

In the Name of Allah, The Most Merciful, The Ever Merciful

# WIRAMO DYNAMO SCRIPT USER GUIDE

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Allah's is the praise and peace & blessings be upon His messenger

## **Script Development Team**

### **Research & Development:**

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### **Script Coding:**

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### **Testing:**

Zaboor Khan

## **Introduction**

Built-in Revit wiring calculation does not provide desired results and thus bounds the user to find the wire lengths manually without using any BIM software. This Dynamo script provide a semi-automatic way to find the wire lengths with very good approximation of the wire lengths.

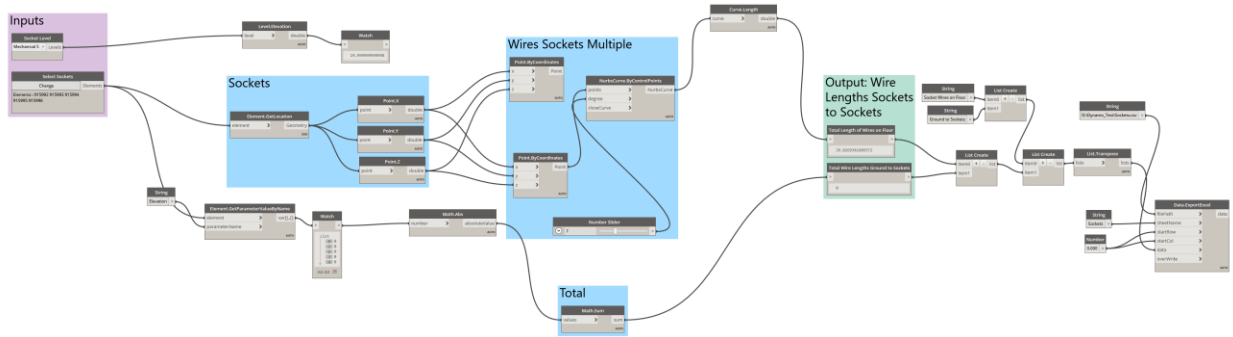
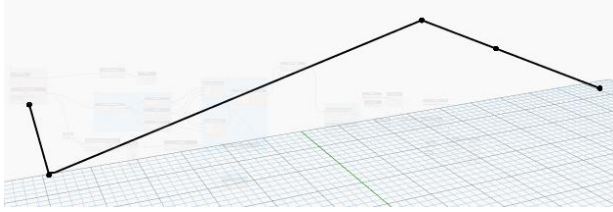
We have provided three Dynamo scripts for different purposes, these are:

1. Sockets
2. Last Switch or Socket to DB
3. Lights to Switch

Apart from the naming of the scripts, the scripts can be used for many different purposes regardless of their respective names.

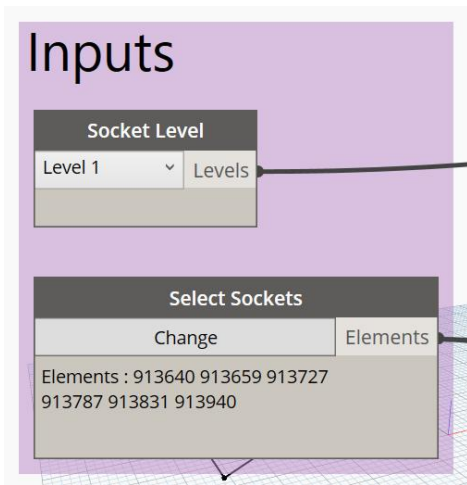
## **Sockets Script**

**Usage:** This script can be used to approximate the total wire running between different Revit elements i.e. Electrical Sockets in our case. The script simply runs wires by passing through each Revit element and thus provide the total length of the wire passing through the sockets in the end.



**Inputs:**

1. Socket Level: Provide a Revit Level on which the wire which run on.
2. Sockets: Provide Electrical Sockets or any Revit Element through which you want the wires to run on.

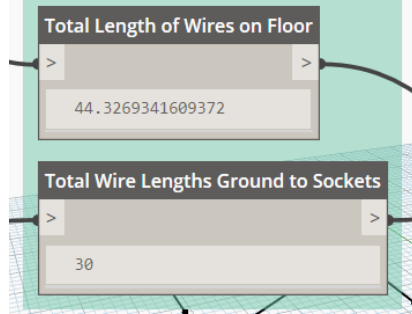


**Outputs:**

**Wire Lengths Sockets to Sockets**

1. Total Length of Wires on Floor
2. Total Wire Lengths Ground to Sockets: Or consider any Revit Element you selected i.e. DBs, Switches etc.

## Output: Wire Lengths Sockets to Sockets



The script also creates an Excel file in the following location of the respective PC:

D:\Dynamo\_Results\Sockets.csv

A	B
Socket Wires on Floor	44.32693
Ground to Sockets	30

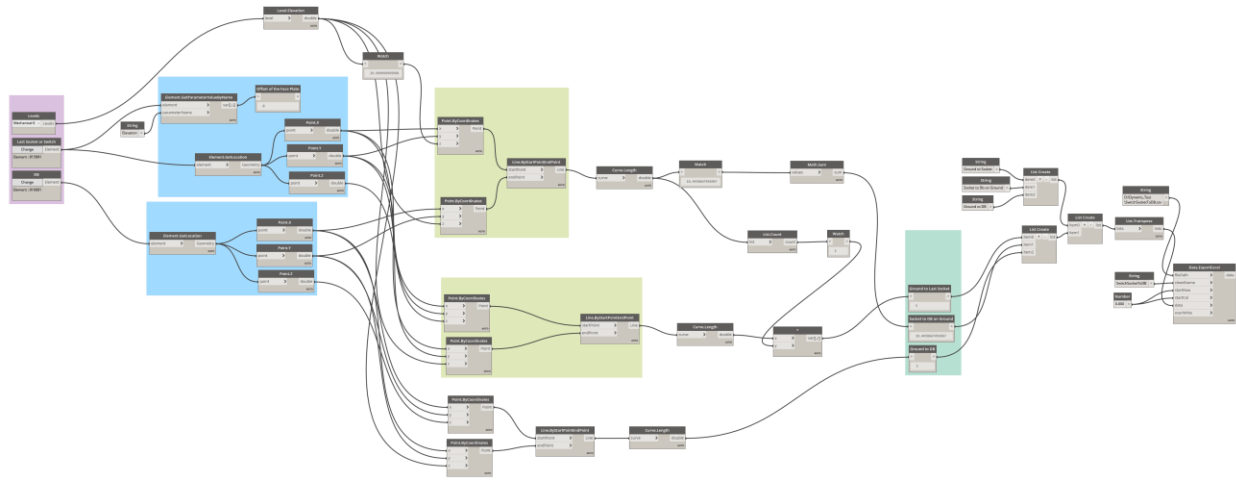
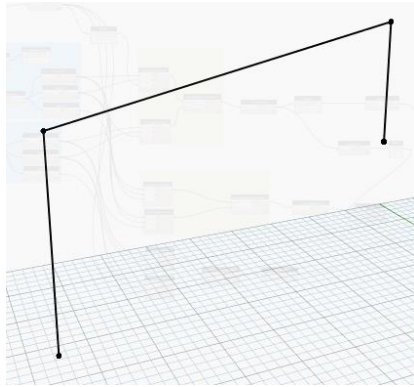
### Notes:

The Sockets or Revit Elements must have an Offset in order for the Ground to Sockets calculations to work. The Offset becomes zero normally in Copying Level Elements.

Calculate the Neutral, Phase and Earth as required, by using Excel, as the script gives length of a single wire. Make sure you have "D:\Dynamo\_Results\" on your respective PC.

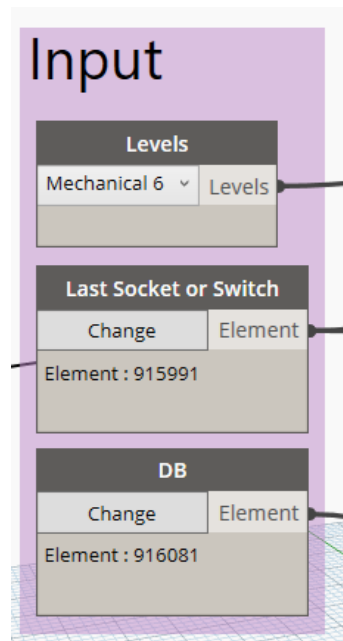
## Last Switch or Socket to DB Script

**Usage:** This script can be used to approximate the total wire running between two different Revit Elements i.e. Electrical Sockets, Switches or DB in our case. The script simply runs wire on ground or ceiling Level and also adding the wire required to reach the Revit Elements i.e. Electrical Sockets, Switches or DB in our case from ground or ceiling Level and thus provide the total length of the wire required from one point to another.



Inputs:

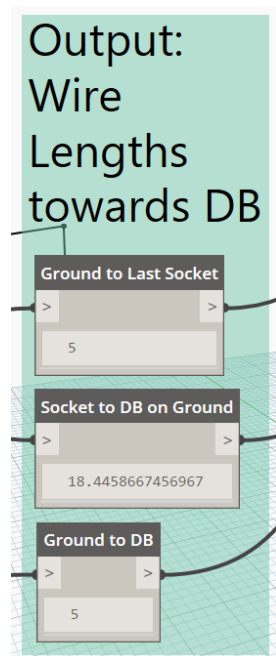
1. Level: Provide a Revit Level on which the wire will run on this can be ceiling or ground.
2. Last Socket or Switch: Provide the last Electrical Socket, DB or Switch or any Revit Element you consider the end point of the wire.
3. DB: Provide the first Electrical Socket, DB or Switch or any Revit Element you consider the starting point of the wire.



Outputs:

Wire Lengths towards DB

1. Ground to Last Socket: Or consider any Revit Element you selected i.e. DBs, Switches etc.
2. Socket to DB on Ground: This is the wire running on Ground, it can also be ceiling, depending on the Level you chose.
3. Ground to DB: Or consider any Revit Element you selected i.e. DBs, Switches etc.



The script also creates an Excel file in the following location of the respective PC:

D:\Dynamo\_Results\SwitchSocketToDB.csv

A	B
Ground to Socket	5
Socket to Db on Ground	18.44587
Ground to DB	5

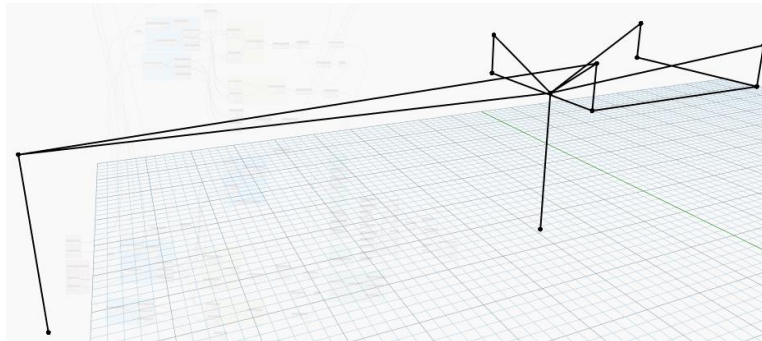
#### Notes:

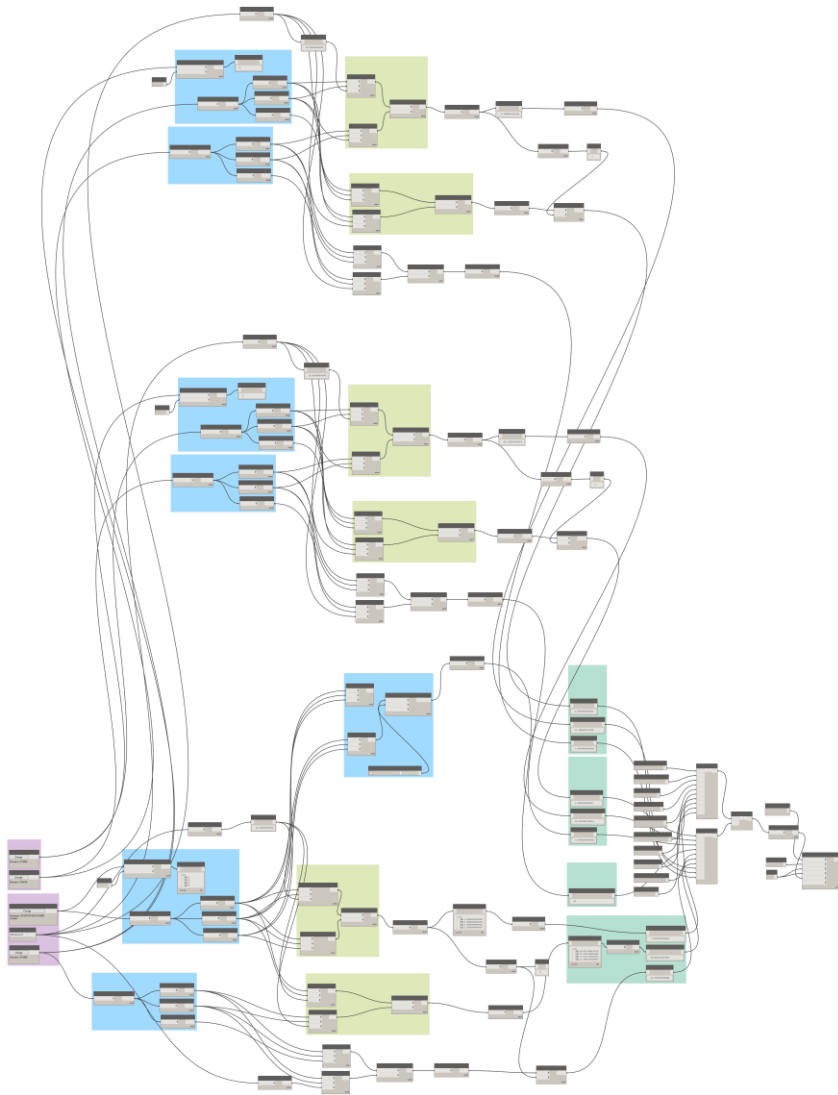
Choose the Levels correctly in order for the script to correctly work. Calculate the Neutral, Phase and Earth as required by using Excel, as the script gives length of a single wire. Make sure you have "D:\Dynamo\_Results\" on your respective PC.

## Lights to Switch Script

Usage: This is a special script because it is very specific for the purpose of approximating the wire lengths with respect to the Lighting Fixtures. This script calculates the Phase wire length along with the Neutral wire length.

The script calculates the wire lengths from the Switch to each Lighting Fixture or Fan thus providing the Phase wire length, it also calculates the Phase wire required from Switch to DB. For Neutral wire the script runs the wire through each Lighting Fixture or Fan and from the last Fixture or Fan, the wire runs towards the DB for Neutral wire approximation.





Inputs:

1. Last Light to DB
2. DB
3. Lights
4. Ceiling Level
5. Switch



# Input

Last Light to DB	
Change	Element
Element : 915980	

DB	
Change	Element
Element : 916079	

# Input

Lights	
Change	Elements
Elements : 915978 915979 915980 915981	

Ceiling Level	
Mechanical 5	Levels

Switch	
Change	Element
Element : 915966	

Outputs:

Wire Lengths Switch Phase towards DB

1. Ceiling to Switch Phase
2. Switch to DB on Ceiling Phase
3. Ceiling to DB Phase

Wire Lengths Neutral towards DB

4. Ceiling to Last Light Neutral
5. Light to DB on Ceiling Neutral

6. Ceiling to DB Neutral

Wire Lengths Neutral Lights to Lights

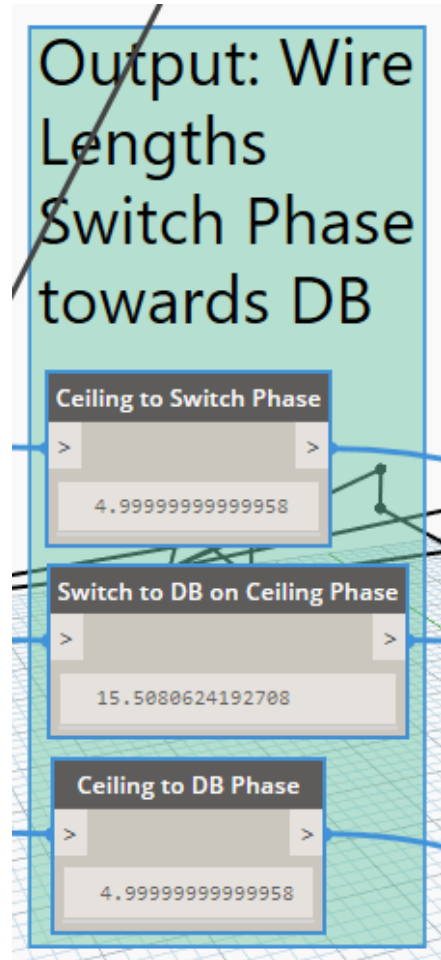
7. Total Length of Wires on Ceiling Neutral

Total Wire Length of Lights

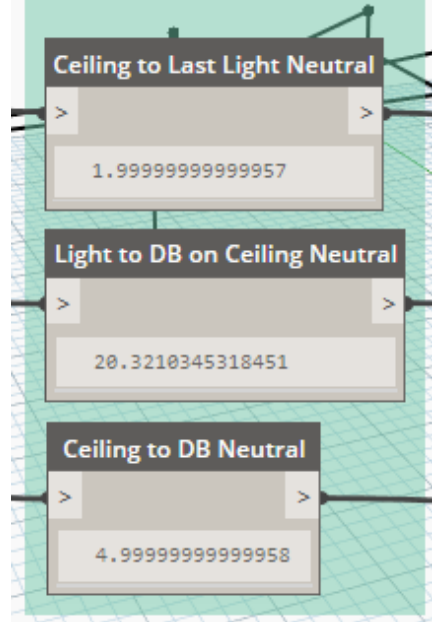
8. Suspended Lights to Ceiling Phase

9. Lights to Switch on Ceiling Phase

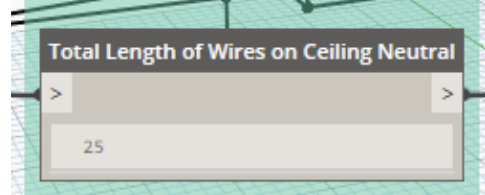
10. Ceiling to Switch Phase



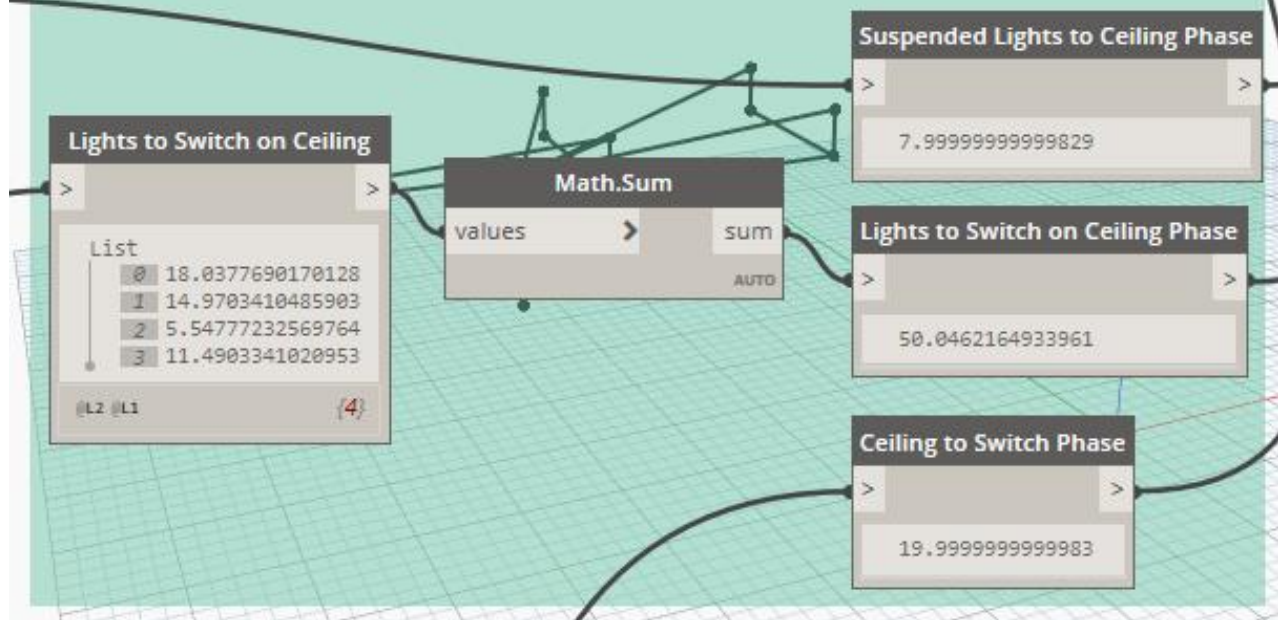
# Output: Wire Lengths Neutral towards DB



# Output: Wire Lengths Neutral Lights to Lights



# Output: Total Wire Length of Lights



The script also creates an Excel file in the following location of the respective PC:

D:\Dynamo\_Results\LightsToSwitch.csv

1	Ceiling to Last Light Neutral	2
2	Light to DB on Ceiling Neutral	20.32103
3	Ceiling to DB Neutral	5
4	Wires on Ceiling Neutral	25
5	Suspended Lights to Ceiling Phase	8
6	Lights to Switch on Ceiling Phase	50.04622
7	Ceiling to Switch Phase	20
8	Ceiling to Switch Phase	5
9	Switch to DB on Ceiling Phase	15.50806
10	Ceiling to DB Phase	5
..		

## Notes:

The Sockets or Revit Elements must have an Offset in order for the Ground to Sockets calculations to work. The Offset becomes zero normally in Copying Level Elements. Choose the Levels correctly in order for the script to correctly work. Make sure you have "D:\Dynamo\_Results\" on your respective PC.