

# Efficient and Profitable Digital Practice Management

Presenter

Ravi Ray Wood



# Section Break





## Ravi Ray Wood

**Ravi Wood** is a world renowned Subject Matter Expert (S.M.E) on Digital Design Leadership and Management of BIM projects across USA, UK, Middle East, Canada, Mexico, Singapore and India. He is a Licensed Architect from India and has completed Master's Degree from Kansas State University USA and VNIT.



## Ravi Ray Wood

**Ravi Wood** is an Award winning Guest Speaker at Autodesk University, Hong Kong BIM (HKIBIM) , IFMA RICS Sweden, IFMA India, NY Design Expo, AEC Next and several conferences across USA, Europe and Asia. Ravi Wood specializes in Digital Technology and BIM Leadership across top firms and has successfully completed more than 100 projects worth more than 150 million USD including Airports, Hospitals, Infrastructure, Stadiums, Residential, Commercial and Retail.



## Ravi Ray Wood

His astute acumen and proven track record in Digital Technology Leadership has set new global standards based on the premise of doing things “**The Right Way**”. His passion to innovate new processes in Digital Technology continues to help transform “challenges to opportunity” and “problems to successful solutions”.



## Ravi Ray Wood

- Speaker at Autodesk University 2019, 2017
- Top Rated Speaker at Hong Kong BIM (HKIBIM) 2016.
- Top Rated Speaker at RICS IFMA Stockholm Sweden 2017
- Top Rated Speaker at IFMA India 2016
- Guest Speaker at AEC Next Los Angeles 2018 at
- Speaker at New York Design Expo 2018.
- Upcoming Lectures at various Ivy League School programs for Architecture across USA.

# Introduction

Digital Practice Management is the most important aspect of any Design practice. This is one field that can define the success of a firm on current projects and also help define the very values and value addition a firm can offer. In the recent past AIA, RICS, IFMA and all design organizations has categorically agreed that Digital Practice Management is the Top Key Performing Index (KPI) sought after by the clients. In this day and age with Digital Design being the cornerstone of any practice it is imperative that the leadership in each firm recognize the need to optimize and channelize this aspect. A firm makes great investments in assets and people and while the pool of talent end up with similar soft and hard skills on roughly the same hardware with similar software's the results vary significantly from company to company.



# “Time is Money”

The vision and preamble of good Digital Practice is to be Efficient and Profitable. In this class we look to dwell on the four pillars of Digital Practice Management.

**(R.A.V.I.)**

**R**-Reconnaissance

**A**-Automation

**V**-Visualization

**I**-Innovation

Each of these Pillars has been described in the detail in the class in separate sections. Each Pillar description has been formatted with the subheading of Purpose, Planning and Process to Implement. The objective is to create an efficient environment of Digital Design which runs like “Clockwork”.

The Design can be a Masterpiece only if it Respects Time and this class is an effort in the same “Pursuit of Excellence”.





# Chapter 1 R. Reconnaissance



# R Reconnaissance

## Chapter 1 R. Reconnaissance

The pillar of “Reconnaissance” emphasizes on the benefits of continuous monitoring of performance of projects. There are three major facets that contribute to the success of the project: People, Technology (Hardware and Software) and Soft skills.

**Purpose**: The purpose is to effectively gauge the relevant information and source from the inferences from multitude of data. The importance is to provide and present data in a format that has ease of inferring meaningful thought development which in turns translates to “Good Judgement”.

**Planning**: The following classification system is a great way to monitor data.

Project Manager : Dashboards for Design criteria

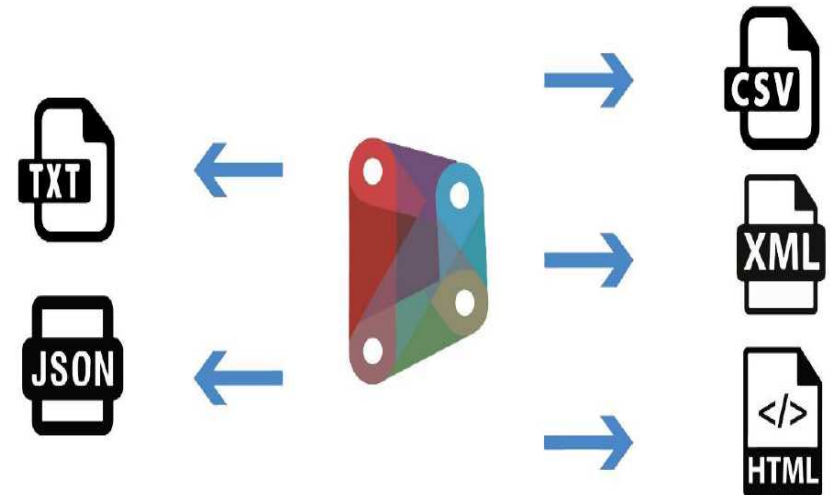
BIM Manager: Dashboard for File health

Construction Manager

# R Reconnaissance

## Process:

- There are multiple ways to collect and monitor data:
- CTC Datasuite + PAL- plugin
- Clarity + Plugin (can also run Macros or Dynamo). Clarity dashboards.
- RTV + Macros +Dynamo. Dynamo can collect information about what is in the files
- Unifi plugin
- Custom plugins to capture events
- Harvesting, parsing and analyzing journals and slogs
- Manual Macros and Dynamo.

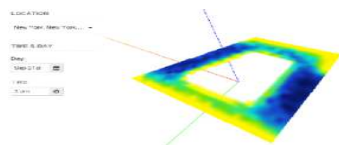


# R Reconnaissance

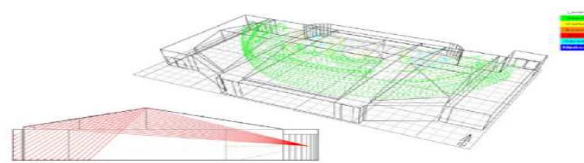
## Project Manager : Dashboards for Design criteria

The Design Parameters (DP) for effective and Agile Design Management. This Value Add enhances the Design by bring more value for the buck to the Client.

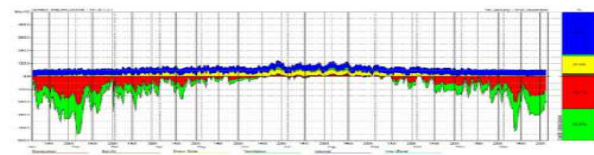
	Design Parameters	Code Analysis	Value Add (Avg)
1	Area/ Volume/ Code	Geometric/ IBC/ NFPA	1
2	Energy Analysis	LEED	2-5% energy savings
3	Daylighting	Code	10-15% more lit spaces
4	Accoustic	Industry Standard	5-7% Less Noise
5	Thermal Comfort	ASHRAE	10-15% Better Survey



Daylighting



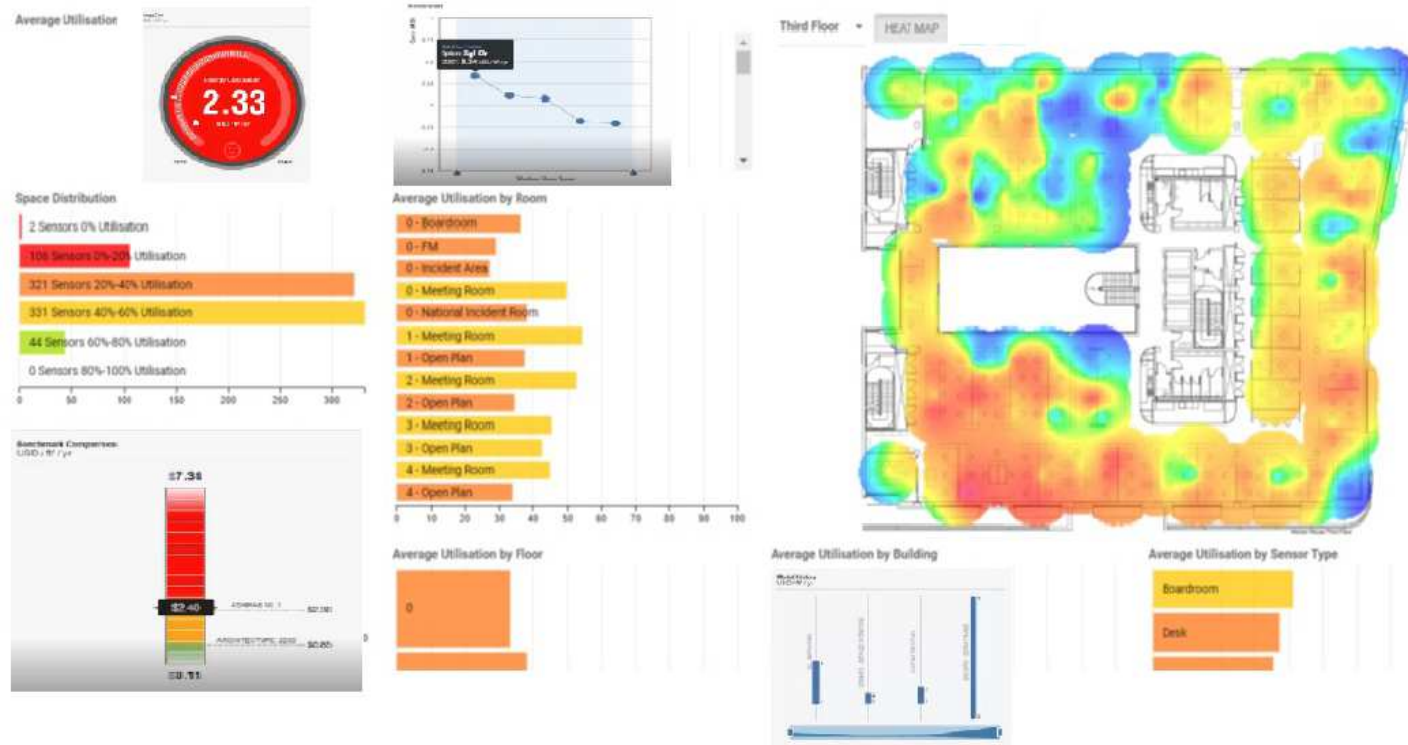
Accoustic



Thermal Analysis

# R Reconnaissance

## Energy Utilization



# R Reconnaissance

## BIM Manager: Dashboard for File health

There are essentially five levels at which the performance can be monitored:



		Level	Threshold	Color
1	Level 1	Family	0-2 mb	
2	Level 2	Individual File	50-200 mb	
3	Level 3	Project Level	<200mb	
4	Level 4	Discipline of Market		
5	Level 5	Holistic (Firm Wide)		



# R Reconnaissance

## BIM Manager: Dashboard for File health

These are the top 25 KPIs (Key Performance Indices) have been established.

	KPI	Stat	Color
1.	File Size	10-200 mb	
2.	Warnings	<200	
3.	Number of Groups	<10	
4.	Number of schedules	<15	
5.	Number of 3D Views	<15	
6.	Number of Design options	<10	
7.	Time to open	<25 sec	
8.	Family Instances	<200	
9.	Number of Room separation lines	<100	
10.	Phases	<10	
11.	Materials	<350	
12.	Views	<100	
13.	Groups instances	<20	
14.	Families Unplaced	<10	
15.	In place families	<10	
16.	Unenclosed Rooms	<10	
17.	Unplaced Rooms	<15	
18.	Spaces	<15	
19.	Uneclosed spaces	<15	
20.	Unplaced spaces	<15	
21.	View templates	<10	
22.	Number of Images	<25	
23.	Identical elements in space	<10	
24.	Unjoined geometry	<25	
25.	Duplicate mark values	<10	



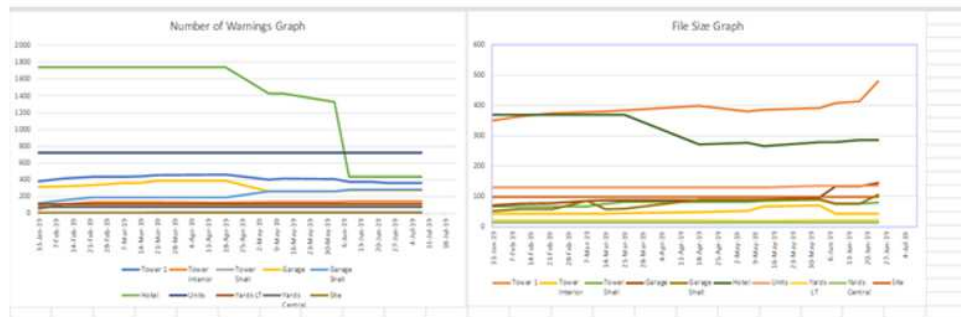
# R Reconnaissance

## BIM Manager: Dashboard for File health

## Warning Pie Chart

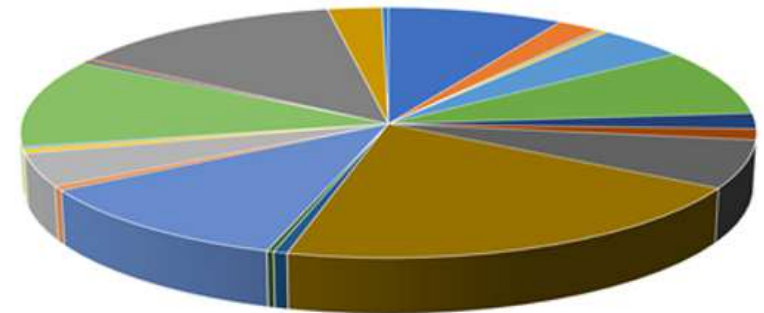
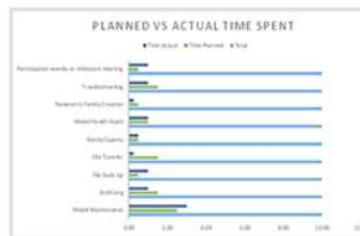
### Custom Dashboards for File Management

#### File Management Graphs- Weekly Tracking



### Custom Dashboards for Model Maintenance Tasks (*Planned vs Actual*)

PROJECT SPECIFIC RESPONSIBILITIES					
Task	Daily	Weekly	Monthly	@ Milestones	Clarity
Model maintenance	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Archiving	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
File Back-ups	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
File Transfer	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Family Exports	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Model Health Audit	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Parametric Family creation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Troubleshooting	Yes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Participating weekly or milestone meeting	Yes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



- Can't create geometry for one or more cells.
- Could not create Revit. Failed to cut wall.
- Elements have duplicate "Name" values.
- Elements have duplicate "Number" values.
- Elements have duplicate "Type Name" values.
- Highlighted floors overlap.
- Highlighted lines overlap. Lines may not form closed loops.
- Highlighted lines overlap. Lines may not form closed loops. You can select one of the overlapping elements to attribute it to the group it belongs to.
- Highlighted room separation lines overlap. One of them may be ignored when Room finds room boundaries. Delete one of the lines.
- Highlighted walls are attached to, but miss, the highlighted targets.
- Highlighted walls overlap. One of them may be ignored when Room finds room boundaries. Use Cut Geometry to embed one separation into the other.
- Lines conflict with joined walls.
- Line in Sketch is slightly off axis and may cause inaccuracies.
- Settings are placed completely outside the host. It may change the appearance of the settings in the host and its position.
- Room separation line is slightly off axis and may cause inaccuracies.

# R Reconnaissance

## BIM Manager: Dashboard for File health

## MONITORING

Id	Library	Command	UserName	Date
13743	BH_Revit2017_Ribbon	BatchRename	mllia	23/10/2017 17:49:45
13744	BH_Revit2016_Ribbon	ExportSchedule	ngubser	23/10/2017 18:44:49
13745	BH_Revit2016_Ribbon	Reorder	ngubser	23/10/2017 18:45:49
13746	BH_Revit2016_Ribbon	Settings	ngubser	23/10/2017 18:46:50
13747	BH_Revit2016_Ribbon	ManageIssues	ngubser	23/10/2017 18:47:32
13748	BH_Revit2018_Ribbon	ManageIssues	jofius	24/10/2017 10:07:10
13749	BH_Revit2018_Ribbon	ManageIssues	jofius	24/10/2017 10:07:59
13750	BH_Revit2018_Ribbon	ExportSchedule	jofius	24/10/2017 11:01:06
13751	BH_Revit2018_Ribbon	ExportSchedule	jofius	24/10/2017 11:22:34
13752	BH_Revit2017_Ribbon	ManageIssues	fulier	24/10/2017 11:45:17
13753	BH_Revit2018_Ribbon	ExportSchedule	jofius	24/10/2017 12:08:21
13754	BH_Revit2017_Ribbon	BatchRename	adolinsk	24/10/2017 12:31:06
13755	BH_Revit2018_Ribbon	ExportSchedule	jofius	24/10/2017 12:49:39
13756	BH_Revit2018_Ribbon	ExportSchedule	jofius	24/10/2017 12:49:39
13757	BH_Revit2016_Ribbon	ExportSchedule	tmeineck	24/10/2017 12:49:39
13758	BH_Revit2016_Ribbon	ImportSchedule	tmeineck	24/10/2017 12:49:39
13759	BH_Revit2017_Ribbon	Settings	rtevens	24/10/2017 12:49:39
13760	BH_Revit2017_Ribbon	Settings	jzolkow	24/10/2017 12:49:39
13761	BH_Revit2017_Ribbon	Users	jzolkow	24/10/2017 12:49:39
13762	BH_Revit2017_Ribbon	ExportSchedule	rtevens	24/10/2017 12:49:39
13763	BH_Revit2017_Ribbon	ExportSchedule	rtevens	24/10/2017 12:49:39
13764	BH_Revit2017_Ribbon	CreateUserTemplates	jzolkow	24/10/2017 12:49:39
13765	BH_Revit2016_Ribbon	ExportSchedule	tmeineck	24/10/2017 12:49:39
13766	BH_Revit2016_Ribbon	ImportSchedule	tmeineck	24/10/2017 12:49:39
13767	BH_Revit2016_Ribbon	ImportSchedule	tmeineck	24/10/2017 12:49:39
13768	BH_Revit2016_Ribbon	ExportSchedule	tmeineck	24/10/2017 12:49:39
13769	BH_Revit2016_Ribbon	ExportSchedule	tmeineck	24/10/2017 12:49:39
13770	BH_Revit2016_Ribbon	ExportSchedule	tmeineck	24/10/2017 12:49:39
13771	BH_Revit2016_Ribbon	ImportSchedule	tmeineck	24/10/2017 12:49:39
13772	BH_Revit2016_Ribbon	ImportSchedule	tmeineck	24/10/2017 12:49:39

Picture 2 – User clicks monitoring

Id	SearchType	Phrase	Path
7260	2	fire	\\SRV-bath02\unon_project\Bath Region\Bath Building Services\Bath MEP Revit\Development Work (by permission only)\Addin\Files\2017\3.1.1.1.settings
7261	0	switched socket	L:\BH-Revit\Revit2017\Libraries\UK_BH Library\BH MEP\Electrical\Sockets\BHm_Electrical\Fixtures_Sockets.rfa
7262	0	fan coil	L:\BH-Revit\Revit2017\Libraries\UK_BH Library\BH MEP\Mechanical\HVAC Equipment\BHm_MechEquip_HVACEquipmentFanCoilUnitHorizontal.rfa
7263	0	mvr	L:\BH-Revit\Revit2017\Libraries\UK_BH Library\BH MEP\Mechanical\HVAC Equipment\BHm_MechEquip_HVACEquipmentMVR.rfa
7264	0	mvr	L:\BH-Revit\Revit2017\Libraries\UK_BH Library\BH MEP\Mechanical\HVAC Equipment\BHm_MechEquip_HVACEquipmentMVR.rfa
7265	0	buffer vessel	L:\BH-Revit\Revit2017\Libraries\UK_BH Library\BH MEP\Mechanical\HVAC Equipment\Symbols\BHm_DetailItem_HVACEquipmentPressureVessel.rfa
7266	0	grille	L:\BH-Revit\Revit2017\Libraries\UK_BH Library\BH MEP\Mechanical\HVAC Air Terminals\BHm_AirTerminals_AirTerminalsExtractGrilleCircularCeiling
7267	0	grille	L:\BH-Revit\Revit2017\Libraries\UK_BH Library\BH MEP\Electrical\Isolators\BHm_Electrical\Fixtures_Isolators.rfa
7268	0	bus	L:\BH-Revit\Revit2017\Libraries\UK_BH Library\BH MEP\Electrical\Isolators\BHm_Electrical\Fixtures_Isolators.rfa
7269	0	bus	L:\BH-Revit\Revit2017\Libraries\UK_BH Library\BH MEP\Electrical\Isolators\BHm_Electrical\Fixtures_Isolators.rfa
7270	0	busbar	L:\BH-Revit\Revit2017\Libraries\UK_BH Library\BH MEP\Trunking\Busbar Trunking\Fittings\Elbows\BHm_BusbarFitting_JunctionUnitSmallPower.rfa
7271	0	busbar	L:\BH-Revit\Revit2017\Libraries\UK_BH Library\BH MEP\Trunking\Busbar Trunking\Fittings\Elbows\BHm_BusbarFitting_JunctionUnitSmallPower.rfa
7272	0	busbar	L:\BH-Revit\Revit2017\Libraries\UK_BH Library\BH MEP\Trunking\Busbar Trunking\Fittings\Elbows\BHm_BusbarFitting_JunctionUnitSmallPower.rfa
7273	0	module	L:\BH-Revit\Revit2017\Libraries\UK_BH Library\BH MEP\Electrical\Panels\BHm_Lighting\Devices_Panels.rfa
7274	0	module	L:\BH-Revit\Revit2017\Libraries\UK_BH Library\BH MEP\Electrical\Panels\BHm_Lighting\Devices_Panels.rfa
7275	0	module	L:\BH-Revit\Revit2017\Libraries\UK_BH Library\BH MEP\Electrical\Panels\BHm_Lighting\Devices_Panels.rfa
7276	0	module	L:\BH-Revit\Revit2017\Libraries\UK_BH Library\BH MEP\Electrical\Panels\BHm_Lighting\Devices_Panels.rfa
7277	0	grille	L:\BH-Revit\Revit2017\Libraries\UK_BH Library\BH MEP\Mechanical\HVAC Air Terminals\BHm_AirTerminals_AirTerminalsSupplyGrilleRectangularCeiling.rfa
7278	0	radiator	L:\BH-Revit\Revit2017\Libraries\UK_BH Library\BH MEP\Mechanical\HVAC Equipment\BHm_MechEquip_HVACEquipmentRadiator.rfa
7279	0	speaker	L:\BH-Revit\Revit2017\Libraries\UK_BH Library\BH MEP\Electrical\Communication\BHm_DataDevices_CommunicationSpeakerCeiling.rfa
7280	0	speaker	L:\BH-Revit\Revit2017\Libraries\UK_BH Library\BH MEP\Electrical\Communication\BHm_DataDevices_CommunicationSpeakerCeiling.rfa
7281	0	air terminal	L:\BH-Revit\Revit2017\Libraries\UK_BH Library\BH MEP\Mechanical\HVAC Air Terminals\BHm_AirTerminals_AirTerminalsExhaustOpenEndCircular.rfa
7282	0	air terminal	L:\BH-Revit\Revit2017\Libraries\UK_BH Library\BH MEP\Mechanical\HVAC Air Terminals\BHm_AirTerminals_AirTerminalsExhaustOpenEndCircular.rfa
7283	0	air terminal	L:\BH-Revit\Revit2017\Libraries\UK_BH Library\BH MEP\Mechanical\HVAC Air Terminals\BHm_AirTerminals_AirTerminalsExhaustOpenEndCircular.rfa
7284	0	air terminal	L:\BH-Revit\Revit2017\Libraries\UK_BH Library\BH MEP\Mechanical\HVAC Air Terminals\BHm_AirTerminals_AirTerminalsExhaustOpenEndCircular.rfa
7285	0	KEY	L:\BH-Revit\Revit2017\Libraries\UK_BH Library\BH MEP\Electrical\Switches\BHm_Lighting\Devices_Switches.rfa
7286	0	SWITCH	L:\BH-Revit\Revit2017\Libraries\UK_BH Library\BH MEP\Electrical\Switches\BHm_Lighting\Devices_Switches.rfa
7287	0	SWITCH	L:\BH-Revit\Revit2017\Libraries\UK_BH Library\BH MEP\Electrical\Switches\BHm_Lighting\Devices_Switches.rfa
7288	2	Air Terminal	C:\Program Files (x86)\Buro Happold\Adroit\2017\Settings\EquipmentSchedules.rfa

Picture 3 – User search monitoring

Picture 4 – User logs monitoring

Id	UserName	LogBegin	LogEnd	AddinVersion	RevitVersion
74923	tgorski	24/10/2017 09:11:05	24/10/2017 17:40:28	1.2.24	2016
74924	Phagley	24/10/2017 10:24:24	24/10/2017 16:42:05	1.3.14	2017
74925	ekimicow	24/10/2017 08:49:29	24/10/2017 17:42:38	2.1.30	2015
74926	jlechoch	24/10/2017 09:22:00	24/10/2017 17:42:56	1.2.24	2016
74927	jackson	24/10/2017 08:16:24	24/10/2017 16:43:31	1.4.5	2018
74928	chaele	24/10/2017 08:40:49	24/10/2017 08:43:39	1.2.24	2016
74929	rmegucka	24/10/2017 12:02:31	24/10/2017 16:43:41	1.3.14	2017
74930	dbulakh	24/10/2017 13:15:27	24/10/2017 17:44:20	1.2.24	2016
74931	gdyole	24/10/2017 16:26:15	24/10/2017 16:44:23	1.3.14	2017
74932	tgorski	24/10/2017 09:08:53	24/10/2017 17:44:40	1.2.24	2016
74933	rmajster	24/10/2017 09:58:23	24/10/2017 17:45:39	2.1.30	2015
74934	emielnic	24/10/2017 09:38:12	24/10/2017 17:49:31	1.2.24	2016
74935	rmukos	24/10/2017 09:55:56	24/10/2017 16:50:51	1.3.14	2017
74936	pharis	24/10/2017 09:28:37	24/10/2017 16:51:04	1.3.14	2017
74937	rmukos	24/10/2017 16:20:37	24/10/2017 16:51:45	1.3.14	2017
74938	milia	24/10/2017 12:02:28	24/10/2017 17:52:01	1.3.14	2017
74939	joke	24/10/2017 09:18:01	24/10/2017 17:53:08	1.2.24	2016
74940	apullen	24/10/2017 11:11:01	24/10/2017 16:55:41	2.1.30	2015
74941	apullen	24/10/2017 09:28:51	24/10/2017 16:55:50	2.1.30	2015
74942	apullen	24/10/2017 10:28:18	24/10/2017 16:56:38	2.1.30	2015
74943	fulier	23/10/2017 16:37:04	24/10/2017 16:56:29	1.3.14	2017
74944	gdyole	24/10/2017 16:53:01	24/10/2017 17:06:38	1.3.14	2017
74945	pmwett	24/10/2017 14:46:22	24/10/2017 17:04:37	1.3.14	2017
74946	chong	24/10/2017 08:53:32	24/10/2017 09:04:58	2.1.30	2015
74947	jlechoch	24/10/2017 17:45:54	24/10/2017 18:06:59	1.2.24	2016
74948	chong	24/10/2017 09:06:23	24/10/2017 09:07:33	2.1.30	2015
74949	hulliam	24/10/2017 08:34:07	24/10/2017 17:07:47	1.4.5	2018
74950	gdyole	24/10/2017 14:30:45	24/10/2017 17:11:40	1.3.14	2017
74951	gdyole	24/10/2017 17:06:55	24/10/2017 17:12:31	1.3.14	2017
74952	fulier	24/10/2017 16:56:03	24/10/2017 17:12:31	1.3.14	2017

Standard	23/10/2017 11:47:07
Standard	23/10/2017 11:47:17
Area Control Module	23/10/2017 12:16:43
Area Control Module	23/10/2017 12:17:17
Area Control Module	23/10/2017 12:18:18
Area Control Module	23/10/2017 12:18:18
Supply Grille	23/10/2017 12:31:16
Radiator	23/10/2017 14:39:00
Ceiling Speaker	23/10/2017 17:30:15
Wall Speaker	23/10/2017 17:30:34
Circular Extract Open End	24/10/2017 09:34:51
Linear Extract (Blades)	24/10/2017 09:52:20
Linear slot	24/10/2017 10:05:37
Supply Linear Slot	24/10/2017 10:06:18
Key Switch (1 Gang)	24/10/2017 11:20:00
Standard Switch (2 Gangs)	24/10/2017 11:24:54
Standard Switch (3 Gangs)	24/10/2017 11:32:50
Air Terminals - Ceiling Extract Air Diffusers	24/10/2017 13:25:18

# R Reconnaissance

## BIM Manager: Dashboard for File health



# R Reconnaissance

## BIM Manager: Dashboard for File health

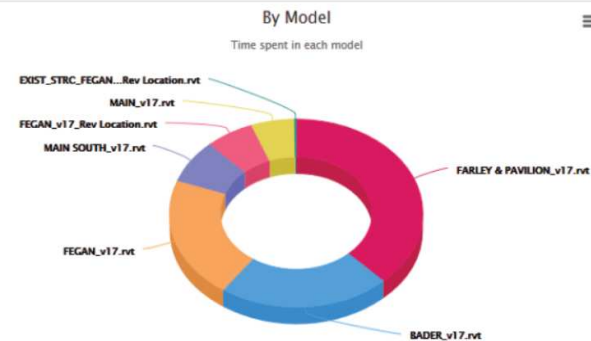
Property	Value
Design Options	6
Families	1,277
Groups	18
In-place Families	501
Family Instances	55,172
Levels	42
Materials	340
Phases	17
Placed Rooms	2,127
Placed Spaces	0
Unenclosed Rooms	71
Unenclosed Spaces	0
Unplaced Families	134
Unplaced Rooms	127
Unplaced Spaces	0
Views	2,606
View Filters	17
Worksets	20

Warning Index ?



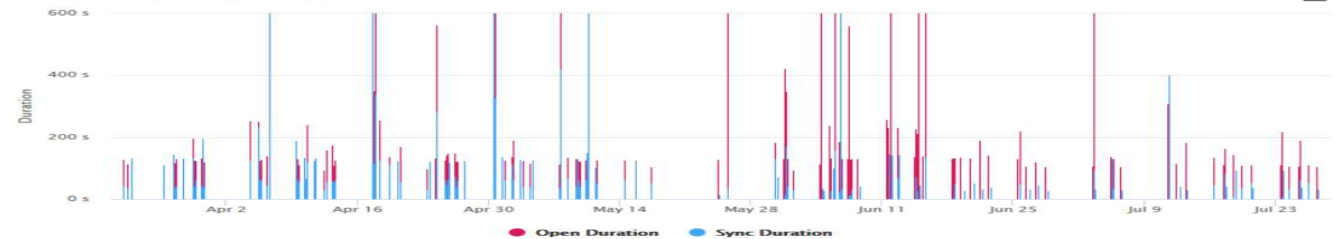
### Contributor Dashboard

Contributor:

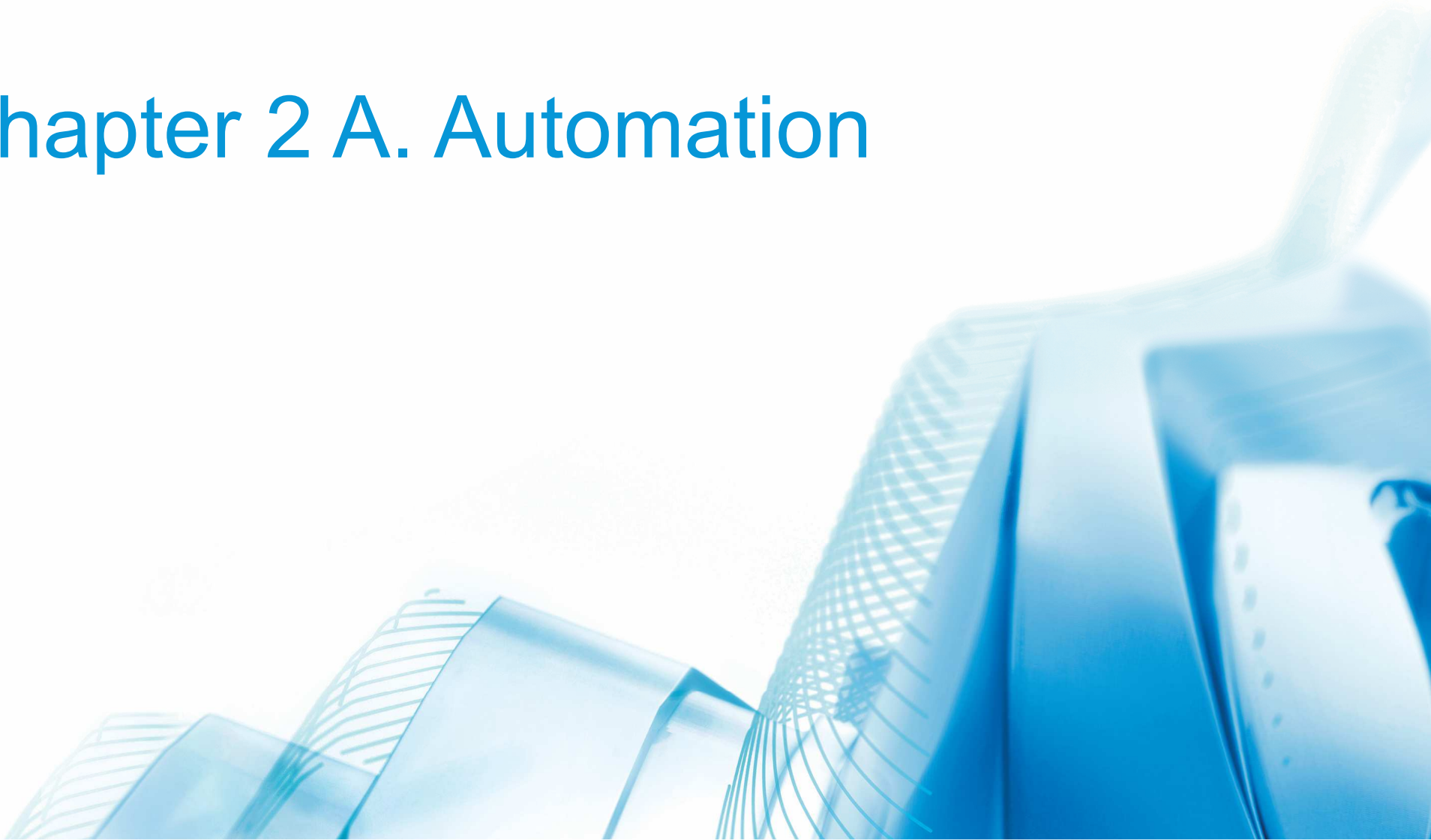


Property	Value
Hard Disk Drive	Disk drive; 223.57 GB
Video	Intel(R) HD Graphics Family; RAM:1 GB; Driver:10.18.10.3871
Motherboard	Hewlett-Packard
Operating System	Microsoft Windows 7 Enterprise N, 64-bit, 6.1.7601
CPU	GenuineIntel; GHz 2.7
Machine Name	WK_TELDNA
BIOS	Hewlett-Packard
Memory	16
Memory Slots	2
IP Address	10.112.1.101

### Save to Central / File Open Duration



# Chapter 2 A. Automation



# A Automation

## Chapter 2 A. Automation (“Scripting Success”)

The pillar of “Automation” is to replace a task that is time consuming and repetitive with a smart dynamo script.

**Purpose**: The purpose is to reduce at least cut down 10% of time consumed every year on mundane repetitive tasks.

**Planning**: The following steps can help achieve the goal:

Create “SMART” (Specific, Measurable, Achievable, Relevant and Time bound) Dynamo scripts and solutions.

Maintain an organized color coded library of scripts.

List of Scripts for Project Managers – Creation and Visualization

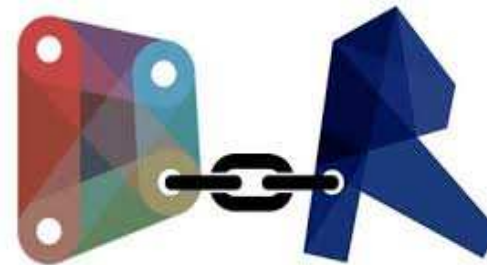
List of Scripts for BIM Managers- Data Mining and Handling Big Data.

# A Automation

## Process:

### a.Create SMART Script:

The world is full of people learning Dynamo and it is crucial to ensure we measure twice and cut once. The process and result needs ossification prior deep diving into scripting which can be “Costly” time intensive investment





# A Automation

## b. Maintain an organized color coded library of scripts.

The following process is effective and helps the user have easy access and relatability to the scripts.

1. Color key consistent.
2. Organizational Graph flow
3. Organized Dynamo player

### Consistent color key

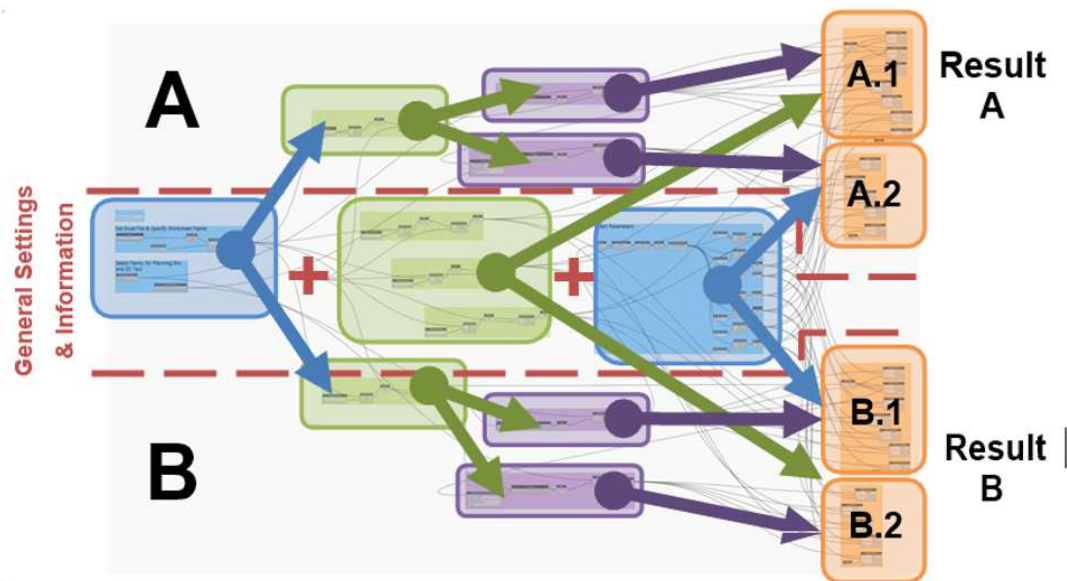
		Color	Classification
1		Gray	User Selection and setting
2		Blue	Recon and discover Information
3		Orange	Process Data
4		Yellow	Create elements in Dynamo
5		Green	Creating Elements in Revit
6		Purple	Writing Data



# A Automation

## 2. Organized Graph flow

It is important to arrange your Dynamo Graphs to be intuitive collections of items. This can be accomplished by creating groups of node-routines which perform a particular function within the graph. Arranging these groups in a timeline format will help illustrate flow from one group to another with the resulting groups aligning at the end.



Credit: DynamForum

## 3. Organized Dynamo player

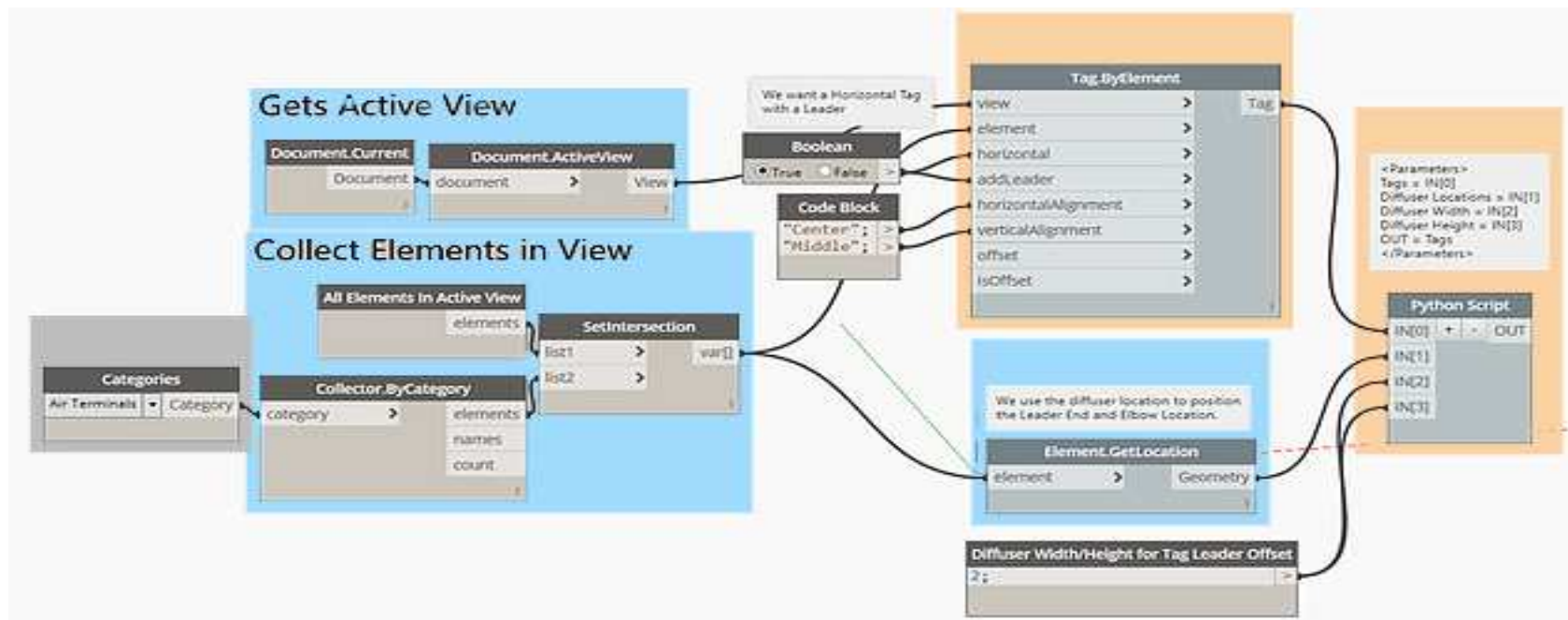


# A Automation

## a. List of Scripts for Project Managers

The below is the list and script for multitude of mundane tasks that can conserve time.

1. Dynamo Auto Tagging: Helps reduce time on each sheet by at least 45 mins.

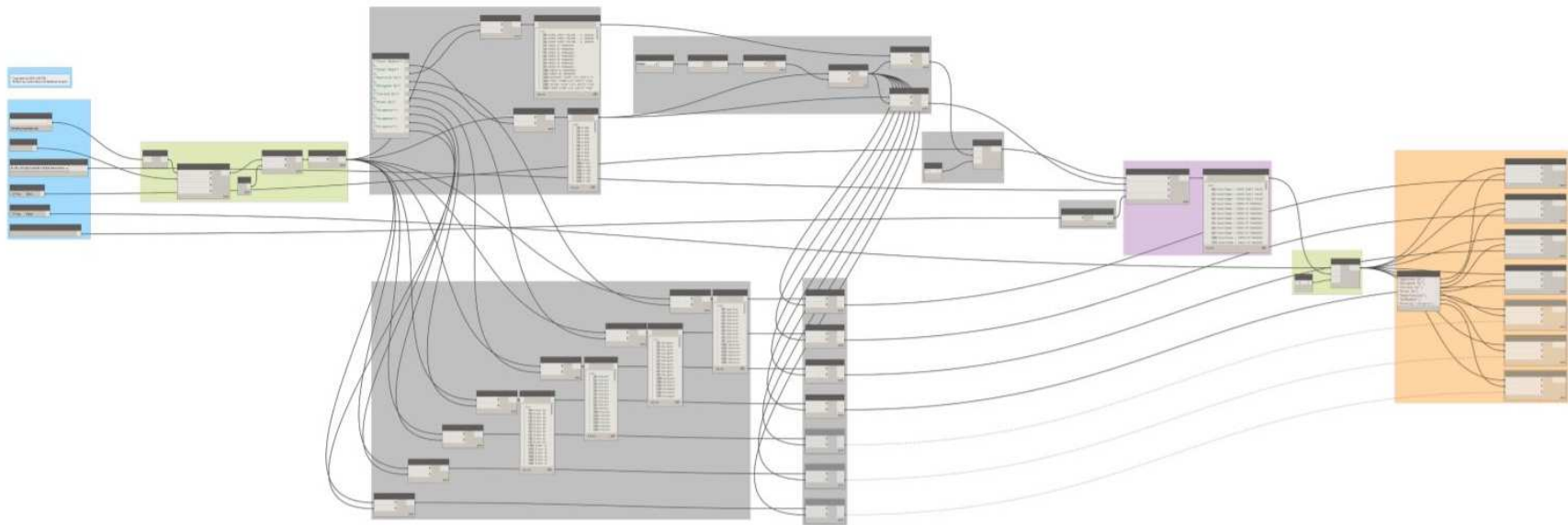


# A Automation

## a. List of Scripts for Project Managers

The below is the list and script for multitude of mundane tasks that can conserve time.

2. Dynamo Sheet Creator: Helps reduce project set up by 30 mins.

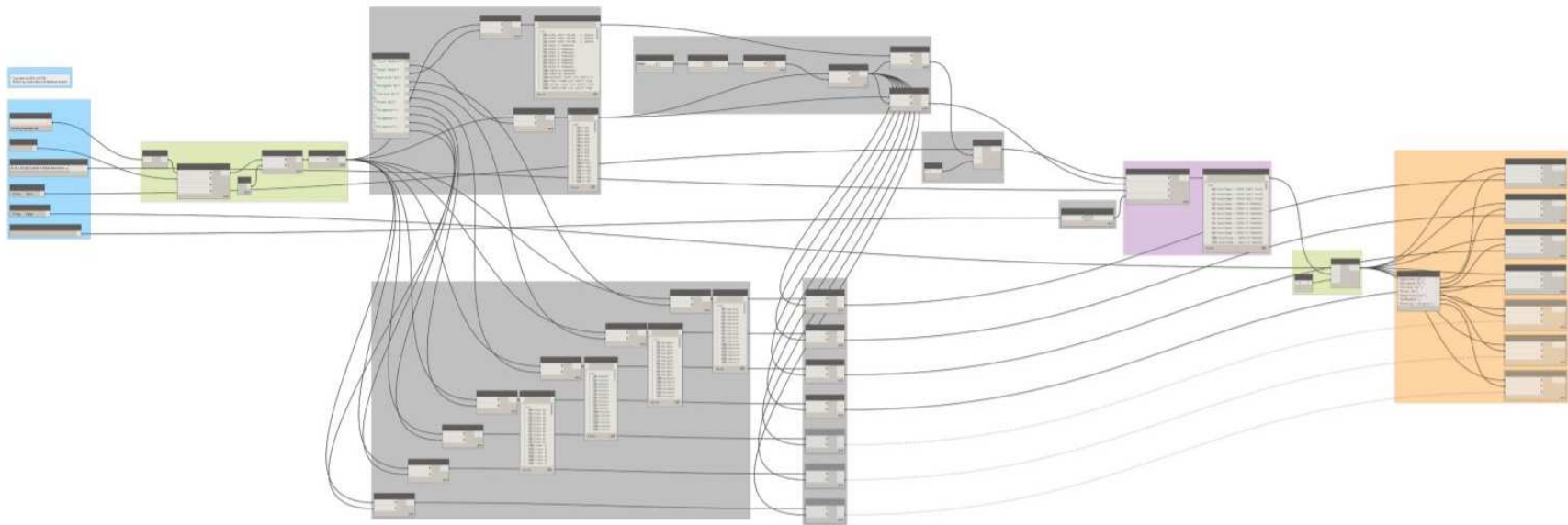


# A Automation

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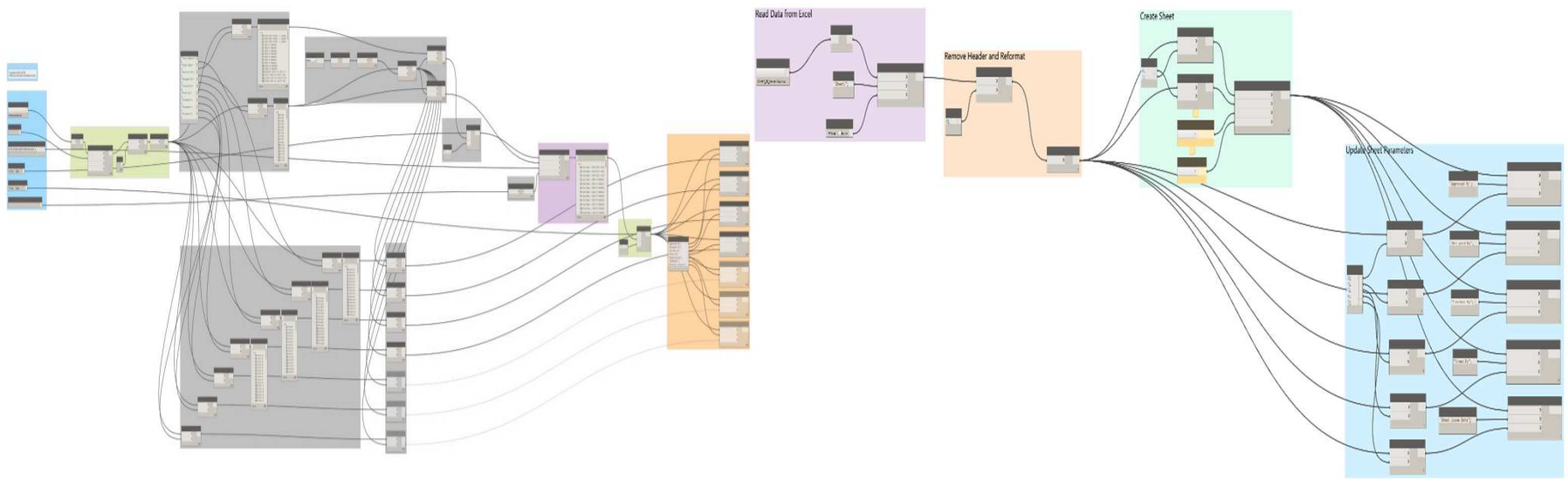


# A Automation

## a. List of Scripts for Project Managers

The below is the list and script for multitude of mundane tasks that can conserve time.

2. Dynamo Sheet Creator: Helps reduce project set up by 30 mins.

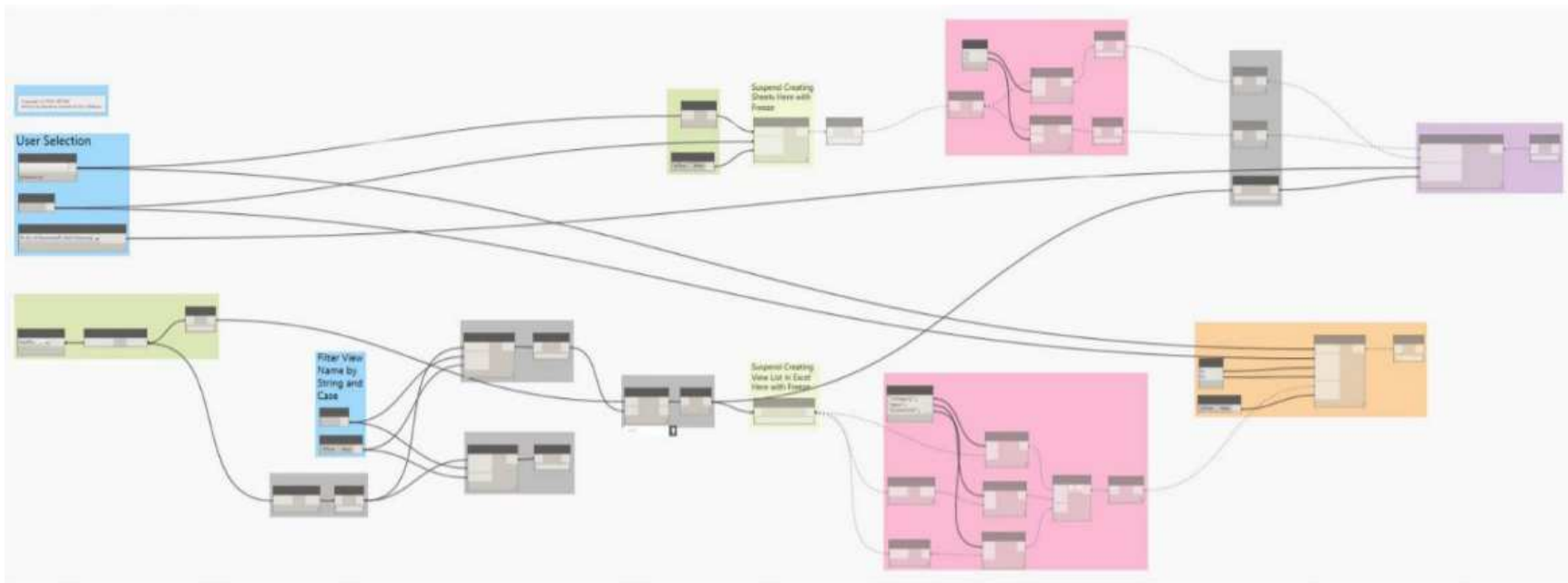


# A Automation

### a. List of Scripts for Project Managers

The below if the list and script for multitude of mundane tasks that can conserve time.

### 3. Dynamo Place Views on Sheets: Helps save 10 min per sheet.



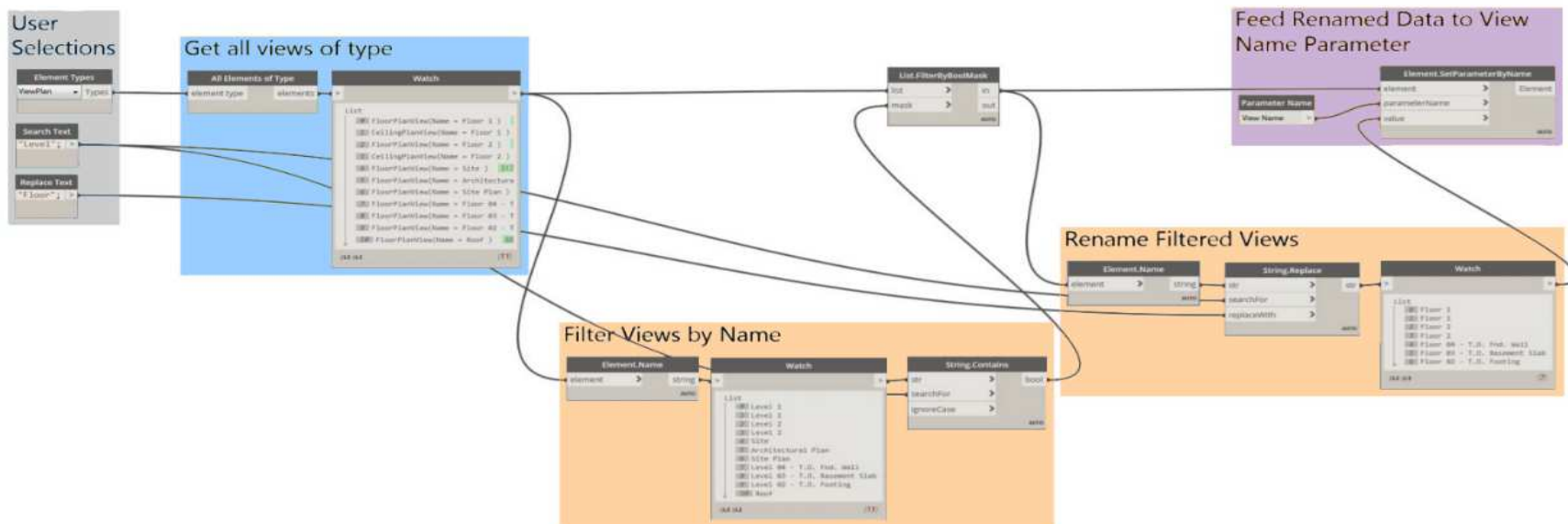


# A Automation

## a. List of Scripts for Project Managers

The below is the list and script for multitude of mundane tasks that can conserve time.

4. Dynamo Rename Views: Helps save 15 mins per sheet.

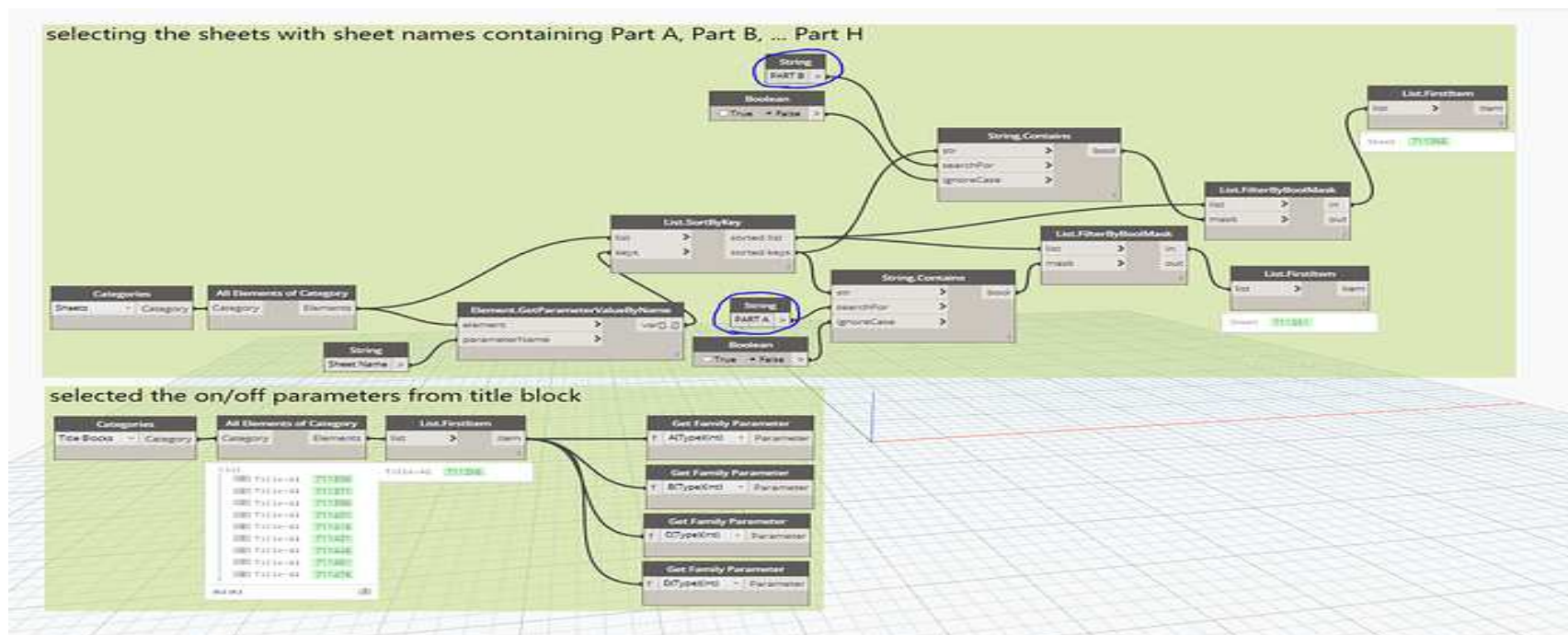


# A Automation

## a. List of Scripts for Project Managers

The below if the list and script for multitude of mundane tasks that can conserve time.

5. Dynamo Update Title Block: Saves 15 mins every time the task is to be done.

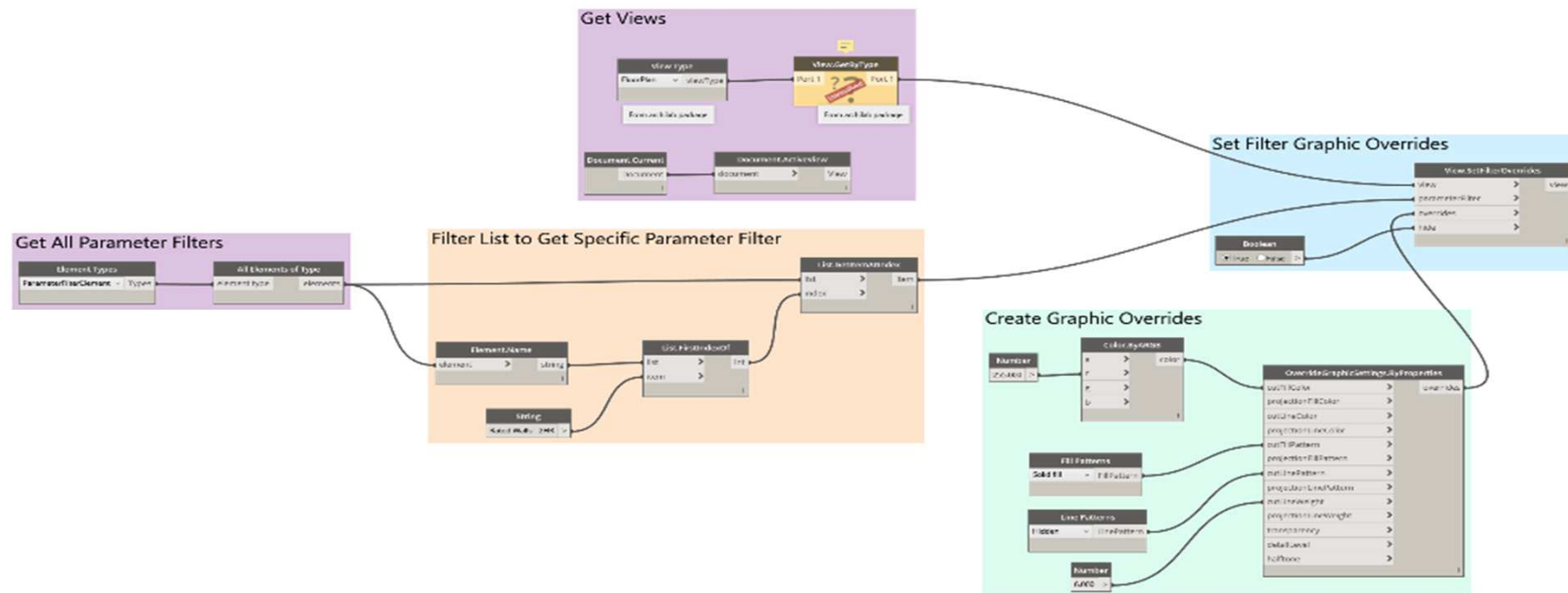


# A Automation

## a. List of Scripts for Project Managers

The below is the list and script for multitude of mundane tasks that can conserve time.

6. Dynamo Add Filter to View: Helps save 30 mins.

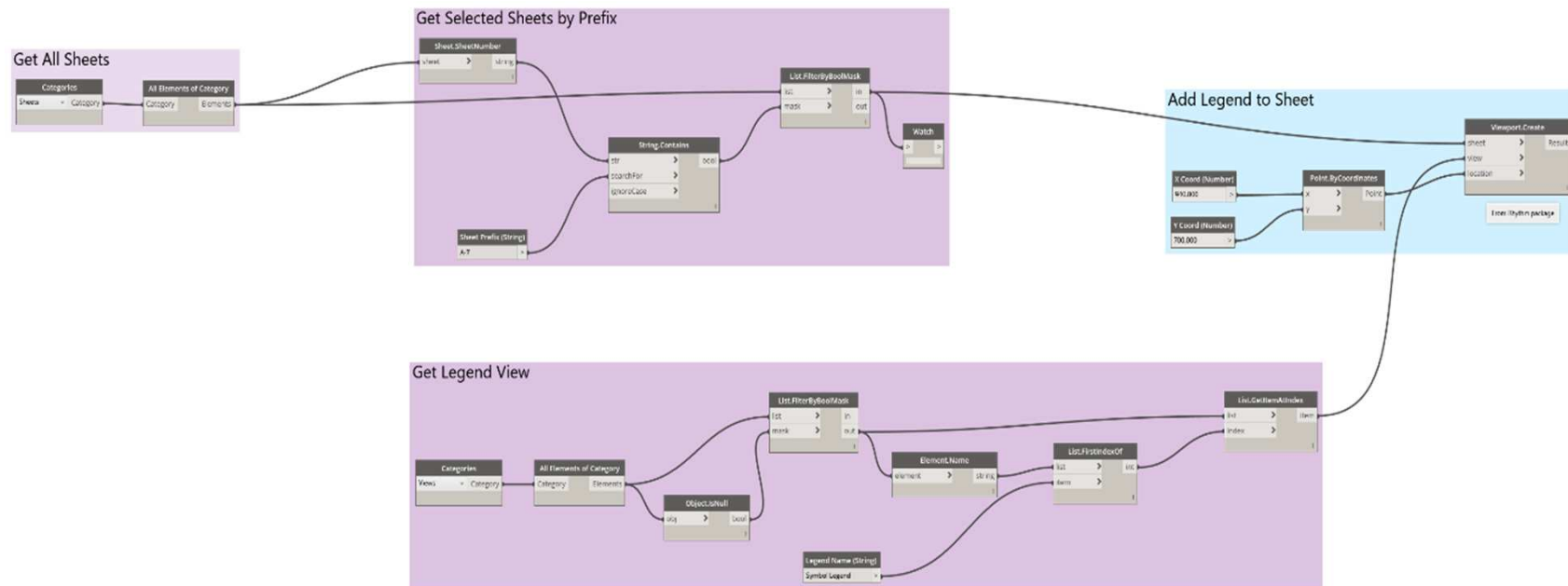


# A Automation

## a. List of Scripts for Project Managers

The below is the list and script for multitude of mundane tasks that can conserve time.

7. Dynamo Add Legends to sheets : Helps save 15 mins.

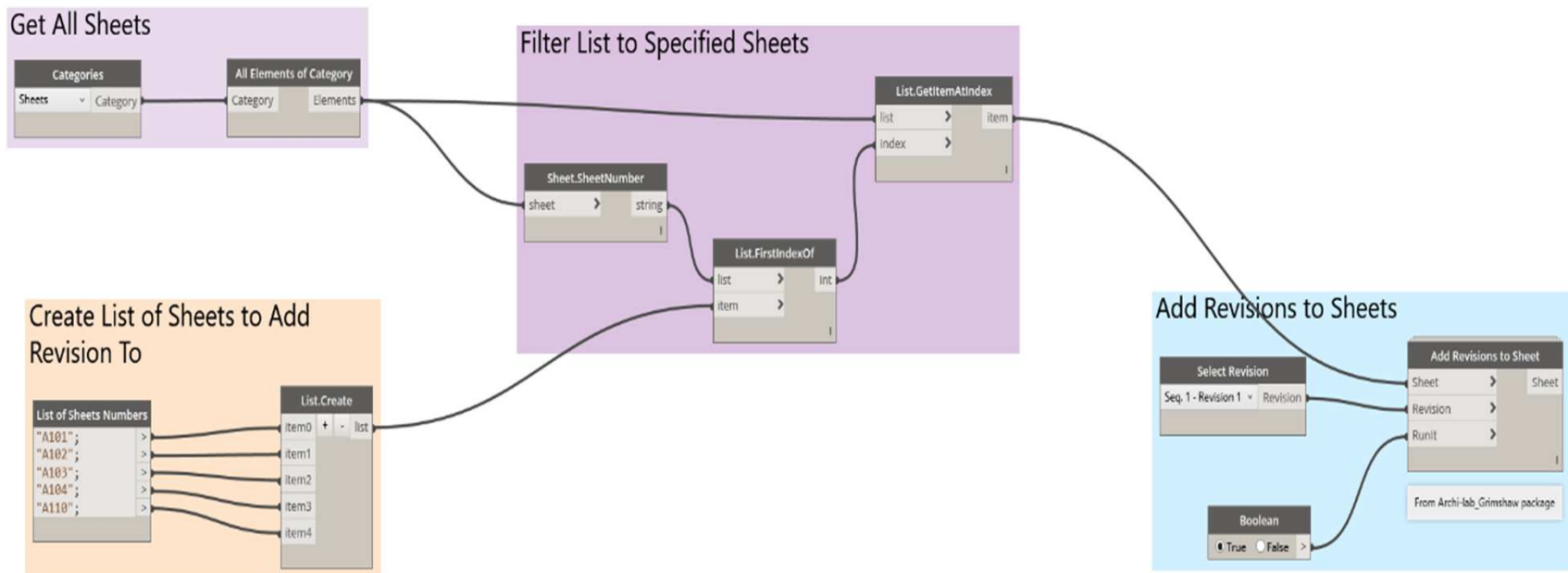


# A Automation

## a. List of Scripts for Project Managers

The below if the list and script for multitude of mundane tasks that can conserve time.

8. Dynamo Add Revisions to Sheets: Helps save 45 mins.



# A Automation

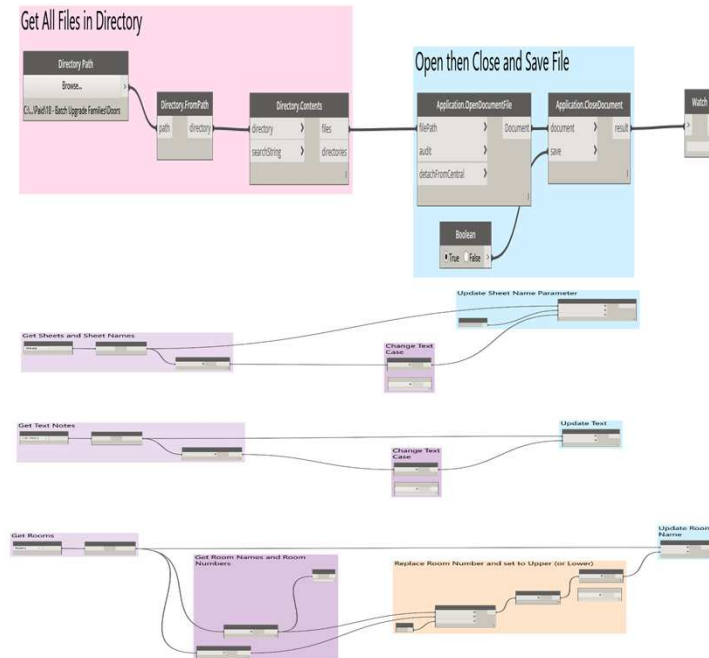
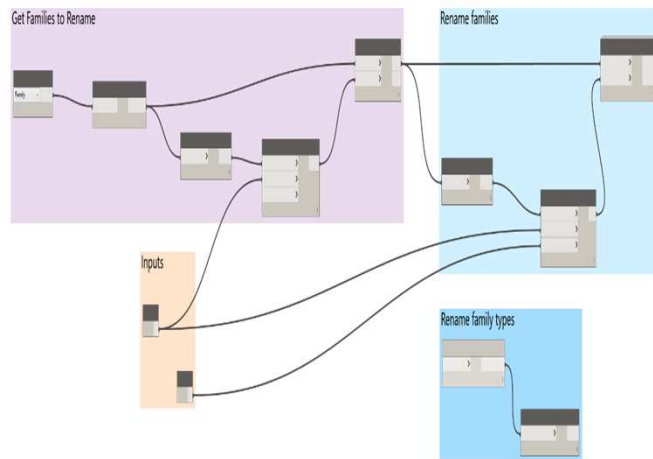
## a. List of Scripts for Project Managers

The below is the list and script for multitude of mundane tasks that can conserve time

9. Dynamo Batch Rename Families: Helps save 30 mins.

10. Dynamo Batch Upgrade Families: Helps save 30 mins.

11. Dynamo Batch Consistent Upper and Lower case: Helps save 30 mins.



# A Automation

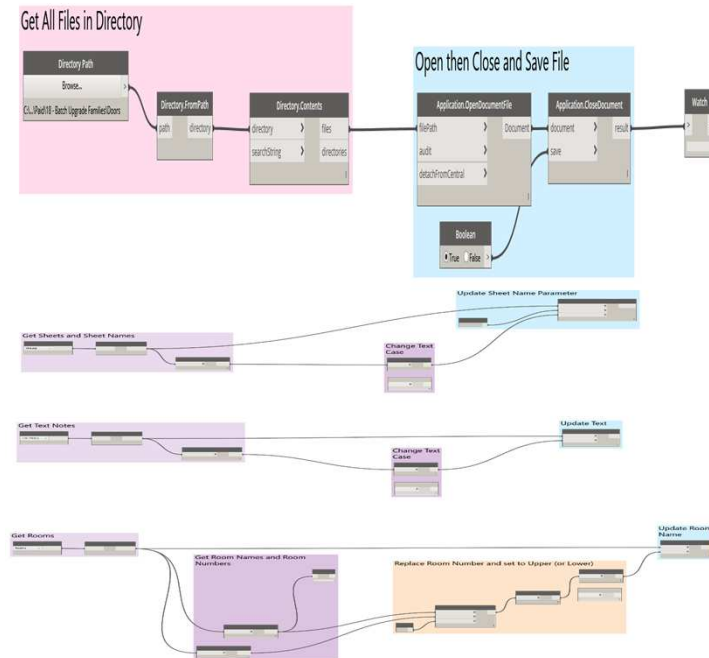
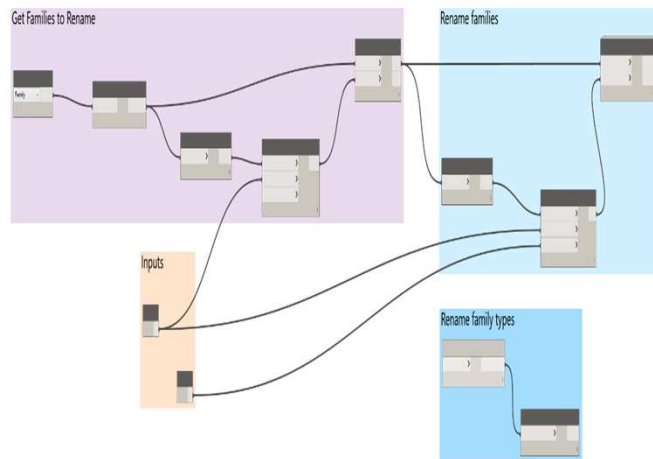
## a. List of Scripts for Project Managers

The below is the list and script for multitude of mundane tasks that can conserve time

9. Dynamo Batch Rename Families: Helps save 30 mins.

10. Dynamo Batch Upgrade Families: Helps save 30 mins.

11. Dynamo Batch Consistent Upper and Lower case: Helps save 30 mins.





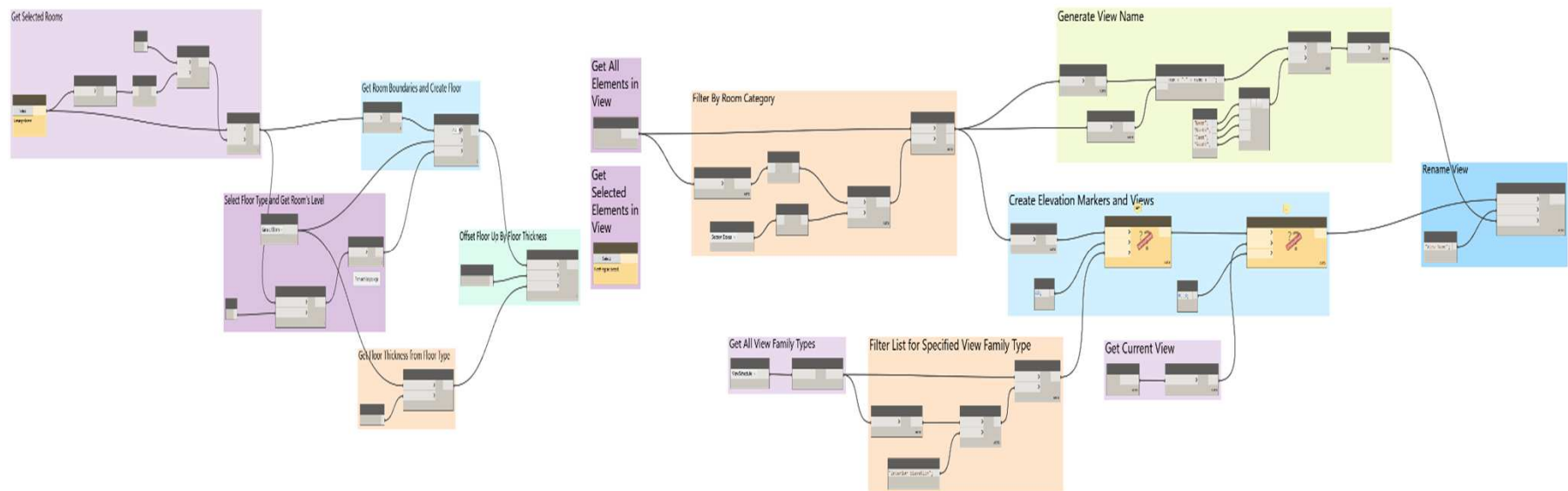
# A Automation

## a. List of Scripts for Project Managers

The below is the list and script for multitude of mundane tasks that can conserve time

12. Dynamo Create floors from Rooms: Helps 15 mins.

13. Dynamo Create Elevations from views: Helps 15 mins.



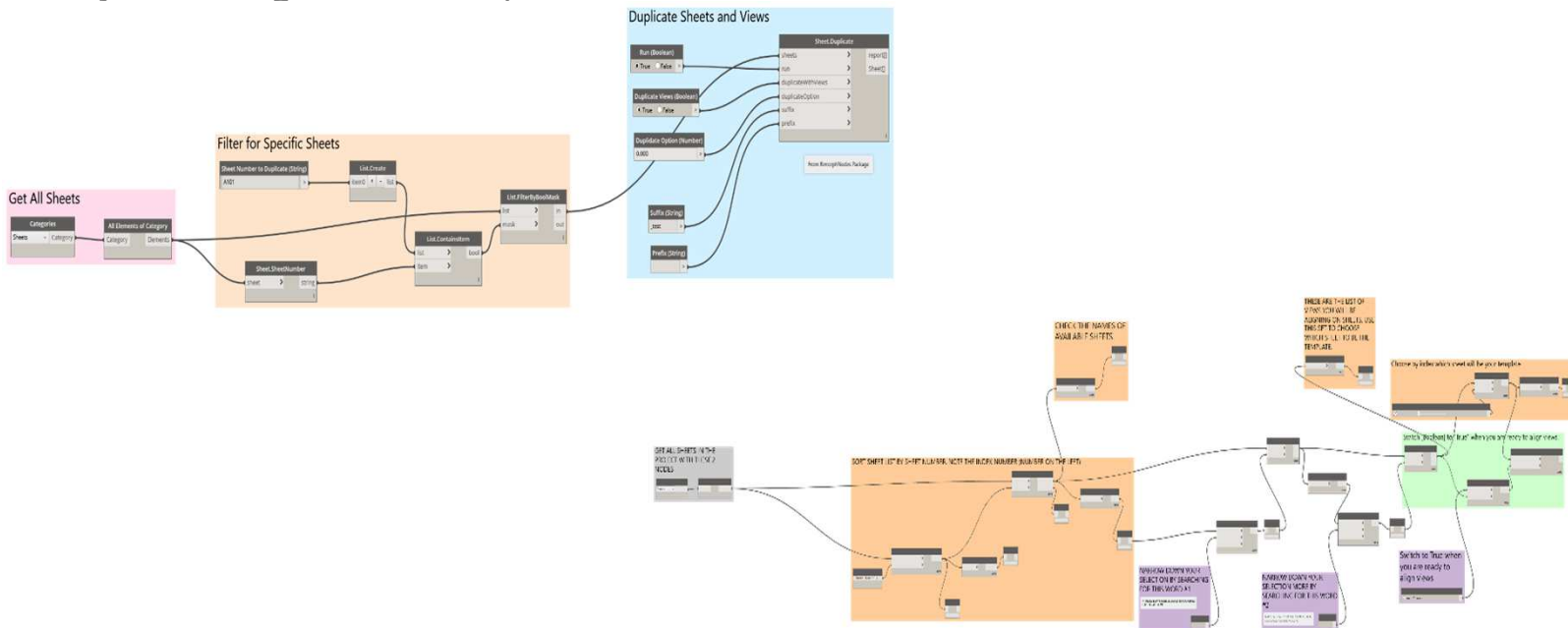
# A Automation

## a. List of Scripts for Project Managers

The below is the list and script for multitude of mundane tasks that can conserve time

14. Dynamo Duplicate views and Sheets: Helps Save 15 min.

15. Dynamo Align Views: Helps save 15 min.

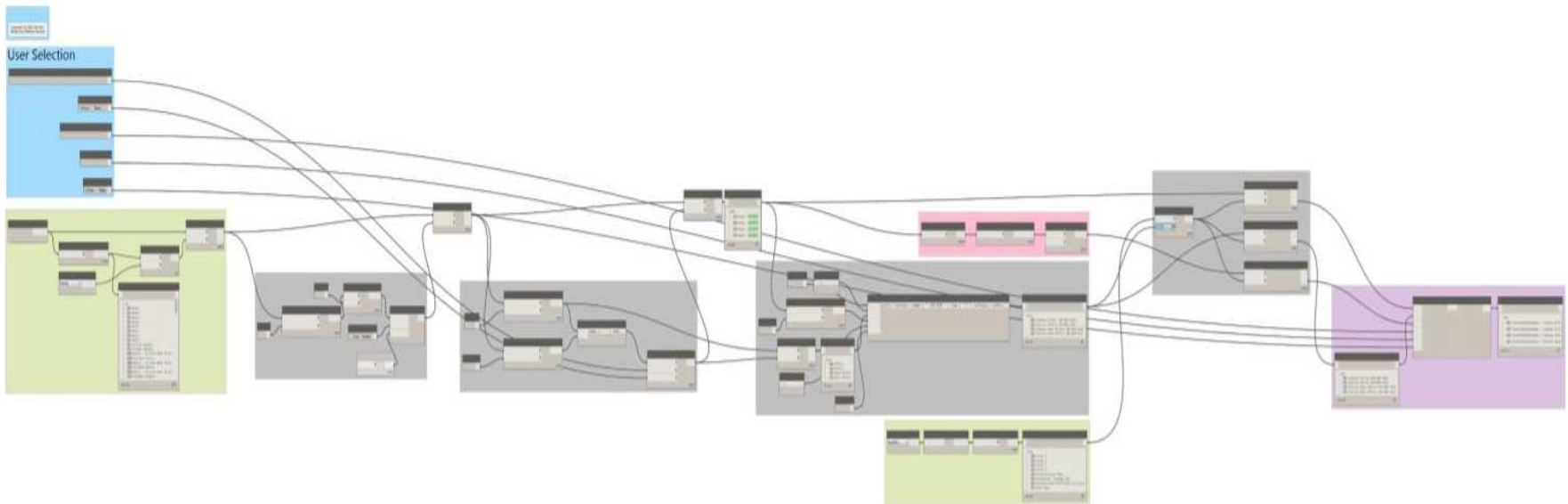


# A Automation

### **a. List of Scripts for Project Managers**

The below is the list and script for multitude of mundane tasks that can conserve time

17. Dynamo Room Data Sheets: Room plan cropped to Room.



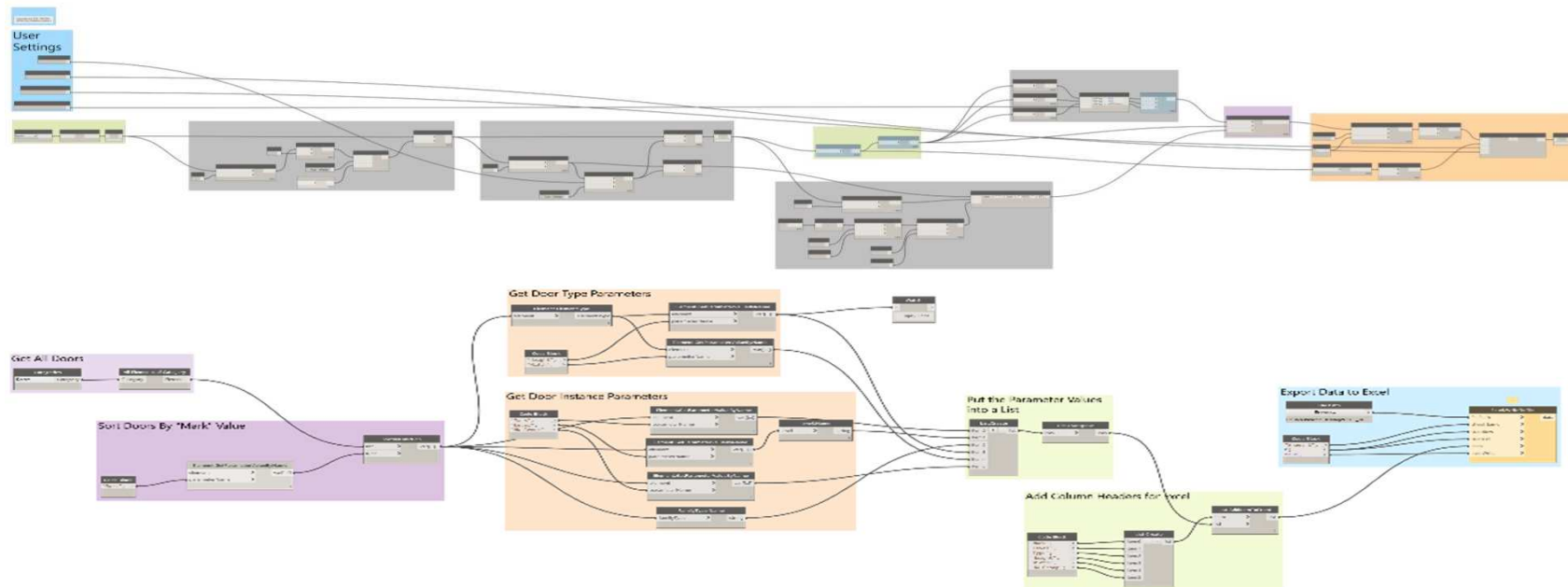
# A Automation

## a. List of Scripts for Project Managers

The below is the list and script for multitude of mundane tasks that can conserve time

18. Dynamo Room Data Sheets: Axonometric Views. (15 mins per room)

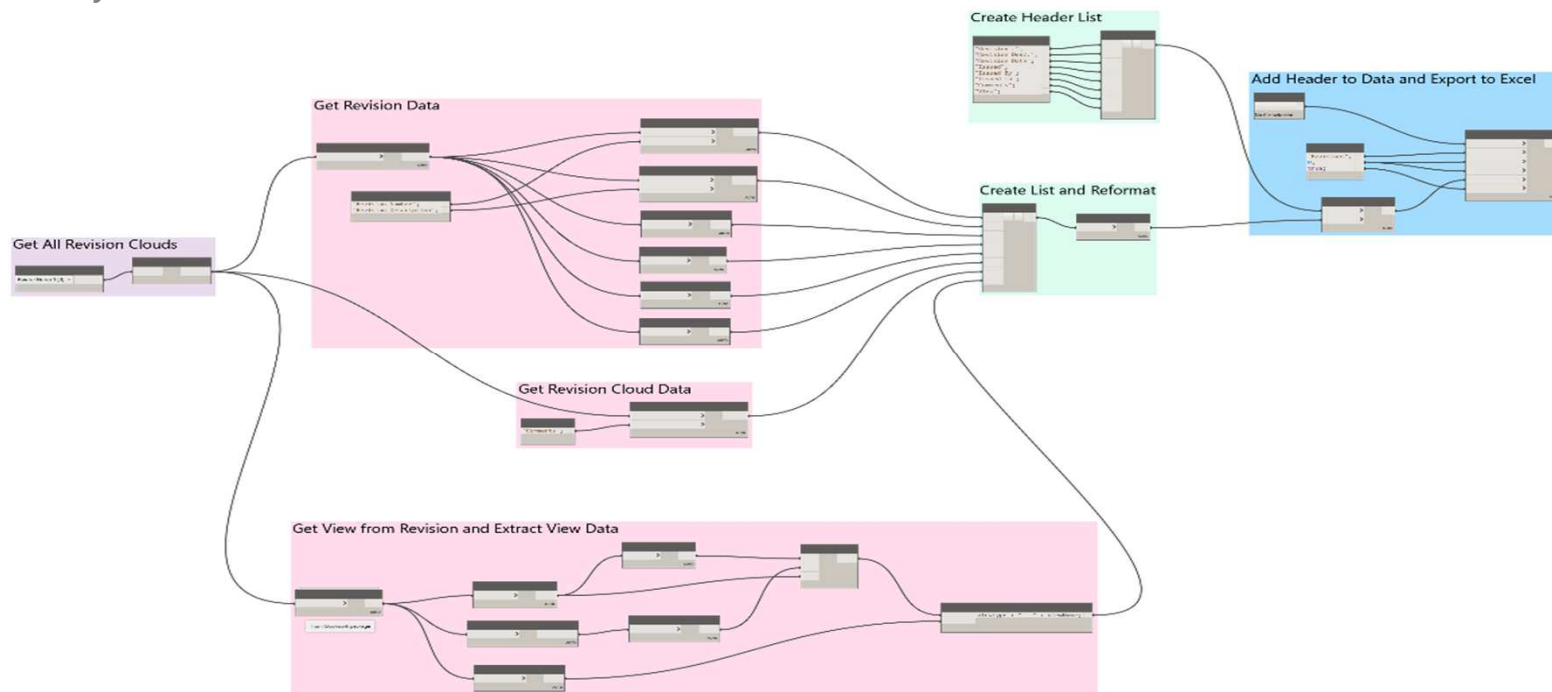
19. Dynamo Export Elements Parameters to Excel: 15 min.



# A Automation

## a. List of Scripts for Project Managers

The below is the list and script for multitude of mundane tasks that can conserve time  
20. Dynamo Revision Data to Excel : 15 min.

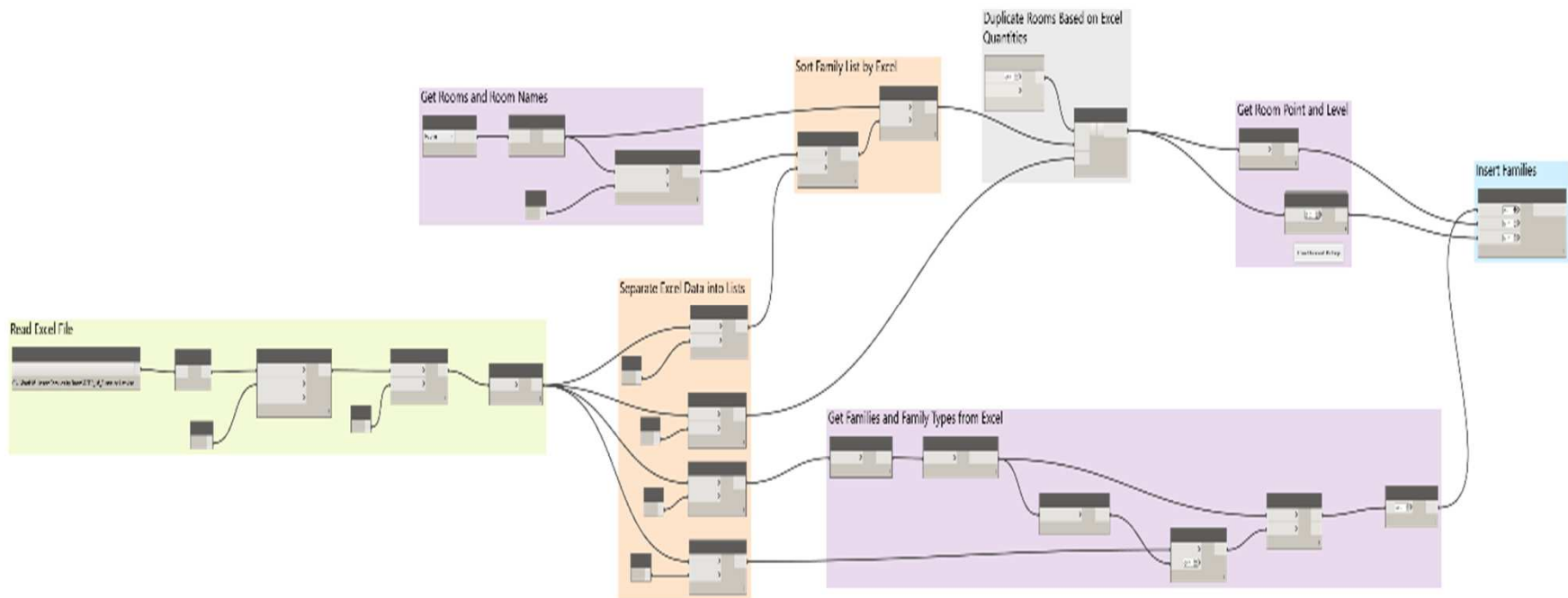


# A Automation

## a. List of Scripts for Project Managers

The below is the list and script for multitude of mundane tasks that can conserve time

22. Dynamo Insert Families to Room: Saves 30 min.

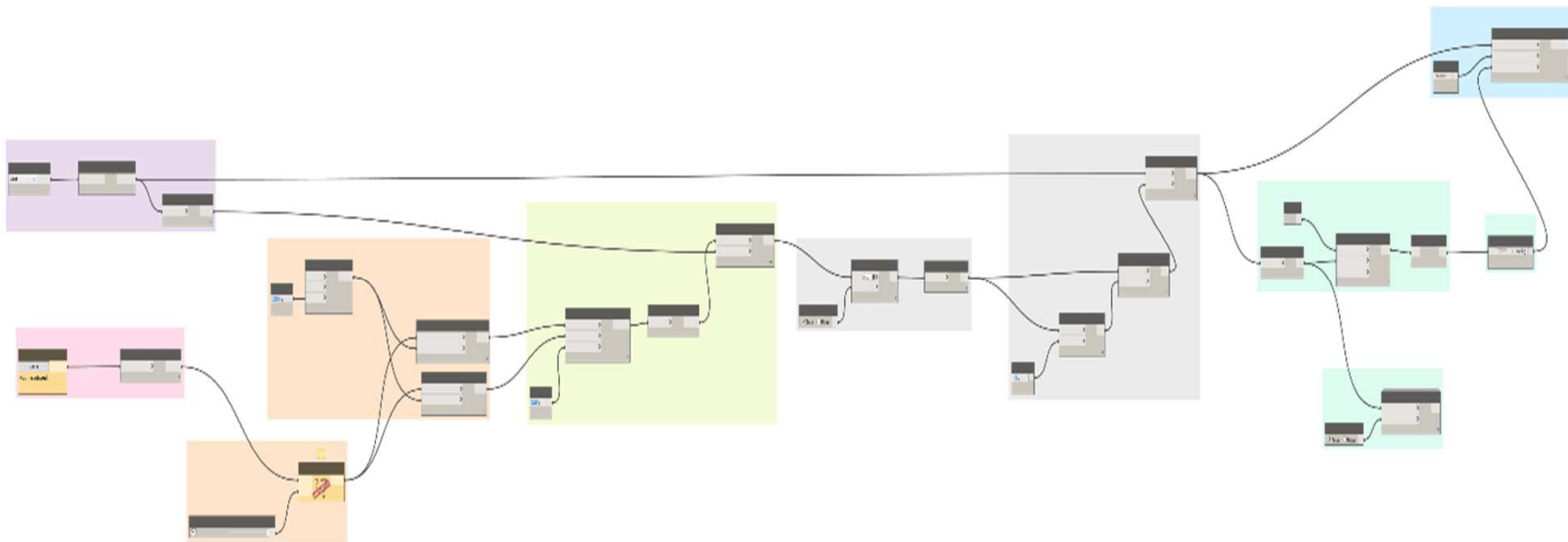


# A Automation

## a. List of Scripts for Project Managers

The below is the list and script for multitude of mundane tasks that can conserve time

23. Dynamo Renumber Column Grids: Saves 30 min.

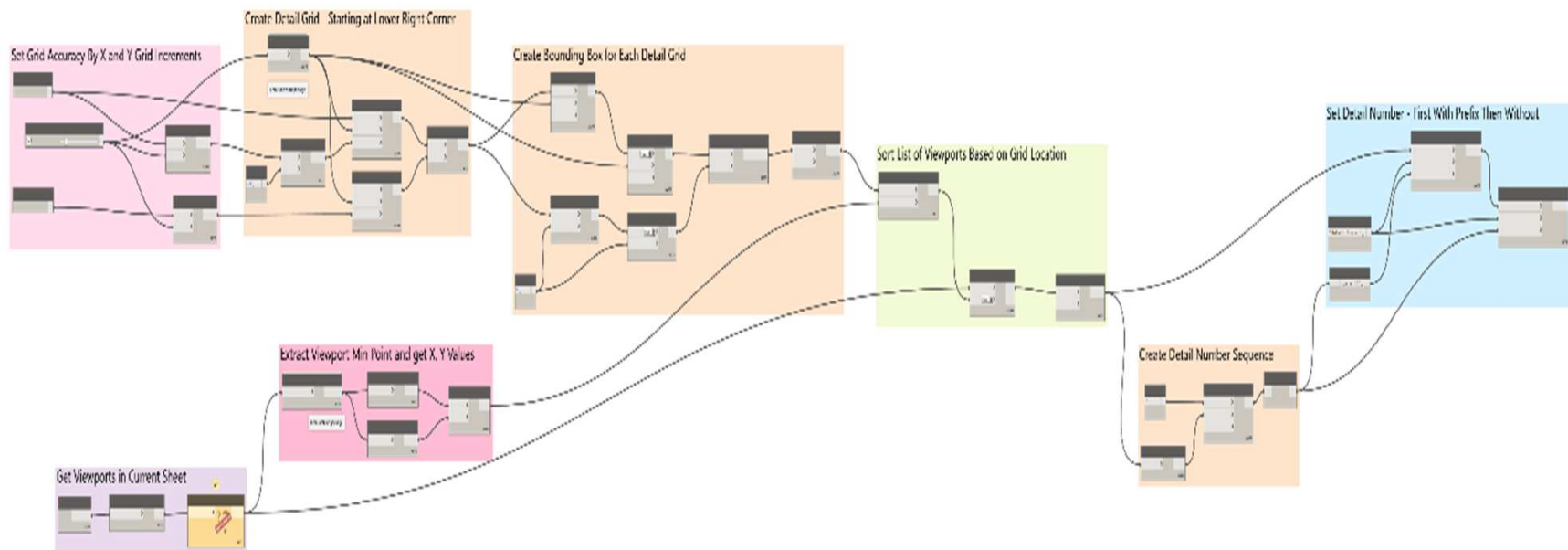


# A Automation

## a. List of Scripts for Project Managers

The below is the list and script for multitude of mundane tasks that can conserve time

24. Dynamo Renumber views on sheets: 5 min per sheet.



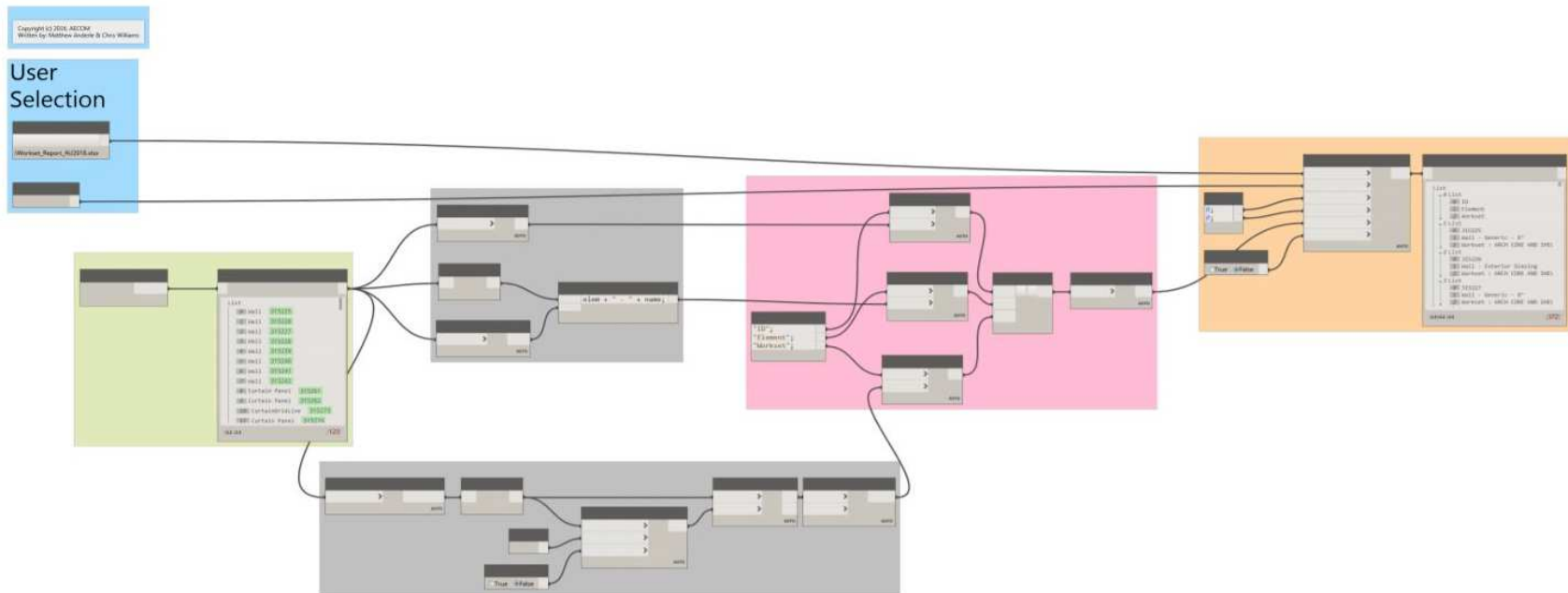


# A Automation

## List of Scripts for BIM Managers

The below if the list and script for multitude of mundane tasks that can conserve time.

## 1. Dynamo Workset Reporter: List of Worksets.

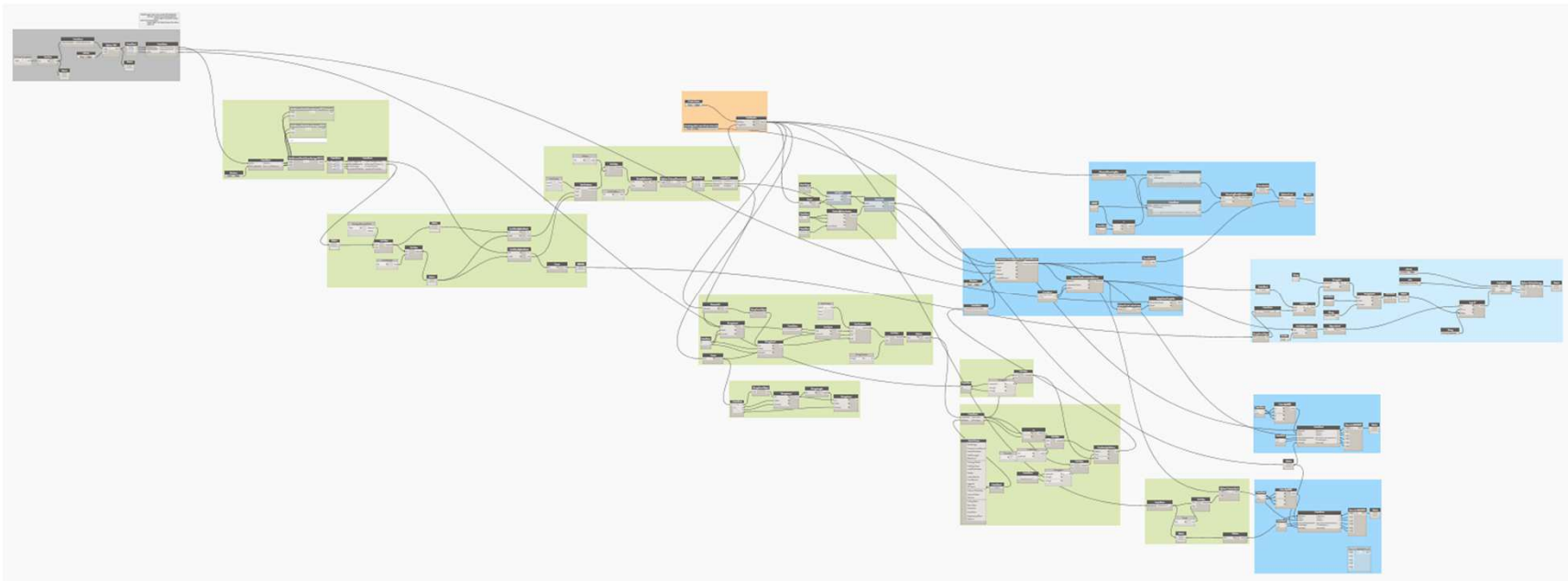


# A Automation

## List of Scripts for BIM Managers

The below is the list and script for multitude of mundane tasks that can conserve time.

2. Dynamo Clash Detection: eliminates clashes and site coordination.

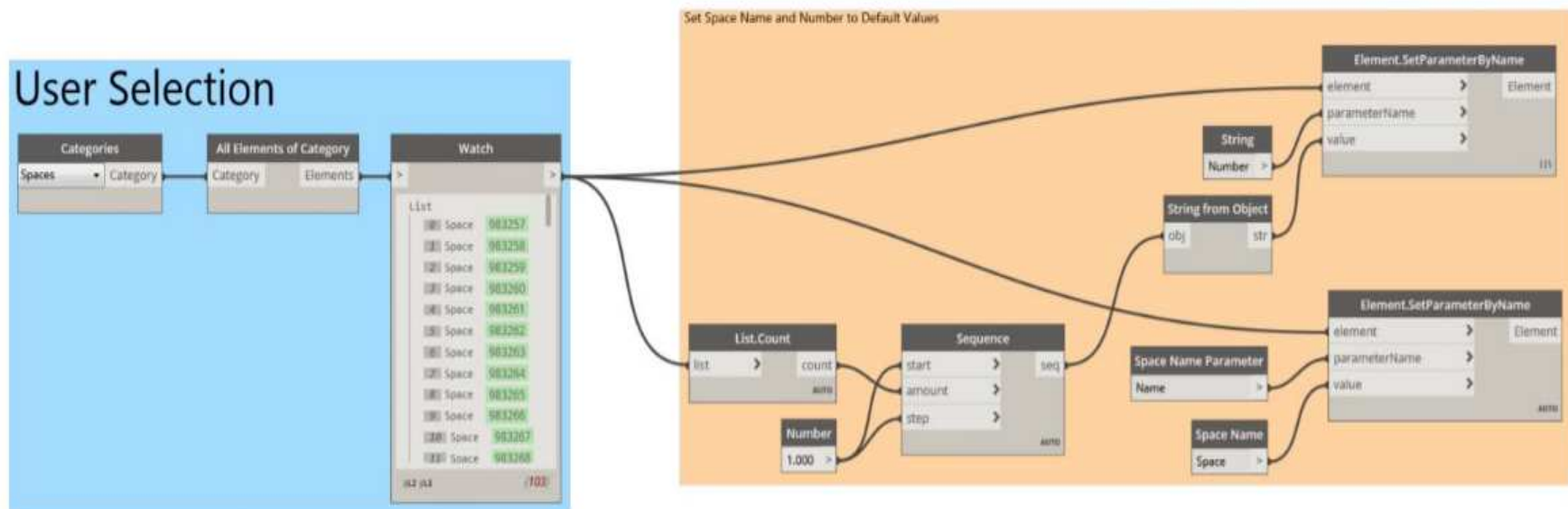


# A Automation

## List of Scripts for BIM Managers

The below is the list and script for multitude of mundane tasks that can conserve time.

4. Dynamo Space data and warning eliminator: 45 min.

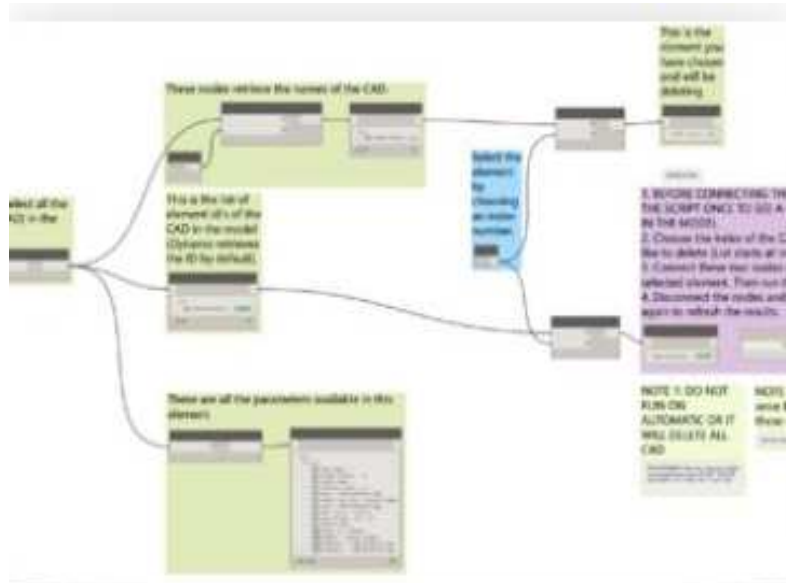


# A Automation

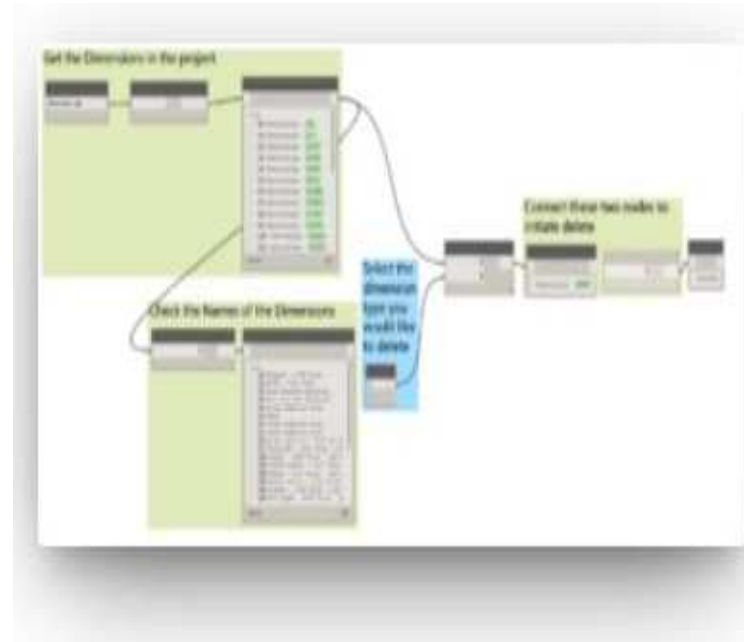
## List of Scripts for BIM Managers

The below is the list and script for multitude of mundane tasks that can conserve time.

5. Dynamo CAD file management: Helps improve Revit file health.



6. Dynamo Delete dimensions by Index.

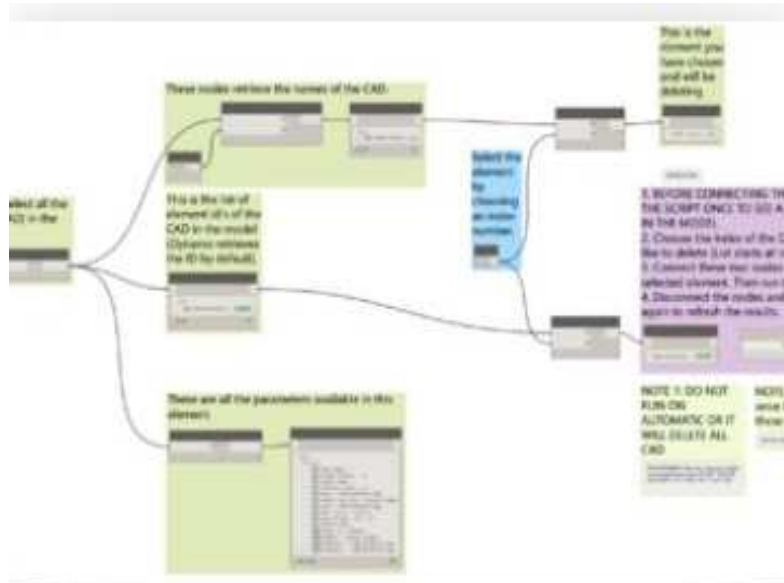


# A Automation

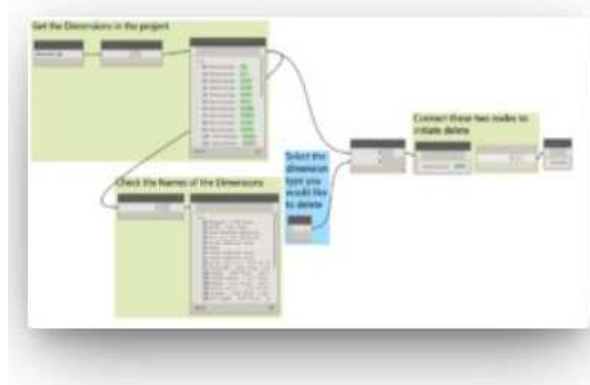
## List of Scripts for BIM Managers

The below if the list and script for multitude of mundane tasks that can conserve time.

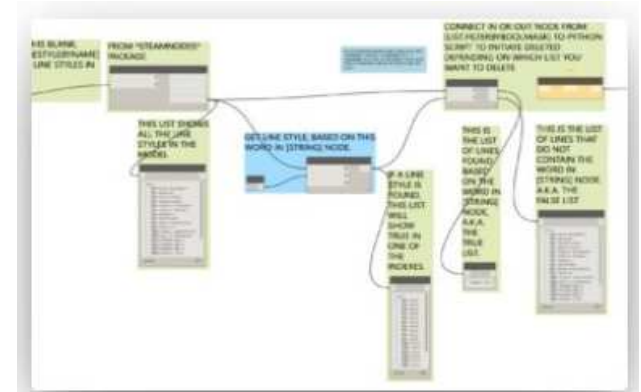
5. Dynamo CAD file management: Helps improve Revit file health.



## 6. Dynamo Delete dimensions by Index.



## 7. Dynamo Delete Lines

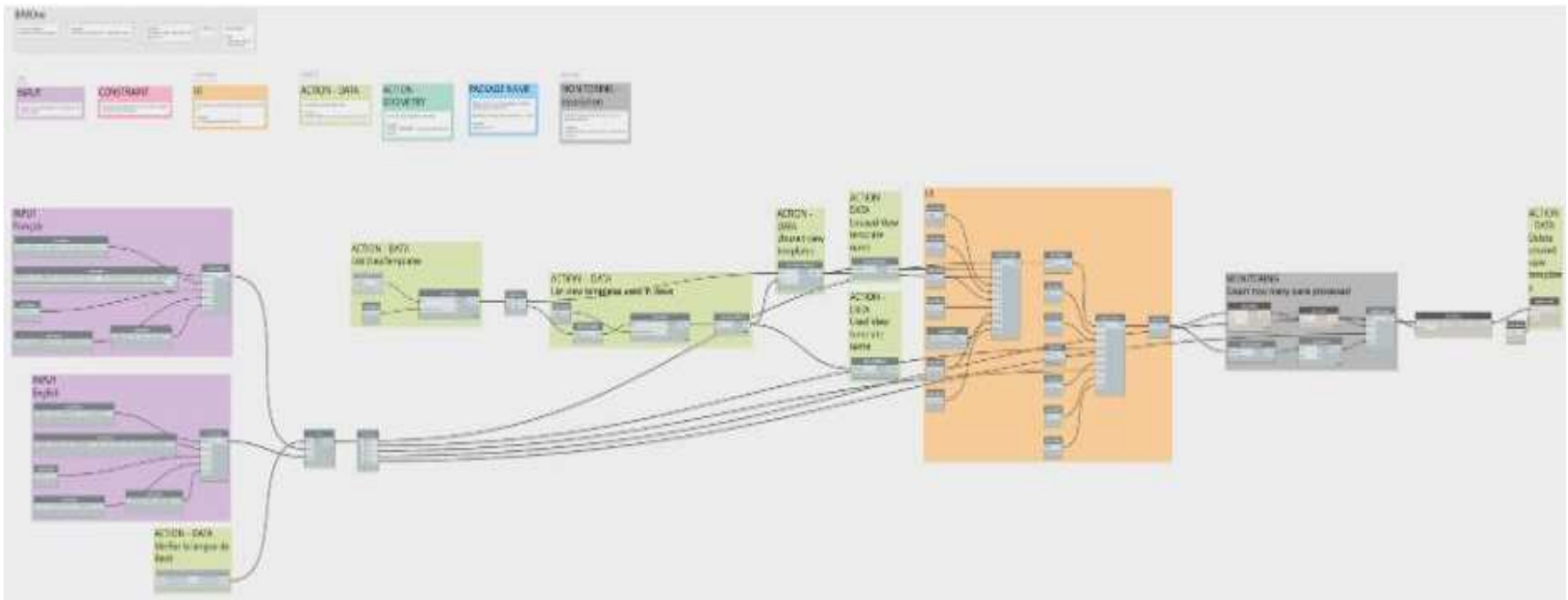


# A Automation

## List of Scripts for BIM Managers

The below is the list and script for multitude of mundane tasks that can conserve time.

### 8. Dynamo Delete Unused View Templates

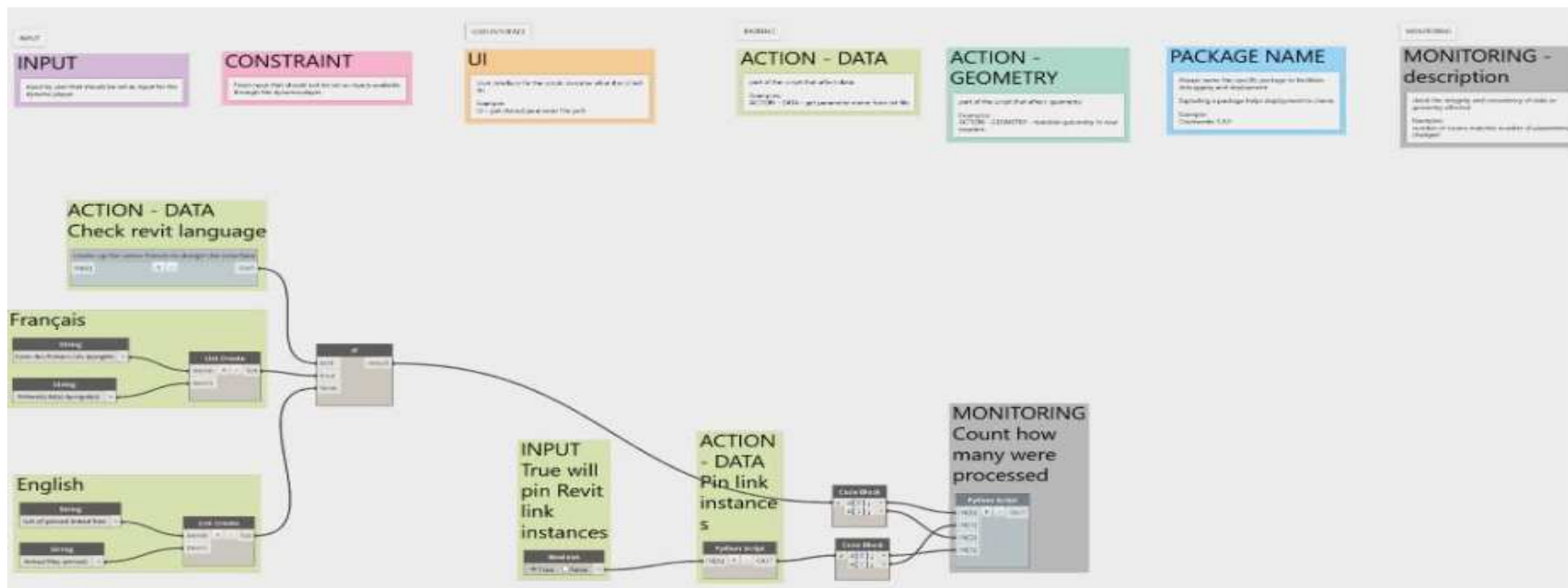


# A Automation

## List of Scripts for BIM Managers

The below is the list and script for multitude of mundane tasks that can conserve time.

### 9. Dynamo File Clean up



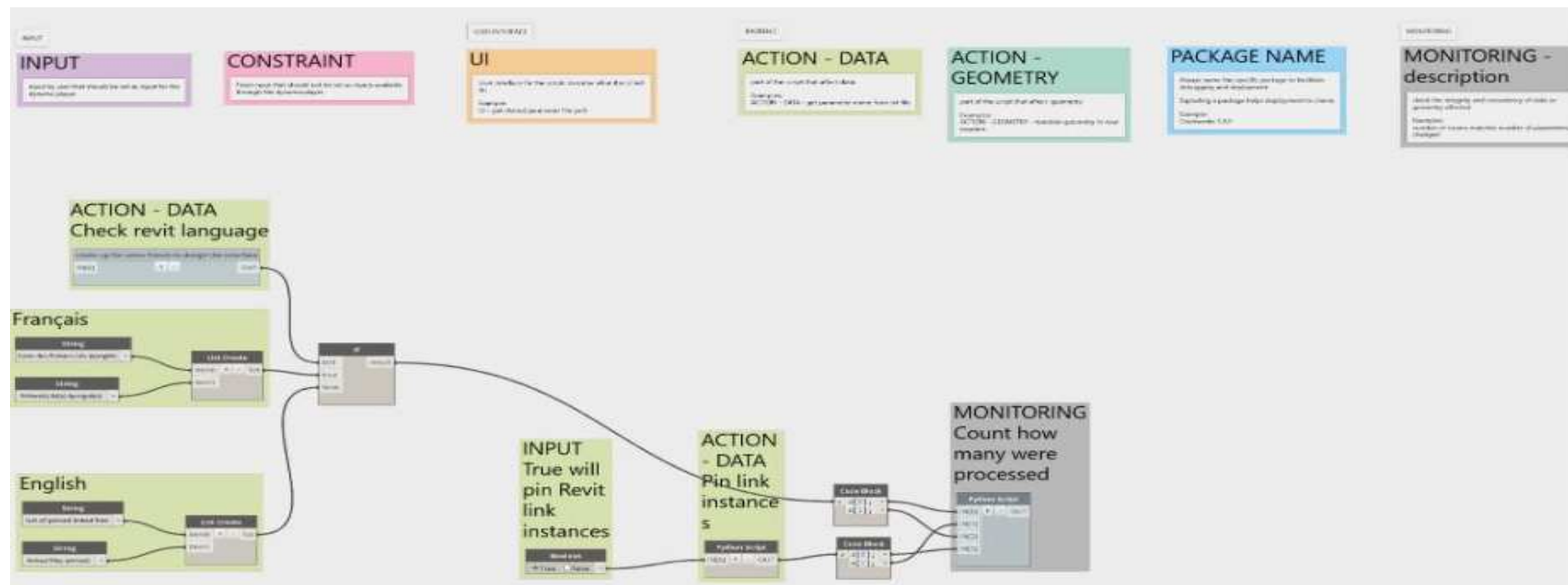


# A Automation

## List of Scripts for BIM Managers

The below is the list and script for multitude of mundane tasks that can conserve time.

### 10. Dynamo Pin All Links

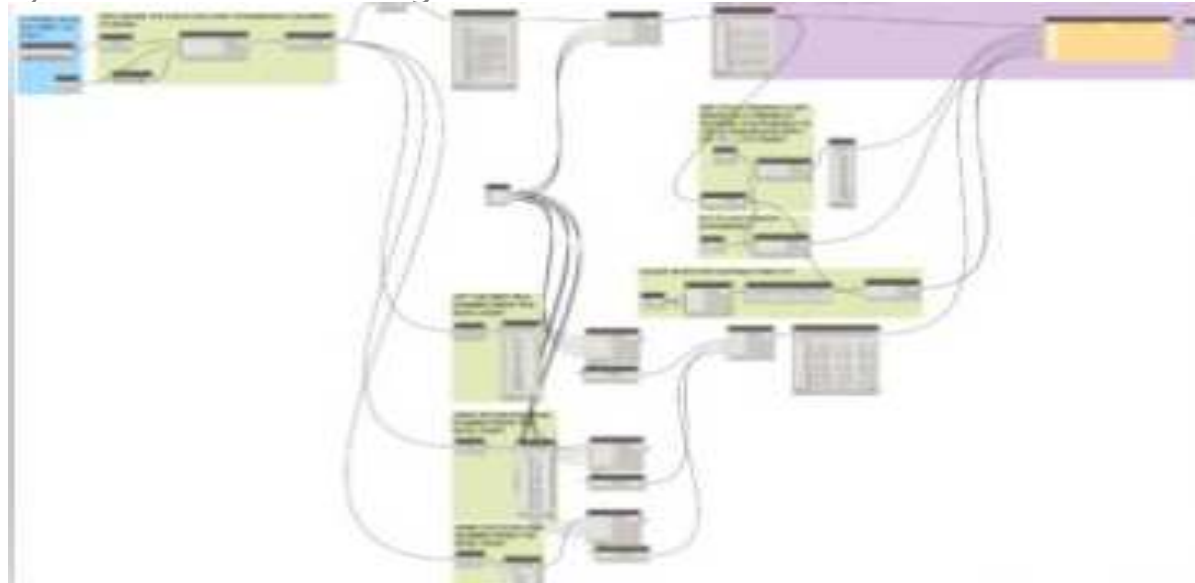


# A Automation

## List of Scripts for BIM Managers

The below if the list and script for multitude of mundane tasks that can conserve time.

## 11. Dynamo Material Manager

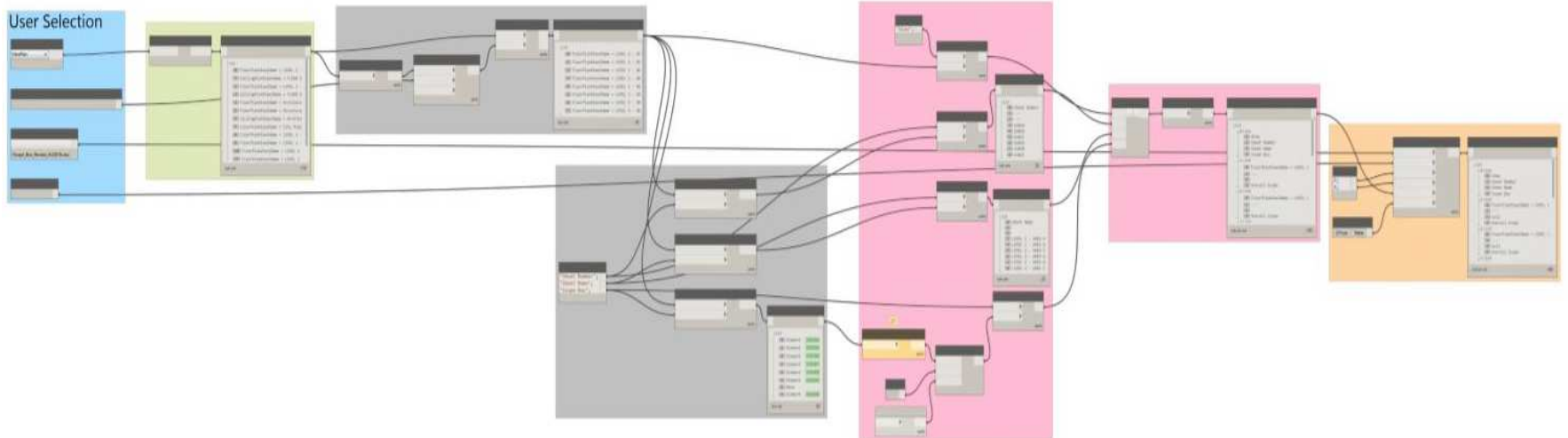


# A Automation

## List of Scripts for BIM Managers

The below if the list and script for multitude of mundane tasks that can conserve time.

### 12. Dynamo Scope Box Review

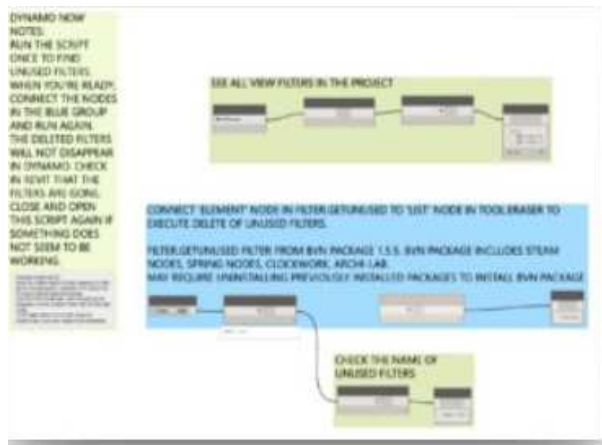


# A Automation

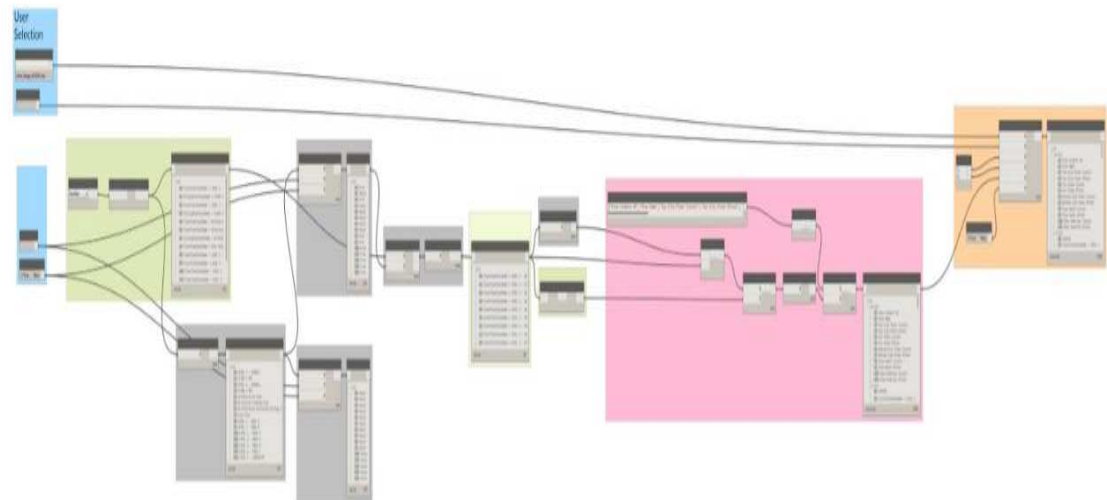
## List of Scripts for BIM Managers

The below if the list and script for multitude of mundane tasks that can conserve time.

### 13. Dynamo Delete Unused View Filter



## 14. Dynamo View Range Manager.

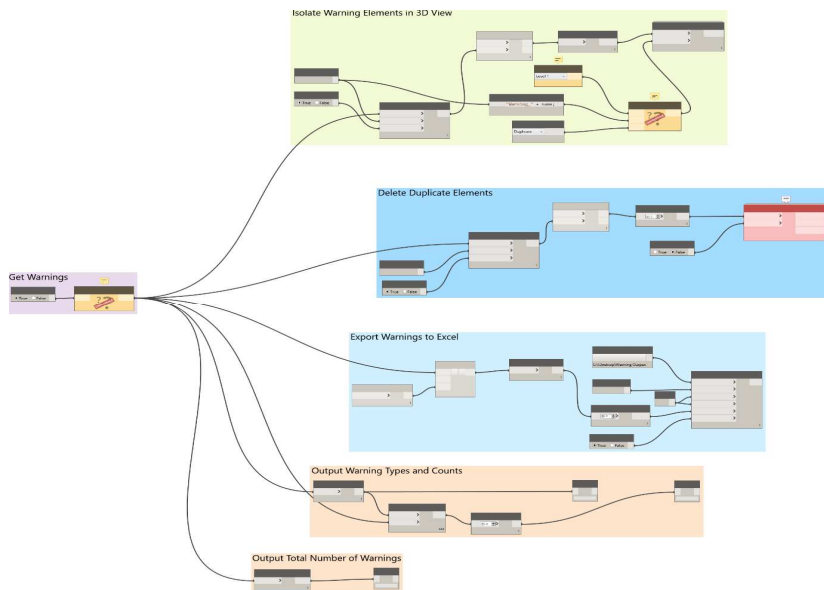


# A Automation

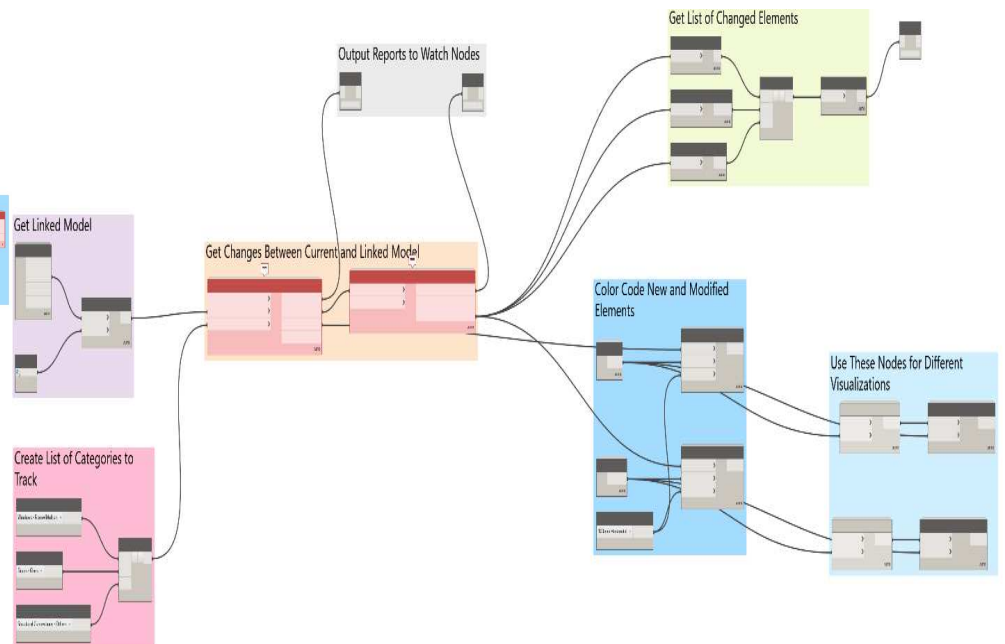
## List of Scripts for BIM Managers

The below if the list and script for multitude of mundane tasks that can conserve time.

### 15. Dynamo Warning Manager



### 16. ynamo Compare Revit Model Versions.

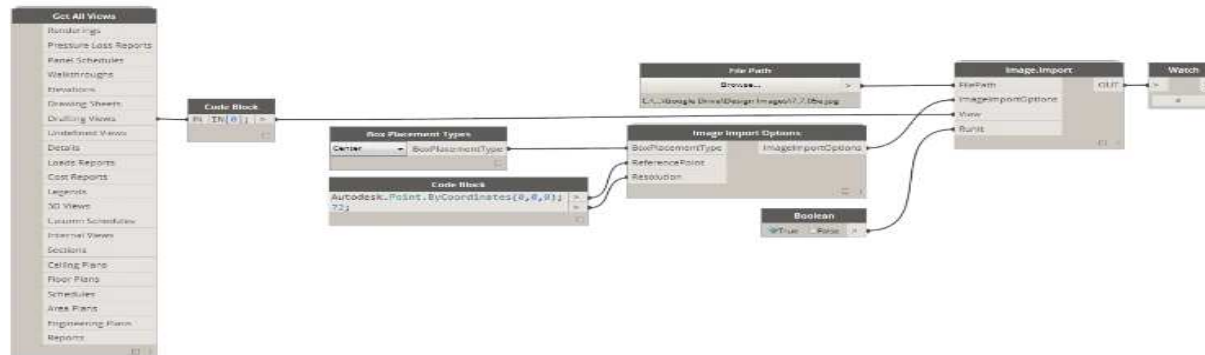


# A Automation

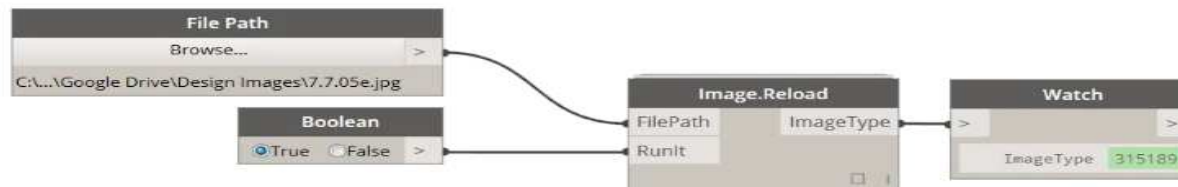
## List of Scripts for BIM Managers

The below is the list and script for multitude of mundane tasks that can conserve time.

### 17. Dynamo Image Manager



Keep in mind that if we re-run the definition it will keep placing images in the specified location. If your intention is to reload it, you can do this:

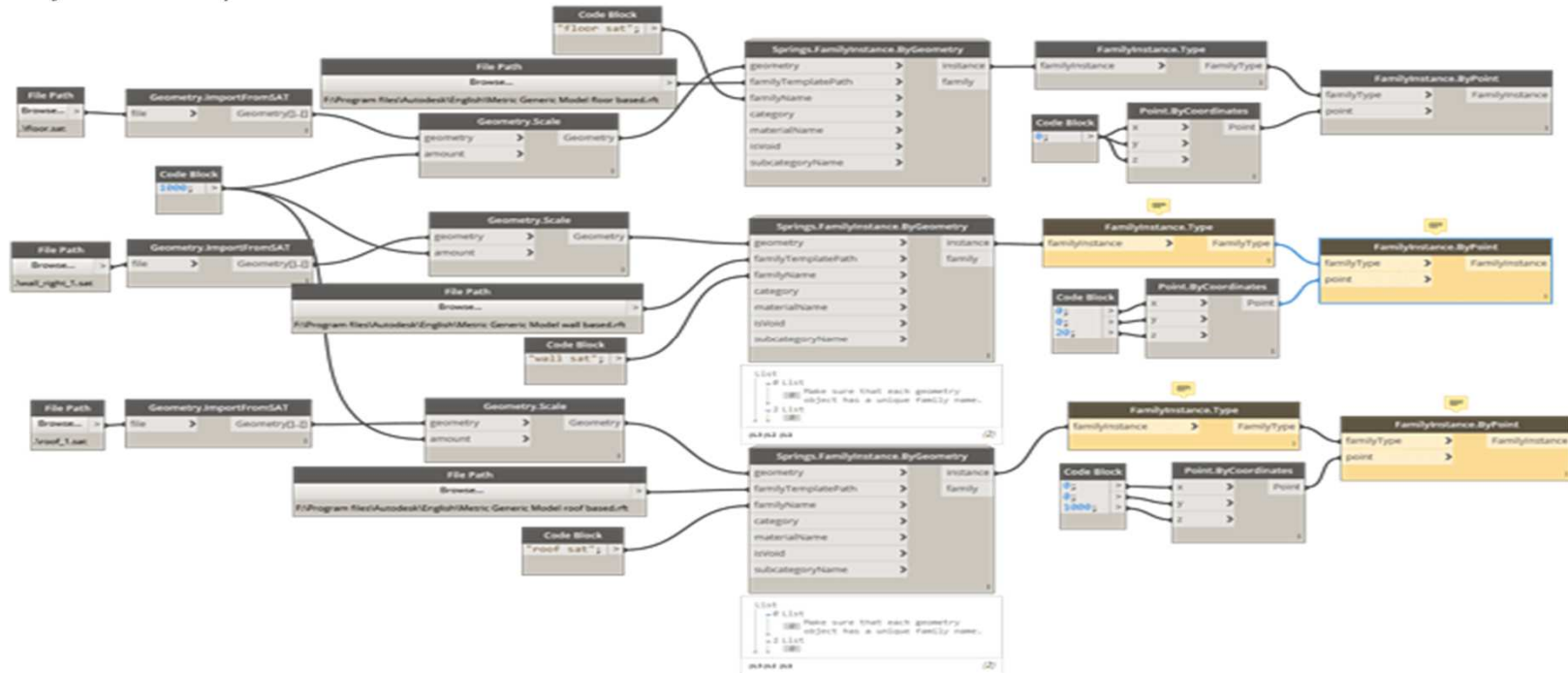


# A Automation

## List of Scripts for BIM Managers

The below if the list and script for multitude of mundane tasks that can conserve time.

## 18. Dynamo Import SAT File in Revit.

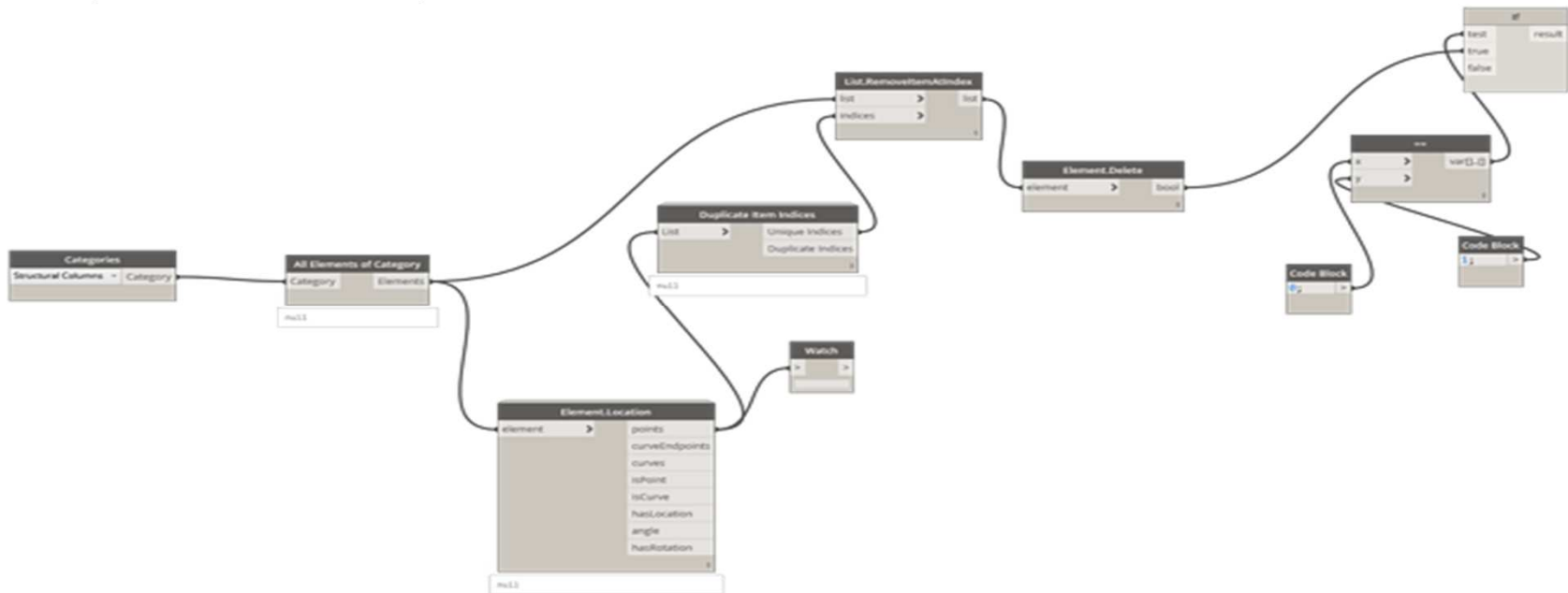


# A Automation

## List of Scripts for BIM Managers

The below is the list and script for multitude of mundane tasks that can conserve time.

19. Dynamo eliminate duplicate elements.



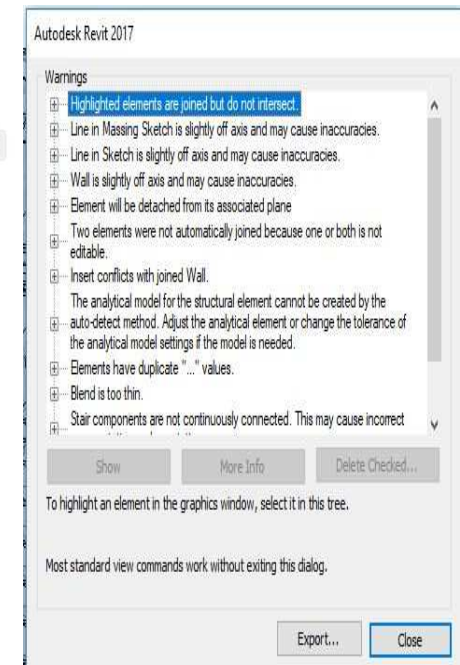
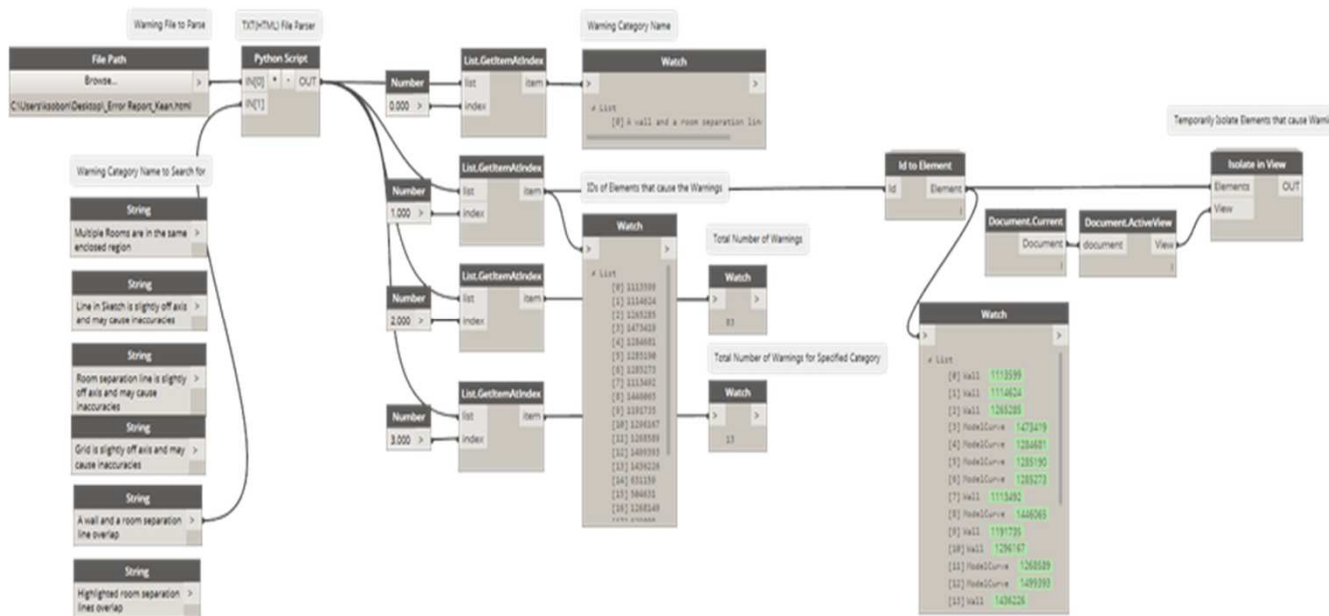


# A Automation

## List of Scripts for BIM Managers

The below is the list and script for multitude of mundane tasks that can conserve time.

### 20. Dynamo Isolating warnings by category or levels



# Chapter 3 V. Visualization



# V Visualization

The Pillar of “Visualization” pictorially and graphically satiates the quest of human mind to perceive Designs faster and easier Graphically.

**Purpose**: The purpose is to be agile at Design Development stage and be able to use “Generative Design”. The purpose of Generative Design is two fold:  
Verify multitude of Design for the Best option.  
Adapt to change in Design in Agile manner at Design Development stage.

**Planning**: The Design Development for this pillar is broadly classified under:

- Parametric Design
- Computational Iterative Design

# V Visualization

**Process:** There two classifications are discussed below:

Parametric Design: The demo of the parametric to be illustrated on the presentation slides

The screenshot displays the TestFit software interface. The central area shows a 2D site plan with a building footprint and parking stalls. The left sidebar contains several panels: 'undertay' with address and background image options; 'site' with drawing and definition tools; 'zoning profile configurator' with presets and a table of unit averages and parking ratios; and 'building input' with wrap and parking settings. The right sidebar includes a 'zoning report' showing no violations, an 'elevator' panel, and a 'navigation' panel. At the bottom, a 'tabulation' panel displays a table of site statistics.

Site Multifamily									
Acreage	4.07	Units	376	1 Beds	182	48% Efficiency	83.1% Stalls	460	
FAR	2.0	Beds	507	2 Beds	131	35% Height	57.5 Average	339	
DU/AC	92.3	Baths	507.0	Stalls	63	17% Average	773 Ratio	1.22	

TestFitFileHelp

underlay

address○

airalroad

opacity

add background image

site

AllA+copy

drawdefine

site

metes & bounds

-200'+

global setback

-0'+

balcony depth into setback

-1'+

tolerance

zoning profile

configurator

presets

database

editor

donut

1 Star SLR

gurban

ac units

parking

bays

podium

corridor ext

podium fill

default

remove preset

dynamic

define

weight

unit average

parking ratio

S-15.00+

-600'+

-1.50+

A-50.00+

-800'+

-1.50+

B-35.00+

-1200'+

-1.50+

C-0.00+

-1400'+

-1.50+

100%

-910'+

-1.50+

prefer weight

average

building input

wrap

save all to preset

parking

enabled

structured rect

type

define

location

rotate

orientation

-2+

tray count

-180'+

minimum length

-1'+

padding

plan view3D view

zoning report

no violations

elevator

navigation

1 schemes

A

1 options

tabulationdevelopmentschemeserrors

Site	Multifamily				Parking				
Acreage	4.07	Units	376	1 Beds	182	48% Efficiency	83.1%	Stalls	460
FAR	2.0	Beds	507	2 Beds	131	35% Height	57.5	Average	339
DU/AC	92.3	Baths	507.0	studios	63	17% Average	773	Ratio	1.22

+ expand tabulation

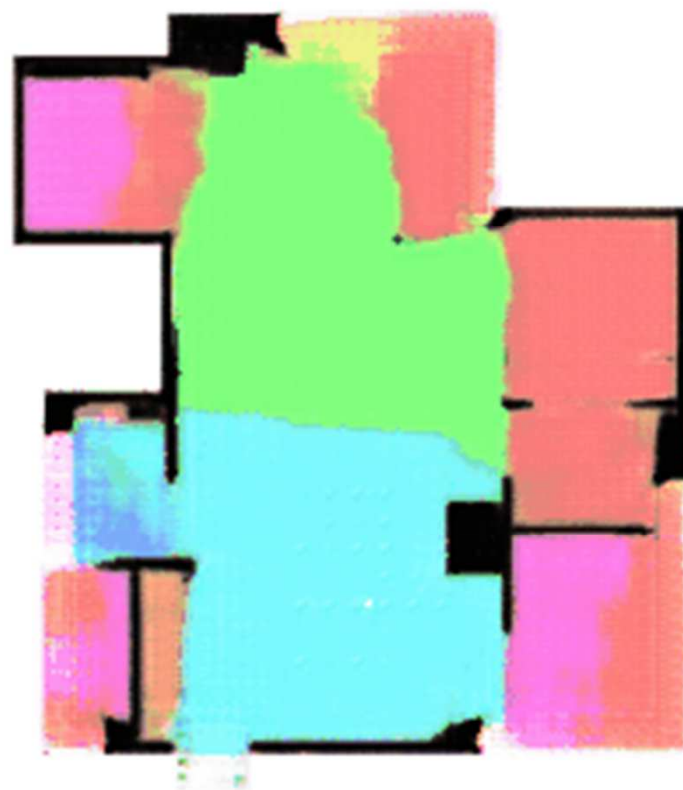
Screencastify - Screen Video Recorder is sharing your screen.

Stop sharing

Hide

Windows taskbar with various application icons and system clock showing 12:41 PM.







# Chapter 4 I. Innovation





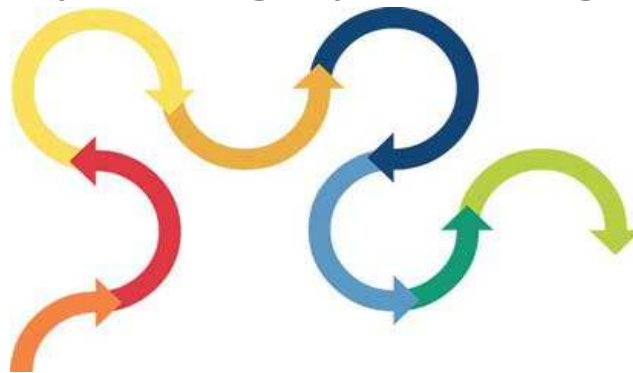
# I Innovation

## Chapter 4 I. Innovation

The role of a Digital Practice Manager is to effectively engage and provide Leadership to the firm in Innovation.

The Three C's of Effective Digital Design Leadership:

**Communicate.** Unsuccessful leaders tended to focus on the “what” behind the change. Successful leaders communicated the “what” *and* the “why.” Leaders who explained the purpose of the change and connected it to the organization’s values or explained the benefits created stronger buy-in and urgency for the change.



# I Innovation

**2. Collaborate.** Bringing people together to plan and execute change is critical. Successful leaders worked across boundaries, encouraged employees to break out of their silos, and refused to tolerate unhealthy competition. They also included employees in decision-making early on, strengthening their commitment to change. Unsuccessful change leaders failed to engage employees early and often in the change process. buy-in and urgency for the change.



# I Innovation

**3. Commit.** Successful leaders made sure their own beliefs and behaviors supported change, too. Change is difficult, but leaders who negotiated it successfully were resilient and persistent, and willing to step outside their comfort zone. They also devoted more of their own time to the change effort and focused on the big picture. Unsuccessful leaders failed to adapt to challenges, expressed negativity, and were impatient with a lack of results.





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