SPT** | VANE SHEAR | LITHOLOGY | P ...

output file: InSitu results Example

	H	I	J	K	L	M	N	O
	how to calculate the layers	elevation	depth	SPT	VT remolded [kPa]	VT peak [kPa]	Plasticity Index [%]	Pressumeter test [MPa]
1								
2	g	45	2	10	30	90		
3	g	43	4	10				
4	c	41	6	14				
5	g	39	8	25				
6	c	37	10	80				
7	c	35	12	75	20	70		
8	c	33	14	100	20	125		
9	c	31	16	100				
10	c	29	18	50				
11		27	20	100				
12		25	22	100				
13		23	24	100				
14		21	26	100				
15		19	28	100				
16		17	30	100				
17		15	32	100				

# Extract data from sheet “VANE SHEAR”

input file: EEN-24, sheet VANE SHEAR

	A	B	G	H	I	J	K
1	PointID	Depth	Vane Undisturbed	Vane Remolded	Type		
2							
3		2.5	90	30			
4		11.5	70	20			
5		14.5	125	20			
6							
7							
8							
9							
10							
11							
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14							
15							
16							
17							
18							

DRILL DETAILS | SAMPLES | SPT | **VANE SHEAR** | LITHOLOGY | P ...

output file: InSitu results Example

	H	I	J	K	L	M	N	O
	how to calculate the layers	elevation	depth	SPT	VT remolded [kPa]	VT peak [kPa]	Plasticity Index [%]	Pressumeter test [MPa]
1								
2	g	45	2	10	30	90		
3	g	43	4	10				
4	c	41	6	14				
5	g	39	8	25				
6	c	37	10	80				
7	c	35	12	75	20	70		
8	c	33	14	100	20	125		
9	c	31	16	100				
10	c	29	18	50				
11		27	20	100				
12		25	22	100				
13		23	24	100				
14		21	26	100				
15		19	28	100				
16		17	30	100				
17		15	32	100				