





Function and Lookup





How to Add User-Defined Functions and Do a Lookup On the Map

In this blog, we will see how to add **USER-DEFINED FUNCTIONS** and **DO A LOOKUP** on the map.

What is User Defined Functions?

These functions allow us to perform different transformations using multiple functions. We can use any type of function like String, Numeric, Date, lookup, Connector, Custom scripting, and properties depending on the requirement. With a user-defined map function, we will be able to combine all functions and produce value for a target field in a single map.

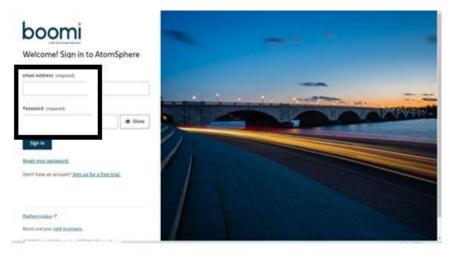
What is a Cross Reference Look Up?

The cross-reference table allows us to retrieve a single row of values based on the value of one or more lookup references. It stores data in the form of key and value pairs. The cross-reference `table is easy to use and requires no coding. Retrieving value from cross reference table is much faster than performing a database or other connector lookup.

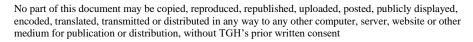
In this Use Case, the source system sends Country and City Details as Country City i.e. (IN_HYD). We need to split the value using the split function as County and code and do a lookup using cross cross-reference table for actual country and city values to be set in the target system.

Let us begin with the steps.

Step 1: Log on to the Boomi platform (<u>https://platform.boomi.com/</u>) with the required credentials i.e., Email Address and Password.



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Step 2: Once logged into the Boomi platform, we will be able to view the Home page.

b	Home	Services +	Help 🕶	Settings -		đ
	-	2				
~ Pro	cesses					
0		esting	a e		°o o	Orders_Fron
0	s	hopify GET or	ders		ð	Web_Insert_

Step 3: Now, click on Services followed by Integration. We will see the Build page. Click on New.

b <u>Home</u> Hi	Services 🔺 Help 👻 Settings 🗸
~ Processes	Build processes that transform and integrate data between systems.
¢, In	Master Data Hub 🕜 Synchronize, cleanse, match, and 🛛 🕫 enrich trusted data across domains.
Si Si	API Management Manage and control the usage of APIs throughout their lifecycle.
<u>Go to Integratio</u>	Flow Automate sophisticated workflows to C
b Home	Services + Help + Settings +
ntegration Dash	board - Build Deploy - Manage -
ilter Q. Search for comp	orient or folder

Step 4: Once, clicked on New, we will be able to see three fields i.e., Type, Component Name, and Folder.

	* Required fields.	
oy- n	Туре	@ Process
0077140	Component Name*	
	Folder*	Q \Training
n A Rec	G	18
45	Create Cance	a -

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• Select Type as process as we are building a process. Component Name and Folder can be given based on your choice (i.e., which name to be given and where do we want to create the process). Click on Create.

•

Step 5: We see that the process gets created with a start shape which is configured with AS2 Shared Server by default.

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stated a stated a stated a stated a stated a frateria	
Start - AS2 Shared Server	
Start - ASZ Shareu Server	
A Cale Darius	
Configure	

Step 6: Select the start shape and choose No Data. Click ok.

D Start	Shape 🕖
	s the main shape that begins the process flow. It is automatically added to each (it cannot be removed.
Process Mode	General
Туре	Connector Trading Partner Data Passthrough No Data Select this option of this process should not receive or retrieve data from any source. In other words, the process will be scheduled and run similar it CRON or any other soci of job scheduler. The process will generate a single empty discument.

Step 7: Drag and drop the message shape onto the process canvas to set static data coming from the flat file profile.



• We will set static data in the message body as shown.

parameters. Documi	generates a free-flow text message from a dynamic or static set of input ents that are sent to a Message shape are transformed, and the documents the formar of the message.
tiisplay Name	
Option	Combine documents into a single message
Mazzaga	Enter your message, using (1) to insert a variable.
Varialules	0 / 0 7 ±
	(1) Example sonable

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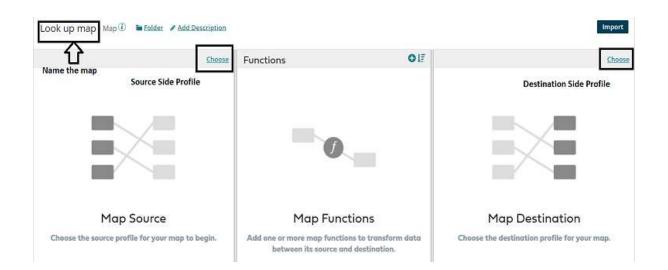
• We will add ID, Name, and Country City with 1, Mark, and IN_HYD in the message and click ok.

Message	Id,Name,County_City 1,Mark,IN_ <u>HYD</u>

Step 8: Drag and drop the map shape onto the process canvas. Click + on the map to create one as shown below.

			to another, or more specifically, from nces a predefined Map component.
-	Display Name	e [
Configur	Мар	Q Choose	9
. company			(
			click on +

• Name the map and add the profiles by selecting the choose button on both sides. The left side will be the source profile and the right side will be the destination profile.

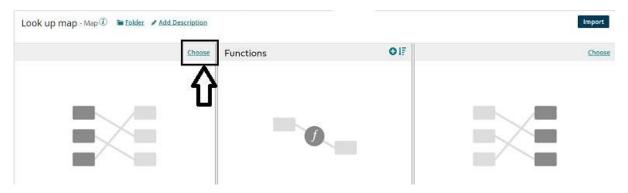


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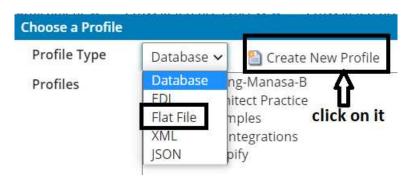




• Now, let us add the profiles. First, we will add the profile on the source side. Click on Choose.



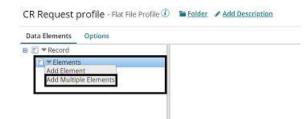
• In Profile Type, we see different kinds of profiles i.e. Database, EDI, Flat File, XML, and JSON. Select the profile type based on the request. Here, it would be a Flat File. Select Flat File and click on Create New Profile as shown in the below screenshot.



• Once we click on create a new profile, name the profile.



• Click on the elements and choose Add multiple elements.



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• A popup box comes up asking how many elements would you like to add. Here, we are adding 3. Keep it 3 and click ok.

ow many	elements would you like to add?	
1 1	2	
	2	
ок	Cancel	

• We see 3 elements get created with default names. We have to name the elements.

Record				
Element	s			
🔮 🔻 New Fl	at File Element			
🛛 🕶 New Fl	at File Element			
🗴 🕶 New Fl	at File Element			
	▼Element ▼New Fl ▼New Fl	Record Elements New Flat File Element New Flat File Element New Flat File Element New Flat File Element	Elements New Flat File Element New Flat File Element	Vew Flat File Element New Flat File Element New Flat File Element

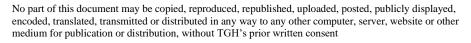
• We have to select 1st element below Elements and add a name on the data name field. Here, it would be Id.

■ T * Record			
⊖ (F) ▼Elements	Element Details		
 New Flat File Element 	Set properties for the selected element.		
🔮 🕶 New Flat File Element	Data Name 🕧 Id		
	Position () 1		

• Name 2nd, and 3rd elements as Name and County City following the same steps as above. After naming all the fields, it looks like

Data Elements Options	
 ■ F * Record ■ F * Elements ▼ Id ▼ Name ▼ Country_City 	Record Details Set properties for the selected record. Record Name (1) Record
	Position (1) 1 Detect This File Format By (1) Number of columns

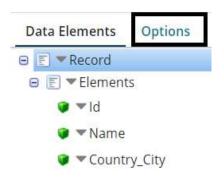
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• Select Options beside Data Elements as shown in the screenshot.



• We will have to configure the required fields in options i.e., if we check **Use Column Headers**, the first row of the document is assumed to contain column labels and it is ignored. We will check the box.

Data Elements Opt	ions	
Use Column Headers	DO	
File Type	Delimited	~
File Delimiter 🕧	Star Delimited	Ý
Text Qualifier	N/A	*
Text Qualifier Escape	D	
Delimiter Escape 🕧		
Escape for Escape 🕧		
Remove Escape 🕧	0	

• **File Type** defines the structure of a file if it is delimited or data positioned. We will select as delimited.

CR Request p	orofile -	Flat File Profile 🛈	Folder	Add Desc
Data Elements	Options	<u>.</u>		
Use Column Hea	ders 🕧 🕻	2		
File Type	1	Delimited	. `	
File Delimiter ()		Delimited Data Positioned		

• **File Delimiter** defines the character that delimits the data elements. We see different options such as Star delimited, Comma delimited, and so on. In this Use Case, we choose Comma Delimited.

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in 🕨

File Delimiter 🕧	Star Delimited	~
	Star Delimited	
Text Qualifier	Comma Delimited	1
Text Qualifier Escape 🕧	Tab Detimited Tick Mark (*) Delimited Bar () Delimited	
Delimiter Escape 🕧	Other Character Byte Character	

• After configuring options, it looks like as shown below. Click save and close.

Data Elements Option	15	
Use Column Headers 🛞	2	
File Type	Delimited	×
File Delimiter 🕧	Comma Delimited	~
Text Qualifier	N/A	~
Text Qualifier Escape 🛈		
Delimiter Escape 🕧	[
Escape for Escape 🕧	1	

• We see the source profile got added to the map as follows.

CR Request profile	Choose	Functions	017	Choos
Filter Q: tearityfor field				
E TRecord				
Elements				
- Name				
· - County_City				
0.01 12				
		Map Functions	Map Dest	ination
		Add one or more map functions to transform	data Choose the destination	profile for your mon.

• Now, we will add a profile on the Destination side. Click Choose on the right side as shown.

R Request profile	Choose	Functions	OIF	
Filter Q. Search for field				
a 🕑 ▼ Record @ 🗊 ▼ Elements				
💓 🕶 Id				
👽 🕶 Name				
County_City				
				\sim

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• In Profile Type, we see different kinds of profiles i.e. Database, EDI, Flat File, XML, and JSON. Select the profile type based on the request. Here, it would be a Flat File. Select Flat File and click on Create New Profile as shown in the below screenshot.

hoose a Profile		
Profile Type	Database 🗸	📔 Create New Profile
Profiles	Database	ng-Manasa-B
	FDI	hitect Practice
	Flat File	nples click on it
	XML	ntegrations
	ISON	pify

• Once we click on create a new profile, name the profile.

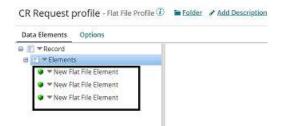


• Click on the elements and choose Add multiple elements.

• A popup box comes up asking how many elements would you like to add. Here, we are adding 4. Keep it 4 and click ok.

low many (elements	would yo	ou like to	addi
	4			
OK	Car	ncel		

• We see 4 elements get created with default names. We have to name the elements.

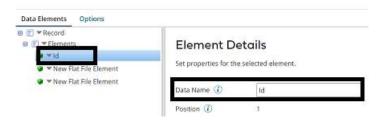


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• We have to select 1st element below Elements and add a name on the data name field. Here, it would be Id.



• Name 2nd, the 3^{rd,} and 4th elements as Name, Country, and City following the same steps as above. After naming all the fields, it looks like

Data Elements Options		
F * Record Ferenents * Telements * Telements * Telements * Totame * Country * Country * Country * Country	Element Det Set properties for the s	In the West
• City	Position (1) Mandatory (1)	4
	Enforce Unique ④	CD

• Select Options beside Data Elements as shown in the screenshot.



• We will have to configure the required fields in options i.e., if we check **Use Column Headers**, the first row of the document is assumed to contain column labels and it is ignored. We will check the box.

Data Elements Opt	tions	
Use Column Headers	3 (1)	
File Type	Delimited	Ý
File Delimiter 🛈	Star Delimited	~
Text Qualifier	N/A	~
Text Qualifier Escape	0	
Delimiter Escape 🕧	[]-	
Escape for Escape 🕧		
Remove Escape 🕧	0	

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• **File Type** defines the structure of a file if it is delimited or data positioned. We will select as delimited.

ions	
D 🖬	
947 - 94	
Delimited	~
Delimited	

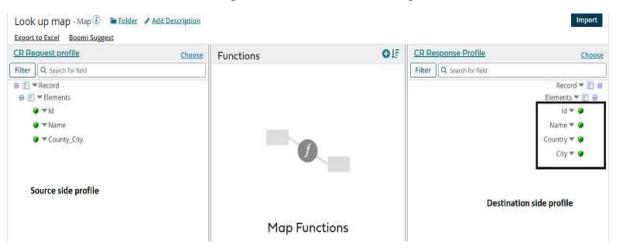
• **File Delimiter** defines the character that delimits the data elements. We see different options such as Star delimited, Comma delimited, and so on. In this Use Case, we choose Comma Delimited.

File Delimiter 🛞	Star Delimited
	Star Delimited
Text Qualifier	Comma Delimited
Text Qualifier Escape 🕧	Tab Delimited Tick Mark (*) Delimited Bar (1) Delimited
Delimiter Escape 🕧	Other Character Byte Character

• After configuring options, it looks like as shown below. Click save and close.

Data Elements Opti	ons	
Use Column Headers 🤇	D 🖬	
File Type	Delimited	×
File Delimiter 🕧	Comma Delimited	¥
Text Qualifier	N/A	Ŷ
Text Qualifier Escape 🤇	D [
Delimiter Escape 🕧		
Escape for Escape 🕧		
Remove Escape 🕕	0	

• We see that the destination profile was added to the map as follows.



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Step 8: Now, we will try to split the field which is Country City from the source profile. We will create a new user function and will add a split function to split the field coming from the source profile. Click on Functions.

CR Request profile	Choose	Functions	O 17	CR.Re	sponse Profile	Choose
Filter Q, Search for field				Filter	Q, Search for field	
 E ▼ Record E ▼ Elements 						Record 🔻 📳 🖻 Elements 🔻 📆 🕑

• Select Create a new function and name the map as shown in the screenshot. Click on + beside inputs.

	Add a Function			
	Category Functions	User Defined Create New Function		
Cross Reference Functio	n Map Map Function 🕖 🐚 🗄	ilder 🖌 Add Description	Outputs	0
Input •		· • •	Output	
Inputs		Steps	Outputs	
Add a more input that will take the data from the maps source profile to begin.	Add ane or more stage to transform	the data between its input twee the map's searce profile and output to the map's dectionized profile.	Add a nese entpot that will a the edited data from the m function to the map's deptined profile.	

• Now, add input i.e., string which we want to split in the input section i.e. to the lefthand side. Here, it will be Country City. Click ok.

Inputs	O Step New Input	05	
	Name	Country_City	
		OK Cancel	
Input •			0
Inputs			Steps

• We need a split function to split the string. We will click + on the Steps section as shown below.

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Inputs O	Steps 0	Outputs
	• • •	• 0
Country_City	Steps Add one or more steps to transform the data between its input from the map's source profile and output to the map's destination profile.	Outp Add a new outpu the edited data function to the m profi

• We can see a few categories in Function i.e., String, Numeric, Date, Lookup, and so on. We have to choose it as per our requirements. Here, we will select Category as String and function as String Split as we are splitting the string. Click ok.

Category	String 🗸	
unctions	String Numeric Date Lookup Connector Custom Scripting Properties	2
	String Remove String To Lower String To Upper String Split	
dd a Function Category	String 🗸	
Functions	Left Character Trim Right Character Trim Whitespace Trim String Append String Prepend String Replace String Replace String Remove String To Lower String To Lower String Split	

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• Here, we will have to define **Split By** i.e., considering what, it has to split the segment. We have 2 options Delimiter and Field length.

Split By	Delivitor	*
Value	Field Largh	
Sugara .		00

• In this case, **Split By** will be delimiter and the **Value** will be _.

Split By	Delimiter	~	
Value	-		
lutputs		0	
			1

• In outputs, we have to mention the expected output values. Click + on the output section.

String Split		
Split By	Delimiter	~
Value	-	
Outputs		00
		Î
		-
ок	Canad	
ок	Cancel	

• Here, the output values will be Country and City, and click ok.

String Split			
Split By	Delimiter	~	
Value	-		
Outputs		(90
Country City			^
			-
ок	Cancel		

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• Now, Drag and drop the input to the first step as shown below. Click save and close.



• Here, we have split the function which is (Country City) as Country and code. Now, we will create a cross-reference table such that actual country and city values will be set in the target system. Click on New on the Build page as shown.

1	Build Deploy - Manage -
er	Welcome Cross Reference Process ×
Î	Cross Reference Process - Process ① Selder Add Desc Options Extensions Add Note Show Navigation Arrange
L	Q Search shapes
	🤁 💫 мар

• Select Type as Cross Reference Table from the drop-down as shown.

* Required fields.		
Type	Process	~
Component Name*	@Process	*
older*	@ API	
0.025	-== Flow Service	
	Component	
Create Cancel	R Certificate	
-	Connection	
A DESCRIPTION OF T	a Connector Operation	
	Cross Reference Table	
	💊 Custom Library	- 0
	G Document Cache	
	Baldon	•

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• Name the component and Folder name as per your choice. Click Create.

Туре	Cross Reference Table	
Component Name*	Place Table	
Folder*	Q \Training-Manasa-B	-

• Click on Update Table Definition and set it to 4.

Refere	rence 1 0	Reference 2	© Reference 3	0	Reference 4	.0	Reference 5	.0	Reference 6
			There is	en data te	disulari->				

• Update the columns with names i.e., Country Code will come from the source side and Country will be set on the destination side. Similarly, the City Code comes from the source profile and the city will be set on the destination side. Click ok.

Number of	Columns* 4
Column 1*	Country Code
Column 2*	Country
Column 3*	City Code
Column 4*	City

Country Code Country Code Country Code City Code	v 🛃 :	Exact Match	Data Match	2		Update Table Definition	0 0 0
mere is no data to displays		¢ City		0 City Code	¢ Country	Country Code	٥
	1			ata to display	mere is no o		

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• Now, assign the values in all 4 columns by clicking + as shown below.



• Here, IN and HYD will be the codes coming from the profile side. India and Hyderabad will be set on the destination side. Click save and close.

0 0 0	Update Table Definition			Data Mat	ch Exact Ma	tch	۷	*	0
]	Country Code	♥ Country	0	City Code	0	City			¢
Ő	IN .	India		HYD		Hyderabad			

• Now, we have to configure the cross-reference table in the map and do a lookup. Select map shape and click on the edit symbol of the function as shown below.

CR Request profile Choose	Functions	017	CRR	esponse Profile	Choose
Filter Q. Search for field	Cross Reference Function Map	/=00	Filter	Q. Search for field	
 E ▼Record E ▼Elements 	• Country, City				Record 🕶 👔 🖲 Elements 🕶 😰 🖷

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• Click on + beside steps and select the category as look up.

nputs C	Steps	© Outputs €
Country_City	1 String Split I Country - Original String Country - City -	• Output Outputs Add a new output that will sen the edited data from the map function to the map's destination profile.

String Numeric	-
Date	
Lookup	
Connector Custom Scripting Properties	
String Remove String To Lower String To Upper String Split	
	Lookup Connector Custom Scripting Properties String Remove String To Lower String To Upper

• Choose Function as Cross Reference Lookup. Click ok.

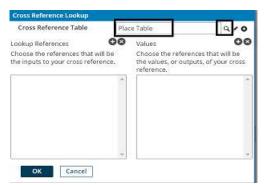
Lookup 🗸	
Sal Lookup	+
Cross Reference Lookup	
Simple Lookup	
	Sgl Lookup Cross Reference Lookup Document Cache Lookup

• Choose the table by clicking on the magnifier icon. Select the references from the left side and values on the right-hand side.

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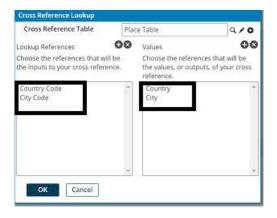




• Here, Lookup references will be Country Code and City Code. The values that we are going to set on the destination side would be Country and city.

Cross Reference Table	Place Ta	able		910
Lookup References Choose the references that wil the inputs to your cross refere	New Looku	r Code r	erences tha butputs, of y	
				4

• After setting the lookup references and Values, it looks like as below. Click ok.



• Now, drag and drop step 1 results in step 2 as shown.

	1 String Split	1200	2 Cross Refere	/≣@⊕
Country_City	- Original String		Country Code	
		Country •	• City Code	Country
		City .		City

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in



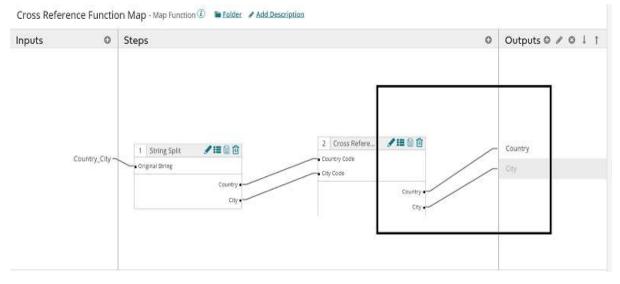
• Click + on outputs and add the fields at the destination side.

nputs O	Steps	0	Outputs
Country_City	1 String Split Image: Strite Split Image: S		Outputs Outputs Add a new output that will see the edited data from the maps function to the map's destination profile.

• Add 2 fields as Country and code as shown.



• Drag and drop step 2 results to the output fields. Click save and close.



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• Now, provide mapping from source to destination as shown in the screenshot. Save and close.

R.Begwest.acefile	Chause	Functions	017	CB.Re	sponse Profile	Choos
Fitter QL search for field				Filter	Q, search for field	
E *Record				A CAMPLE		Record = 10 1
🙃 🔟 🖛 Elements						Elementa 🍽 🖭 📾
😻 🕆 Name				<u> </u>		Name 🕶 😦
· County_City						Country = •
	<u> </u>					City + •
			THE REPORT OF A			
		Cross Reference Function Map	≠■目由		///	
		- Country, Dity		-		

Step 9: Drag and drop the stop shape on the process canvas to indicate the end of the flow.



Step 10: Arrange all the shapes and run the test. Click on Test on the right side and configure the atom as shown below.

►	
Start No Data Message Look up map End and continue	

Step 11: We see that the process has been executed and output has been generated. Click on Stop and select View Source to see the output.

~		-		
Start - No Dat	ia -	Message	Look up map	End and continu
Documents	Logs	Shape Source Data	7	Test
and the second se	View Source	Size (kD)	-	

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Email address

connect@techygeekhub.com

Phone number + 011-40071137 + 91-8810610395

Our offices

Noida Office iThum Plot No -40, Tower A, Office No: 712, Sector-62, Noida, Uttar Pradesh, 201301 Hyderabad Office

Plot no: 6/3, 5th Floor, Techno Pearl Building, HUDA Techno Enclave, HITEC City, Hyderabad, Telangana 500081

