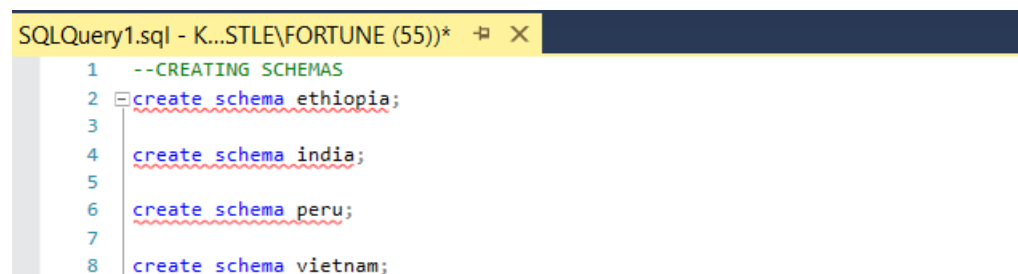ABSTRACT

In the analysis, I created a database named Krystleworks and then 4 schemas each representing the 4 countries Ethiopia, India, Peru and Vietnam under study for the for the child poverty in lower income countries. It also has 12 tables with focus on the household, basic amenities and literacy of the children across the 4 countries.

This was aimed to capture about 12,000 children over 15 years.

The objective of this analysis is to create a better understanding with the analysis of the Child poverty data in Ethiopia, India, Peru, Vietnam. This creating a reporting tool called Child Well-Being Monitor. This would help improve policies towards child development in the future as well as tailor down some factors affecting children in these countries.

Relational Schema

The Ethiopia, India, Vietnam and Peru schemas were created individually for data in their individual countries.

```
SQLQuery1.sql - K...STLE\FORTUNE (55))*   ⫟ ×
  1    --CREATING SCHEMAS
  2  ⊟create schema ethiopia;
  3
  4    create schema india;
  5
  6    create schema peru;
  7
  8    create schema vietnam;
```

Table Identification

Each of the 4 tables were imported into the SQL Server management studio into a default schema. The tables and columns were categorised based on data relating to a child's Household, Access to Basic amenities and Literacy level.

Table creation

To create the tables, firstly I had to create views, selected the required columns for each view, saved the data in the view into a table and then

naming the table alongside the required schema depending on the country.

```sql
10    --CREATING VIEWS AND CREATING TABLES WITH THW VIEWS(SCHEMAS ARE NAMED AFTER THE 4 COUNTRIES)
11    create view household
12    as
13    select region, clustid, commid, typesite, childloc, childid, round, yc,headid, headage, hhsize
14    from dbo.ethiopia_constructed;
15
16    select * into ethiopia.household
17    from household;
```

Created view household from the Ethiopia data and saved it into a table 'Ethiopia.household', with Ethiopia as the schema.

```sql
1     /****** Script for SelectTopNRows command from SSMS  ******/
```

SQLQuery2.sql - KRYSTLE.Krystleworks (KRYSTLE\FORTUNE (63))

```sql
4            ,[commid]
5            ,[typesite]
6            ,[childloc]
7            ,[childid]
8            ,[round]
9            ,[yc]
10           ,[headid]
11           ,[headage]
12           ,[hhsize]
13       FROM [Krystleworks].[ethiopia].[household]
```

82 %

Results | Messages

	region	clustid	commid	typesite	childloc	childid	round	yc	headid	headage	hhsize
1	14	1	ET1011	1	1	ET010001	1	1	1	43	13
2	14	1	ET1011	1	1	ET010001	2	1	3	29	6
3	14	1	ET1011	1	1	ET010001	3	1	1	50	10
4	4	90	ETMC028	1	1	ET010001	4	1	16	34	7
5	14	1	ET1011	1	1	ET010001	5	1	8	33	4
6	14	1	ET1011	1	1	ET010002	1	1	1	32	3
7	14	1	ET1011	1	1	ET010002	2	1	1	36	4
8	14	1	ET1011	1	1	ET010002	3	1	1	39	4
9	14	1	ET1011	1	1	ET010002	4	1	1	43	3
10	14	1	ET1011	1	1	ET010002	5	1	1	46	4
11	14	1	ET1011	1	1	ET010003	1	1	1	65	7

The above shows a screenshot of the table.

```
43  create view basicamenity
44  as
45  select sv_new, cd_new, drwaterq_new, toiletq_new, elecq_new, childid, round, cookingq_new,hq_new
46  from dbo.ethiopia_constructed;
47
48  select * into ethiopia.basicamenity
49  from basicamenity;
```

Created view basic amenity from the Ethiopia data and saved it into a table 'Ethiopia.basicamenity, with Ethiopia as the schema.

```
1   /****** Script for SelectTopNRows command from SSMS  ******/
2   SELECT TOP (1000) [sv_new]
3         ,[cd_new]
4         ,[drwaterq_new]
5         ,[toiletq_new]
6         ,[elecq_new]
7         ,[childid]
8         ,[round]
9         ,[cookingq_new]
10        ,[hq_new]
11      FROM [Krystleworks].[ethiopia].[basicamenity]
```

82 %

⊞ Results 📧 Messages

	sv_new	cd_new	drwaterq_new	toiletq_new	elecq_new	childid	round	cookingq_new	hq_new
1	0.75	0.5	1	1	1	ET010001	1	0	0.525641024
2	1	0.699999988	1	1	1	ET010001	2	1	0.555555582
3	0.75	0.699999988	1	1	1	ET010001	3	0	0.533333361
4	0.75	0.600000024	1	1	1	ET010001	4	0	0.690476179
5	1	0.300000012	1	1	1	ET010001	5	1	0.291666657
6	0.75	0	1	1	1	ET010002	1	0	0.361111104
7	0.75	0.400000006	1	1	1	ET010002	2	0	0.333333343
8	1	0.600000024	1	1	1	ET010002	3	1	0.333333343
9	1	0.600000024	1	1	1	ET010002	4	1	0.611111104
10	1	0.699999988	1	1	1	ET010002	5	1	0.541666687
11	0.5	0.300000012	1	0	1	ET010003	1	0	0.523809552

Screenshot of the table above.

```
75  create view literacy
76  as
77  select hschool, hstudy, commsch, enrol, levlread, childid, round, levlwrit,hplay
78  from dbo.ethiopia_constructed;
79
80  select * into ethiopia.literacy
81  from literacy;
```

Created view literacy from the Ethiopia data and saved it into a table 'Ethiopia.literacy, with Ethiopia as the schema.

```
1    /****** Script for SelectTopNRows command from SSMS  ******/
2    SELECT TOP (1000) [hschool]
3          ,[hstudy]
4          ,[commsch]
5          ,[enrol]
6          ,[levlread]
7          ,[childid]
8          ,[round]
9          ,[levlwrit]
10         ,[hplay]
11   FROM [Krystleworks].[ethiopia].[literacy]
```

82 %

Results | Messages

	hschool	hstudy	commsch	enrol	levlread	childid	round	levlwrit	hplay
1				0		ET010001	1		
2	9	1		0		ET010001	2		5
3	8	2		1	3	ET010001	3	2	4
4	8	1	30	1		ET010001	4		4
5	8	0	40	1		ET010001	5		4
6				0		ET010002	1		
7				0		ET010002	2		
8	9	2		1	4	ET010002	3	3	4
9	6	2	30	1		ET010002	4		5
10	8	3	30	1		ET010002	5		4

Screenshot of the table above.

For INDIA

```
create view household2
as
select region, clustid, commid, typesite, childloc, childid, round, yc,headid, headage, hhsize
from dbo.india_constructed;

select * into india.household
from household2;
```

Created view household2 from the india data and saved it into a table 'india.household', with INDIA as the schema.

```
1    /****** Script for SelectTopNRows command from SSMS  ******/
2   SELECT TOP (1000) [region]
3         ,[clustid]
4         ,[commid]
5         ,[typesite]
6         ,[childloc]
7         ,[childid]
8         ,[round]
9         ,[yc]
10        ,[headid]
11        ,[headage]
12        ,[hhsize]
13    FROM [Krystleworks].[india].[household]
```

82 %

Results | Messages

	region	clustid	commid	typesite	childloc	childid	round	yc	headid	headage	hhsize
1	21	1	IN033	1	1	IN010001	1	1	1	27	3
2	21	1	IN033	1	1	IN010001	2	1	1	31	4
3	21	1	IN033	1	1	IN010001	3	1	1	34	4
4	21	1	IN033	1	1	IN010001	4	1	1	38	4
5	21	1	IN033	1	1	IN010001	5	1	1	41	4
6	21	1	IN033	1	1	IN010002	1	1	1	41	3
7	21	1	IN033	1	1	IN010002	2	1	1	45	3
8	21	1	IN033	1	1	IN010002	3	1	1	48	3
9	21	1	IN033	1	1	IN010002	4	1	2	43	2
10	21	1	IN033	1	1	IN010002	5	1	2	46	2
11	21	1	IN033	1	1	IN010003	1	1	2	30	4
12	21	1	IN033	1	1	IN010003	2	1	1	74	4
13	21	1	IN033	1	1	IN010003	3	1	2	37	4

The above shows a view of the table.

Created view basic amenity2 from the india data and saved it into a table 'india.basicamenity, with INDIA as the schema.

```sql
51  create view basicamenity2
52  as
53  select sv, cd, drwaterq, toiletq, elecq, childid, round, cookingq,hq
54  from dbo.india_constructed;
55
56  select * into india.basicamenity
57  from basicamenity2;
```

```sql
1   /****** Script for SelectTopNRows command from SSMS  ******/
2   SELECT TOP (1000) [sv]
3         ,[cd]
4         ,[drwaterq]
5         ,[toiletq]
6         ,[elecq]
7         ,[childid]
8         ,[round]
9         ,[cookingq]
10        ,[hq]
11    FROM [Krystleworks].[india].[basicamenity]
```

82 %

⊞ Results ⊟ Messages

	sv	cd	drwaterq	toiletq	elecq	childid	round	cookingq	hq
1	1	0.444444448	1	1	1	IN010001	1	1	0.805555582
2	1	0.444444448	1	1	1	IN010001	2	1	0.833333313
3	1	0.666666687	1	1	1	IN010001	3	1	0.875
4	1	0.555555582	1	1	1	IN010001	4	1	0.791666687
5	1	0.666666687	1	1	1	IN010001	5	1	0.708333313
6	1	0.333333343	1	1	1	IN010002	1	1	0.805555582
7	1	0.444444448	1	1	1	IN010002	2	1	0.861111104
8	1	0.444444448	1	1	1	IN010002	3	1	0.861111104
9	1	0.444444448	1	1	1	IN010002	4	1	0.916666687
10	1	0.222222224	1	1	1	IN010002	5	1	0.833333313
11	1	0.333333343	1	1	1	IN010003	1	1	0.791666687
12	1	0.333333343	1	1	1	IN010003	2	1	0.541666687
13	1	0.444444448	1	1	1	IN010003	3	1	0.583333313
14	1	0.444444448	1	1	1	IN010003	4	1	0.791666687

Created view basic literacy2 from the india data and saved it into a table 'india.literacy, with INDIA as the schema.

```
83  create view literacy2
84  as
85  select hschool, hstudy, commsch, enrol, levlread, childid, round, levlwrit,hplay
86  from dbo.india_constructed;
87
88  select * into india.literacy
89  from literacy2;
```

```
1   /****** Script for SelectTopNRows command from SSMS ******/
2   SELECT TOP (1000) [hschool]
3         ,[hstudy]
4         ,[commsch]
5         ,[enrol]
6         ,[levlread]
7         ,[childid]
8         ,[round]
9         ,[levlwrit]
10        ,[hplay]
11    FROM [Krystleworks].[india].[literacy]
```

82 %

⊞ Results   ▣ Messages

	hschool	hstudy	commsch	enrol	levlread	childid	round	levlwrit	hplay
1				0		IN010001	1		
2	6	3		0		IN010001	2		4
3	7	4		1	4	IN010001	3	3	3
4	8	3	40	1		IN010001	4		3
5	11	1	60	1		IN010001	5		2
6				0		IN010002	1		
7	6	1		1		IN010002	2		8
8	8	1		1	4	IN010002	3	3	5
9	10	0	25	1		IN010002	4		4
10	8	2	40	1		IN010002	5		4

For PERU

Created view household3 from the Peru data and saved it into a table 'household, with PERU as the schema.

```
27  create view household3
28  as
29  select region, clustid, placeid, typesite, childloc, childid, round, yc,headid, headage, hhsize
30  from dbo.peru_constructed;
31
32  select * into peru.household
33  from household3;
```

```
1   /****** Script for SelectTopNRows command from SSMS ******/
2   SELECT TOP (1000) [region]
3        ,[clustid]
4        ,[placeid]
5        ,[typesite]
6        ,[childloc]
7        ,[childid]
8        ,[round]
9        ,[yc]
10       ,[headid]
11       ,[headage]
12       ,[hhsize]
13    FROM [Krystleworks].[peru].[household]
```

82 %

⊞ Results 🗊 Messages

	region	clustid	placeid	typesite	childloc	childid	round	yc	headid	headage	hhsize
1	31	12	PE12C02	1	1	PE121006	5	1	2	35	6
2	31	12	PE12C01	1	1	PE121007	1	1	7	67	9
3	31	12	PE14C03	1	1	PE121007	2	1	9	23	5
4	31	12	PE81MC27	1	1	PE121007	3	1	9	25	5
5	31	12	PE81MC27	1	1	PE121007	4	1	9	27	5
6	31	12		1	1	PE121007	5	1	9	31	6
7	31	12	PE12C01	1	1	PE121008	1	1	3	49	8
8	31	12	PE12C03	1	1	PE121008	2	1	1	30	8
9	31	12	PE12MC09	1	1	PE121008	3	1	1	32	8
10	31	12	PE12MC09	1	1	PE121008	4	1	1	36	9
11	31	12		1	1	PE121008	5	1	1	39	9
12	31	12	PE12C01	1	1	PE121009	1	1	1	41	4

Created view basic amenity3 from the Peru data and saved it into a table 'basicamenity, with PERU as the schema.

```
59  create view basicamenity3
60  as
61  select sv, cd, drwaterq, toiletq, elecq, childid, round, cookingq,hq
62  from dbo.peru_constructed;
63
64  select * into peru.basicamenity
65  from basicamenity3;
```

```
1   /****** Script for SelectTopNRows command from SSMS  ******/
2   SELECT TOP (1000) [sv]
3         ,[cd]
4         ,[drwaterq]
5         ,[toiletq]
6         ,[elecq]
7         ,[childid]
8         ,[round]
9         ,[cookingq]
10        ,[hq]
11    FROM [Krystleworks].[peru].[basicamenity]
```

82 % ▾

⊞ Results 🗗 Messages

	sv	cd	drwaterq	toiletq	elecq	childid	round	cookingq	hq
1	1	0.666666687	1	1	1	PE121006	5	1	0.761904776
2	1	0.333333343	1	1	1	PE121007	1	1	0.791353405
3	1	0.666666687	1	1	1	PE121007	2	1	0.757962525
4	1	0.583333313	1	1	1	PE121007	3	1	0.273684204
5	0.75	0.666666687	1	1	1	PE121007	4	0	0.78644067
6	1	0.666666687	1	1	1	PE121007	5	1	0.778911591
7	1	0.5	1	1	1	PE121008	1	1	0.271616548
8	1	0.75	1	1	1	PE121008	2	1	0.254537463
9	1	0.666666687	1	1	1	PE121008	3	1	0.519736826
10	1	0.416666657	1	1	1	PE121008	4	1	0.762711883
11	1	0.666666687	1	1	1	PE121008	5	1	0.761904776
12	1	0.416666657	1	1	1	PE121009	1	1	0.513157904
13	1	0.666666687	1	1	1	PE121009	2	1	0.752634645

Created view literacy3 from the Peru data and saved it into a table 'literacy, with PERU as the schema.

```
91  create view literacy3
92  as
93  select hschool, hstudy, commsch, enrol, levlread, childid, round, levlwrit,hplay
94  from dbo.peru_constructed;
95
96  select * into peru.literacy
97  from literacy3;
98
```

```
1   /****** Script for SelectTopNRows command from SSMS ******/
2   SELECT TOP (1000) [hschool]
3         ,[hstudy]
4         ,[commsch]
5         ,[enrol]
6         ,[levlread]
7         ,[childid]
8         ,[round]
9         ,[levlwrit]
10        ,[hplay]
11    FROM [Krystleworks].[peru].[literacy]
```

82 %

Results | Messages

	hschool	hstudy	commsch	enrol	levlread	childid	round	levlwrit	hplay
1	6	2	45	1		PE121006	5		4
2				0		PE121007	1		
3	6	2		0		PE121007	2		3
4	7	1		1	4	PE121007	3	3	4
5	7	2	10	1		PE121007	4		2
6	8	1	10	1		PE121007	5		2
7				0		PE121008	1		
8	5	2		0		PE121008	2		4
9	7	3		1	4	PE121008	3	3	3
10	6	1	10	1		PE121008	4		4
11	0	0		0		PE121008	5		5

For VIETNAM

Created view household4 from the vietnam data and saved it into a table 'vietnam.household', with Ethiopia as the schema.

```
35  create view household4
36  as
37  select region, clustid, commid, typesite, childloc, childid, round, yc,headid, headage, hhsize
38  from dbo.vietnam_constructed;
39
40  select * into vietnam.household
41  from household4;
```

```
1   /****** Script for SelectTopNRows command from SSMS  ******/
2   SELECT TOP (1000) [region]
3         ,[clustid]
4         ,[commid]
5         ,[typesite]
6         ,[childloc]
7         ,[childid]
8         ,[round]
9         ,[yc]
10        ,[headid]
11        ,[headage]
12        ,[hhsize]
13    FROM [Krystleworks].[vietnam].[household]
```

82 %

Results | Messages

	region	clustid	commid	typesite	childloc	childid	round	yc	headid	headage	hhsize
1	52	13	VN022	2	1	VN130039	3	1	1	40	6
2	52	13	VN022	2	1	VN130039	4	1	1	44	7
3	52	13	VN022	2	1	VN130039	5	1	1	47	6
4	52	13	VN022	2	1	VN130040	1	1	2	53	8
5	52	13	VN022	2	1	VN130040	2	1	4	29	3
6	52	13	VN022	2	1	VN130040	3	1	4	32	4
7	52	13	VN022	2	1	VN130040	4	1	4	36	6
8	52	13	VN022	2	1	VN130040	5	1	4	39	4
9	52	13	VN022	2	1	VN130041	1	1	1	31	3
10	52	13	VN022	2	1	VN130041	2	1	1	35	4
11	52	13	VN022	2	1	VN130041	3	1	1	38	4
12	52	13	VN022	2	1	VN130041	4	1	1	42	4
13	52	13	VN022	2	1	VN130041	5	1	1	45	4
14	52	13	VN022	2	1	VN130042	1	1	1	26	3

The above shows a view of the table.

Created view basic amenity4 from the vietnam data and saved it into a table 'vietnam.basicamenity, with Ethiopia as the schema.

```
67  create view basicamenity4
68  as
69  select sv_new, cd_new, drwaterq_new, toiletq_new, elecq_new, childid, round, cookingq_new,hq_new
70  from dbo.vietnam_constructed;
71
72  select * into vietnam.basicamenity
73  from basicamenity4;
74
```

```
1   /****** Script for SelectTopNRows command from SSMS  ******/
2   SELECT TOP (1000) [sv_new]
3         ,[cd_new]
4         ,[drwaterq_new]
5         ,[toiletq_new]
6         ,[elecq_new]
7         ,[childid]
8         ,[round]
9         ,[cookingq_new]
10        ,[hq_new]
11    FROM [Krystleworks].[vietnam].[basicamenity]
```

82 %

Results Messages

	sv_new	cd_new	drwaterq_new	toiletq_new	elecq_new	childid	round	cookingq_new	hq_new
1	0.75	0.777777791	0	1	1	VN130039	3	1	0.833333313
2	0.75	0.777777791	0	1	1	VN130039	4	1	0.869047642
3	0.75	0.777777791	0	1	1	VN130039	5	1	0.861111104
4	0.5	0.444444448	0	1	1	VN130040	1	0	0.8125
5	0.75	0.444444448	0	1	1	VN130040	2	1	0.916666687
6	0.5	0.444444448	0	1	1	VN130040	3	0	0.875
7	0.75	0.777777791	0	1	1	VN130040	4	1	0.833333313
8	0.5	0.666666687	0	1	1	VN130040	5	0	1
9	0.75	0.333333343	0	1	1	VN130041	1	1	0.861111104
10	0.5	0.444444448	0	1	1	VN130041	2	0	0.875
11	0.75	0.555555582	0	1	1	VN130041	3	1	0.875
12	0.75	0.666666687	0	1	1	VN130041	4	1	0.875

Created view literacy4 from the vietnam data and saved it into a table 'vietnam.literacy, with Ethiopia as the schema.

```
99  create view literacy4
100   as
101   select hschool, hstudy, commsch, enrol, levlread, childid, round, levlwrit,hplay
102   from dbo.vietnam_constructed;
103
104  select * into vietnam.literacy
105   from literacy4;
```

```
1   /****** Script for SelectTopNRows command from SSMS ******/
2   SELECT TOP (1000) [hschool]
3         ,[hstudy]
4         ,[commsch]
5         ,[enrol]
6         ,[levlread]
7         ,[childid]
8         ,[round]
9         ,[levlwrit]
10         ,[hplay]
11     FROM [Krystleworks].[vietnam].[literacy]
```

82 %

Results Messages

	hschool	hstudy	commsch	enrol	levlread	childid	round	levlwrit	hplay
1	4	5		1	4	VN130039	3	3	4
2	7	4	60	1		VN130039	4		4
3	9	3	20	1		VN130039	5		3
4						VN130040	1		
5	7	0		1		VN130040	2		7
6	5	4		1	4	VN130040	3	3	4
7	8	4	30	1		VN130040	4		3
8	7.5	4	15	1		VN130040	5		2.099999905
9						VN130041	1		
10	9	0		1		VN130041	2		3
11	4	4		1	4	VN130041	3	3	4
12	5	4	30	1		VN130041	4		3

TRANSFORMATIONS

From the data inspection I observed most columns had encoding and appeared numeric hence the need to transform them and remove the encodings to actual meanings by creating stored procedures to update each column of the tables that with encodings.

```sql
107    --TRANSFORMING THE TABLES BY CREATING STOREED PROCEDURES FOR ALL ENCODING
108    create procedure ethiopiahousehold_transfromed
109    as
110    begin
111        UPDATE ethiopia.household
112        set region =
113        case
114        when region = 1 then 'Tigray'
115        when region = 2 then 'Afar'
116        when region = 3 then 'Amhara'
117        when region = 4 then 'Oromiya'
118        when region = 5 then 'Somali'
119        when region = 6 then 'Benshangul Gumz'
120        when region = 7 then 'SNNP'
121        when region = 12 then 'Gambela'
122        when region = 13 then 'Harari'
123        when region = 14 then 'Addis Ababa City Administration'
124        when region = 15 then 'Dire Dawa City Administration'
125        else 'null'
126        end
127
128        UPDATE ethiopia.household
129        set typesite =
130        case
131        when typesite = 0 then 'urban'
132        when typesite = 1 then 'rural'
133        else 'null'
134        end
135
136        UPDATE ethiopia.household
137        set childloc =
138        case
139        when childloc = 0 then 'no'
140        when childloc = 1 then 'yes'
141        else 'null'
142        end
143
144        UPDATE ethiopia.household
145        set yc =
146        case
147        when yc = 0 then 'Older cohort'
148        when yc = 1 then 'Younger cohort'
149        else 'null'
150        end
151
152        UPDATE ethiopia.household
153        set headage =
154        case
155        when headage = -9999 then 'nk'
156        else 'null'
157        end
158
159    end;
160    go
161
162    execute ethiopiahousehold transfromed;
```

```sql
/****** Script for SelectTopNRows command from SSMS ******/
SELECT TOP (1000) [region]
      ,[clustid]
      ,[commid]
      ,[typesite]
      ,[childloc]
      ,[childid]
      ,[round]
      ,[yc]
      ,[headid]
      ,[headage]
      ,[hhsize]
  FROM [Krystleworks].[ethiopia].[household]
```

62 %

Results | **Messages**

	region	clustid	commid	typesite	childloc	childid	round	yc	headid	headage	hhsize
1	Addis Ababa City Administration	1	ET1011	rural	yes	ET010001	1	Younger cohort	1	null	13
2	Addis Ababa City Administration	1	ET1011	rural	yes	ET010001	2	Younger cohort	3	null	6
3	Addis Ababa City Administration	1	ET1011	rural	yes	ET010001	3	Younger cohort	1	null	10
4	Oromiya	90	ETMC028	rural	yes	ET010001	4	Younger cohort	16	null	7
5	Addis Ababa City Administration	1	ET1011	rural	yes	ET010001	5	Younger cohort	8	null	4
6	Addis Ababa City Administration	1	ET1011	rural	yes	ET010002	1	Younger cohort	1	null	3
7	Addis Ababa City Administration	1	ET1011	rural	yes	ET010002	2	Younger cohort	1	null	4
8	Addis Ababa City Administration	1	ET1011	rural	yes	ET010002	3	Younger cohort	1	null	4
9	Addis Ababa City Administration	1	ET1011	rural	yes	ET010002	4	Younger cohort	1	null	3
10	Addis Ababa City Administration	1	ET1011	rural	yes	ET010002	5	Younger cohort	1	null	4
11	Addis Ababa City Administration	1	ET1011	rural	yes	ET010003	1	Younger cohort	1	null	7

```sql
create procedure indiahousehold_transfromed
as
begin
    UPDATE india.household
    set region =
    case
    when region = 24 then 'Others'
    when region = 23 then 'Telangana'
    when region = 77 then 'Not known'
    when region = 22 then 'Rayalaseema'
    when region = 21 then 'Coastal Andhra'
    else 'null'
    end

    UPDATE india.household
    set typesite =
    case
    when typesite = 1 then 'urban'
    when typesite = 2 then 'rural'
    when typesite = 77 then 'Not known'
    else 'null'
    end

    UPDATE india.household
    set childloc =
    case
    when childloc = 0 then 'no'
    when childloc = 1 then 'yes'
    else 'null'
    end

    UPDATE india.household
    set yc =
    case
    when yc = 0 then 'Older cohort'
    when yc = 1 then 'Younger cohort'
    else 'null'
    end
end;
go

execute indiahousehold_transfromed;
```

```sql
1    /****** Script for SelectTopNRows command from SSMS  ******/
2    SELECT TOP (1000) [region]
3          ,[clustid]
4          ,[commid]
5          ,[typesite]
6          ,[childloc]
7          ,[childid]
8          ,[round]
9          ,[yc]
10         ,[headid]
11         ,[headage]
12         ,[hhsize]
13    FROM [Krystleworks].[india].[household]
```

62 %

Results | Messages

	region	clustid	commid	typesite	childloc	childid	round	yc	headid	headage	hhsize
1	Coastal Andhra	1	IN033	urban	yes	IN010001	1	Younger cohort	1	27	3
2	Coastal Andhra	1	IN033	urban	yes	IN010001	2	Younger cohort	1	31	4
3	Coastal Andhra	1	IN033	urban	yes	IN010001	3	Younger cohort	1	34	4
4	Coastal Andhra	1	IN033	urban	yes	IN010001	4	Younger cohort	1	38	4
5	Coastal Andhra	1	IN033	urban	yes	IN010001	5	Younger cohort	1	41	4
6	Coastal Andhra	1	IN033	urban	yes	IN010002	1	Younger cohort	1	41	3
7	Coastal Andhra	1	IN033	urban	yes	IN010002	2	Younger cohort	1	45	3
8	Coastal Andhra	1	IN033	urban	yes	IN010002	3	Younger cohort	1	48	3
9	Coastal Andhra	1	IN033	urban	yes	IN010002	4	Younger cohort	2	43	2
10	Coastal Andhra	1	IN033	urban	yes	IN010002	5	Younger cohort	2	46	2

```sql
create procedure peruhousehold_transfromed
as
begin
    UPDATE peru.household
    set region =
    case
    when region = 32 then 'Sierra'
    when region = 33 then 'Selva'
    when region = 88 then 'N/A'
    when region = 31 then 'Costa'
    else 'null'
    end

    UPDATE peru.household
    set typesite =
    case
    when typesite = 1 then 'urban'
    when typesite = 2 then 'rural'
    else 'null'
    end

    UPDATE peru.household
    set childloc =
    case
    when childloc = 0 then 'no'
    when childloc = 1 then 'yes'
    else 'null'
    end

    UPDATE peru.household
    set yc =
    case
    when yc = 0 then 'Older cohort'
    when yc = 1 then 'Younger cohort'
    else 'null'
    end

    UPDATE peru.household
    set headage =
    case
    when headage = -9999 then 'nk'
    else 'null'
    end

end;
go

execute peruhousehold_transfromed;
```

```
   1    /****** Script for SelectTopNRows command from SSMS  ******/
   2  ⊟SELECT TOP (1000) [region]
   3        ,[clustid]
   4        ,[placeid]
   5        ,[typesite]
   6        ,[childloc]
   7        ,[childid]
   8        ,[round]
   9        ,[yc]
  10        ,[headid]
  11        ,[headage]
  12        ,[hhsize]
  13    FROM [Krystleworks].[peru].[household]
```

62 % ▼ ◄

⊞ Results 📰 Messages

	region	clustid	placeid	typesite	childloc	childid	round	yc	headid	headage	hhsize
1	Costa	12	PE12C02	urban	yes	PE121006	5	Younger cohort	2	null	6
2	Costa	12	PE12C01	urban	yes	PE121007	1	Younger cohort	7	null	9
3	Costa	12	PE14C03	urban	yes	PE121007	2	Younger cohort	9	null	5
4	Costa	12	PE81MC27	urban	yes	PE121007	3	Younger cohort	9	null	5
5	Costa	12	PE81MC27	urban	yes	PE121007	4	Younger cohort	9	null	5
6	Costa	12		urban	yes	PE121007	5	Younger cohort	9	null	6
7	Costa	12	PE12C01	urban	yes	PE121008	1	Younger cohort	3	null	8
8	Costa	12	PE12C03	urban	yes	PE121008	2	Younger cohort	1	null	8
9	Costa	12	PE12MC09	urban	yes	PE121008	3	Younger cohort	1	null	8
10	Costa	12	PE12MC09	urban	yes	PE121008	4	Younger cohort	1	null	9
11	Costa	12		urban	yes	PE121008	5	Younger cohort	1	null	9
12	Costa	12	PE12C01	urban	yes	PE121009	1	Younger cohort	1	null	4
13	Costa	12	PE12C02	urban	yes	PE121009	2	Younger cohort	1	null	4

```sql
create procedure vietnamhousehold_transfromed
as
begin
    UPDATE vietnam.household
    set region =
    case
    when region = 51 then 'Northern Uplands'
    when region = 52 then 'Red River Delta'
    when region = 53 then 'Phu Yen'
    when region = 54 then 'Da Nang'
    when region = 55 then 'Highlands'
    when region = 56 then 'South Eastern'
    when region = 57 then 'Mekong River Delta'
    when region = 58 then 'Other'
    else 'null'
    end

    UPDATE vietnam.household
    set typesite =
    case
    when typesite = 1 then 'urban'
    when typesite = 2 then 'rural'
    else 'null'
    end

    UPDATE vietnam.household
    set childloc =
    case
    when childloc = 0 then 'no'
    when childloc = 1 then 'yes'
    else 'null'
    end

    UPDATE vietnam.household
    set yc =
    case
    when yc = 0 then 'Older cohort'
    when yc = 1 then 'Younger cohort'
    else 'null'
    end
end;
go

execute vietnamhousehold_transfromed;
```

```
1    /****** Script for SelectTopNRows command from SSMS  ******/
2  ⊟SELECT TOP (1000) [region]
3        ,[clustid]
4        ,[commid]
5        ,[typesite]
6        ,[childloc]
7        ,[childid]
8        ,[round]
9        ,[yc]
10       ,[headid]
11       ,[headage]
12       ,[hhsize]
13    FROM [Krystleworks].[vietnam].[household]
```

62 % ▼ ◄

Results | **Messages**

	region	clustid	commid	typesite	childloc	childid	round	yc	headid	headage	hhsize
1	Red River Delta	13	VN022	rural	yes	VN130039	3	Younger cohort	1	40	6
2	Red River Delta	13	VN022	rural	yes	VN130039	4	Younger cohort	1	44	7
3	Red River Delta	13	VN022	rural	yes	VN130039	5	Younger cohort	1	47	6
4	Red River Delta	13	VN022	rural	yes	VN130040	1	Younger cohort	2	53	8
5	Red River Delta	13	VN022	rural	yes	VN130040	2	Younger cohort	4	29	3
6	Red River Delta	13	VN022	rural	yes	VN130040	3	Younger cohort	4	32	4
7	Red River Delta	13	VN022	rural	yes	VN130040	4	Younger cohort	4	36	6
8	Red River Delta	13	VN022	rural	yes	VN130040	5	Younger cohort	4	39	4
9	Red River Delta	13	VN022	rural	yes	VN130041	1	Younger cohort	1	31	3
10	Red River Delta	13	VN022	rural	yes	VN130041	2	Younger cohort	1	35	4
11	Red River Delta	13	VN022	rural	yes	VN130041	3	Younger cohort	1	38	4
12	Red River Delta	13	VN022	rural	yes	VN130041	4	Younger cohort	1	42	4
13	Red River Delta	13	VN022	rural	yes	VN130041	5	Younger cohort	1	45	4

```
create procedure ethiopiabasicamenity_transformed
as
begin
    update ethiopia.basicamenity
    set drwaterq_new =
    case
    when drwaterq_new = 0 then 'no'
    when drwaterq_new = 1 then 'yes'
    else 'null'
    end

    update ethiopia.basicamenity
    set toiletq_new =
    case
    when toiletq_new = 0 then 'no'
    when toiletq_new = 1 then 'yes'
    else 'null'
    end

    update ethiopia.basicamenity
    set elecq_new =
    case
    when elecq_new = 0 then 'no'
    when elecq_new = 1 then 'yes'
    else 'null'
    end

    update ethiopia.basicamenity
    set cookingq_new =
    case
    when cookingq_new = 0 then 'no'
    when cookingq_new = 1 then 'yes'
    else 'null'
    end
end;
go

execute ethiopiabasicamenity_transformed;
```

```sql
   1    /****** Script for SelectTopNRows command from SSMS ******/
   2  ⊟SELECT TOP (1000) [sv_new]
   3        ,[cd_new]
   4        ,[drwaterq_new]
   5        ,[toiletq_new]
   6        ,[elecq_new]
   7        ,[childid]
   8        ,[round]
   9        ,[cookingq_new]
  10        ,[hq_new]
  11    FROM [Krystleworks].[ethiopia].[basicamenity]
```

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⊞ Results 📄 Messages

	sv_new	cd_new	drwaterq_new	toiletq_new	elecq_new	childid	round	cookingq_new	hq_new
1	0.75	0.5	yes	yes	yes	ET010001	1	no	0.525641024
2	1	0.699999988	yes	yes	yes	ET010001	2	yes	0.555555582
3	0.75	0.699999988	yes	yes	yes	ET010001	3	no	0.533333361
4	0.75	0.600000024	yes	yes	yes	ET010001	4	no	0.690476179
5	1	0.300000012	yes	yes	yes	ET010001	5	yes	0.291666657
6	0.75	0	yes	yes	yes	ET010002	1	no	0.361111104
7	0.75	0.400000006	yes	yes	yes	ET010002	2	no	0.333333343
8	1	0.600000024	yes	yes	yes	ET010002	3	yes	0.333333343
9	1	0.600000024	yes	yes	yes	ET010002	4	yes	0.611111104
10	1	0.699999988	yes	yes	yes	ET010002	5	yes	0.541666687
11	0.5	0.300000012	yes	no	yes	ET010003	1	no	0.523809552

```sql
341  create procedure indiabasicamenity_transformed
342  as
343  begin
344      update india.basicamenity
345      set drwaterq =
346      case
347      when drwaterq = 0 then 'no'
348      when drwaterq = 1 then 'yes'
349      else 'null'
350      end
351
352      update india.basicamenity
353      set toiletq =
354      case
355      when toiletq = 0 then 'no'
356      when toiletq = 1 then 'yes'
357      else 'null'
358      end
359
360      update india.basicamenity
361      set elecq =
362      case
363      when elecq = 0 then 'no'
364      when elecq = 1 then 'yes'
365      else 'null'
366      end
367
368      update india.basicamenity
369      set cookingq =
370      case
371      when cookingq = 0 then 'no'
372      when cookingq = 1 then 'yes'
373      else 'null'
374      end
375  end;
376  go
377
378  execute indiabasicamenity_transformed;
```

```
1   /****** Script for SelectTopNRows command from SSMS  ******/
2   SELECT TOP (1000) [sv]
3         ,[cd]
4         ,[drwaterq]
5         ,[toiletq]
6         ,[elecq]
7         ,[childid]
8         ,[round]
9         ,[cookingq]
10        ,[hq]
11    FROM [Krystleworks].[india].[basicamenity]
```

62 %

Results | Messages

	sv	cd	drwaterq	toiletq	elecq	childid	round	cookingq	hq
1	1	0.444444448	yes	yes	yes	IN010001	1	yes	0.805555582
2	1	0.444444448	yes	yes	yes	IN010001	2	yes	0.833333313
3	1	0.666666687	yes	yes	yes	IN010001	3	yes	0.875
4	1	0.555555582	yes	yes	yes	IN010001	4	yes	0.791666687
5	1	0.666666687	yes	yes	yes	IN010001	5	yes	0.708333313
6	1	0.333333343	yes	yes	yes	IN010002	1	yes	0.805555582
7	1	0.444444448	yes	yes	yes	IN010002	2	yes	0.861111104
8	1	0.444444448	yes	yes	yes	IN010002	3	yes	0.861111104
9	1	0.444444448	yes	yes	yes	IN010002	4	yes	0.916666687
10	1	0.222222224	yes	yes	yes	IN010002	5	yes	0.833333313
11	1	0.333333343	yes	yes	yes	IN010003	1	yes	0.791666687
12	1	0.333333343	yes	yes	yes	IN010003	2	yes	0.541666687
13	1	0.444444448	yes	yes	yes	IN010003	3	yes	0.583333313

```sql
create procedure perubasicamenity_transformed
as
begin
    update peru.basicamenity
    set drwaterq =
    case
    when drwaterq = 0 then 'no'
    when drwaterq = 1 then 'yes'
    else 'null'
    end

    update peru.basicamenity
    set toiletq =
    case
    when toiletq = 0 then 'no'
    when toiletq = 1 then 'yes'
    else 'null'
    end

    update peru.basicamenity
    set elecq =
    case
    when elecq = 0 then 'no'
    when elecq = 1 then 'yes'
    else 'null'
    end

    update peru.basicamenity
    set cookingq =
    case
    when cookingq = 0 then 'no'
    when cookingq = 1 then 'yes'
    else 'null'
    end
end;
go

execute perubasicamenity_transformed;
```

```
    1    /****** Script for SelectTopNRows command from SSMS  ******/
    2  □SELECT TOP (1000) [sv]
    3         ,[cd]
    4         ,[drwaterq]
    5         ,[toiletq]
    6         ,[elecq]
    7         ,[childid]
    8         ,[round]
    9         ,[cookingq]
   10         ,[hq]
   11    FROM [Krystleworks].[peru].[basicamenity]
```

62 %

Results | **Messages**

	sv	cd	drwaterq	toiletq	elecq	childid	round	cookingq	hq
1	1	0.666666687	yes	yes	yes	PE121006	5	yes	0.761904776
2	1	0.333333343	yes	yes	yes	PE121007	1	yes	0.791353405
3	1	0.666666687	yes	yes	yes	PE121007	2	yes	0.757962525
4	1	0.583333313	yes	yes	yes	PE121007	3	yes	0.273684204
5	0.75	0.666666687	yes	yes	yes	PE121007	4	no	0.78644067
6	1	0.666666687	yes	yes	yes	PE121007	5	yes	0.778911591
7	1	0.5	yes	yes	yes	PE121008	1	yes	0.271616548
8	1	0.75	yes	yes	yes	PE121008	2	yes	0.254537463
9	1	0.666666687	yes	yes	yes	PE121008	3	yes	0.519736826
10	1	0.416666657	yes	yes	yes	PE121008	4	yes	0.762711883
11	1	0.666666687	yes	yes	yes	PE121008	5	yes	0.761904776
12	1	0.416666657	yes	yes	yes	PE121009	1	yes	0.513157904

```sql
create procedure vietnambasicamenity_transformed
as
begin
    update vietnam.basicamenity
    set drwaterq_new =
    case
    when drwaterq_new = 0 then 'no'
    when drwaterq_new = 1 then 'yes'
    else 'null'
    end

    update vietnam.basicamenity
    set toiletq_new =
    case
    when toiletq_new = 0 then 'no'
    when toiletq_new = 1 then 'yes'
    else 'null'
    end

    update vietnam.basicamenity
    set elecq_new =
    case
    when elecq_new = 0 then 'no'
    when elecq_new = 1 then 'yes'
    else 'null'
    end

    update vietnam.basicamenity
    set cookingq_new =
    case
    when cookingq_new = 0 then 'no'
    when cookingq_new = 1 then 'yes'
    else 'null'
    end
end;
go

execute vietnambasicamenity_transformed;
```

```
1   /****** Script for SelectTopNRows command from SSMS  ******/
2   ☐SELECT TOP (1000) [sv_new]
3         ,[cd_new]
4         ,[drwaterq_new]
5         ,[toiletq_new]
6         ,[elecq_new]
7         ,[childid]
8         ,[round]
9         ,[cookingq_new]
10        ,[hq_new]
11    FROM [Krystleworks].[vietnam].[basicamenity]
```

62 % ▼ ◀

⊞ Results | 🗐 Messages

	sv_new	cd_new	drwaterq_new	toiletq_new	elecq_new	childid	round	cookingq_new	hq_new
1	0.75	0.777777791	no	yes	yes	VN130039	3	yes	0.833333313
2	0.75	0.777777791	no	yes	yes	VN130039	4	yes	0.869047642
3	0.75	0.777777791	no	yes	yes	VN130039	5	yes	0.861111104
4	0.5	0.444444448	no	yes	yes	VN130040	1	no	0.8125
5	0.75	0.444444448	no	yes	yes	VN130040	2	yes	0.916666687
6	0.5	0.444444448	no	yes	yes	VN130040	3	no	0.875
7	0.75	0.777777791	no	yes	yes	VN130040	4	yes	0.833333313
8	0.5	0.666666687	no	yes	yes	VN130040	5	no	1
9	0.75	0.333333343	no	yes	yes	VN130041	1	yes	0.861111104
10	0.5	0.444444448	no	yes	yes	VN130041	2	no	0.875
11	0.75	0.555555582	no	yes	yes	VN130041	3	yes	0.875
12	0.75	0.666666687	no	yes	yes	VN130041	4	yes	0.875
13	0.75	0.777777791	no	yes	yes	VN130041	5	yes	0.958333313

```sql
create procedure ethiopialiteracy_transformed
as
begin
    update ethiopia.literacy
    set enrol =
    case
    when enrol = 0 then 'no'
    when enrol = 1 then 'yes'
    when enrol = 99 then 'missing'
    when enrol = 77 then 'nk'
    when enrol = 88 then 'n/a'
    else 'null'
    end

    update ethiopia.literacy
    set levlread =
    case
    when levlread = 1 then 'cant read anything'
    when levlread = 2 then 'reads letters'
    when levlread = 3 then 'reads word'
    when levlread = 4 then 'reads sentence'
    else 'null'
    end

    update ethiopia.literacy
    set levlwrit =
    case
    when levlwrit = 1 then 'no'
    when levlwrit = 2 then 'yes with difficulty or errors'
    when levlwrit = 3 then 'yes without difficulty or errors'
    else 'null'
    end
end;
go

execute ethiopialiteracy_transformed;
```

```
1    /****** Script for SelectTopNRows command from SSMS  ******/
2    ⊟SELECT TOP (1000) [hschool]
3          ,[hstudy]
4          ,[commsch]
5          ,[enrol]
6          ,[levlread]
7          ,[childid]
8          ,[round]
9          ,[levlwrit]
10         ,[hplay]
11      FROM [Krystleworks].[ethiopia].[literacy]
```

62 % ▼ ◀

⊞ Results ⯗ Messages

	hschool	hstudy	commsch	enrol	levlread	childid	round	levlwrit	hplay
1				no	null	ET010001	1	null	
2	9	1		no	null	ET010001	2	null	5
3	8	2		yes	reads word	ET010001	3	yes with difficulty or errors	4
4	8	1	30	yes	null	ET010001	4	null	4
5	8	0	40	yes	null	ET010001	5	null	4
6				no	null	ET010002	1	null	
7				no	null	ET010002	2	null	
8	9	2		yes	reads sentence	ET010002	3	yes without difficulty or errors	4
9	6	2	30	yes	null	ET010002	4	null	5
10	8	3	30	yes	null	ET010002	5	null	4

```sql
create procedure indialiteracy_transformed
as
begin
    update india.literacy
    set enrol =
    case
    when enrol = 0 then 'no'
    when enrol = 1 then 'yes'
    when enrol = 99 then 'missing'
    when enrol = 77 then 'nk'
    when enrol = 88 then 'n/a'
    else 'null'
    end

    update india.literacy
    set levlread =
    case
    when levlread = 1 then 'cant read anything'
    when levlread = 2 then 'reads letters'
    when levlread = 3 then 'reads word'
    when levlread = 4 then 'reads sentence'
    else 'null'
    end

    update india.literacy
    set levlwrit =
    case
    when levlwrit = 1 then 'no'
    when levlwrit = 2 then 'yes with difficulty or errors'
    when levlwrit = 3 then 'yes without difficulty or errors'
    else 'null'
    end
end;
go

execute indialiteracy_transformed;
```

```
1    /****** Script for SelectTopNRows command from SSMS ******/
2  ⊟SELECT TOP (1000) [hschool]
3          ,[hstudy]
4          ,[commsch]
5          ,[enrol]
6          ,[levlread]
7          ,[childid]
8          ,[round]
9          ,[levlwrit]
10         ,[hplay]
11     FROM [Krystleworks].[india].[literacy]
```

62 %

⊞ Results ▣ Messages

	hschool	hstudy	commsch	enrol	levlread	childid	round	levlwrit	hplay
1				no	null	IN010001	1	null	
2	6	3		no	null	IN010001	2	null	4
3	7	4		yes	reads sentence	IN010001	3	yes without difficulty or errors	3
4	8	3	40	yes	null	IN010001	4	null	3
5	11	1	60	yes	null	IN010001	5	null	2
6				no	null	IN010002	1	null	
7	6	1		yes	null	IN010002	2	null	8
8	8	1		yes	reads sentence	IN010002	3	yes without difficulty or errors	5
9	10	0	25	yes	null	IN010002	4	null	4
10	8	2	40	yes	null	IN010002	5	null	4

```sql
create procedure peruliteracy_transformed
as
begin
    update peru.literacy
    set enrol =
    case
    when enrol = 0 then 'no'
    when enrol = 1 then 'yes'
    when enrol = 99 then 'missing'
    when enrol = 77 then 'nk'
    when enrol = 88 then 'n/a'
    else 'null'
    end

    update peru.literacy
    set levlread =
    case
    when levlread = 1 then 'cant read anything'
    when levlread = 2 then 'reads letters'
    when levlread = 3 then 'reads word'
    when levlread = 4 then 'reads sentence'
    else 'null'
    end

    update peru.literacy
    set levlwrit =
    case
    when levlwrit = 1 then 'no'
    when levlwrit = 2 then 'yes with difficulty or errors'
    when levlwrit = 3 then 'yes without difficulty or errors'
    when levlwrit = 79 then 'Refused to answer'
    else 'null'
    end
end;
go

execute peruliteracy_transformed;
```

```
1    /****** Script for SelectTopNRows command from SSMS  ******/
2  ⊟SELECT TOP (1000) [hschool]
3         ,[hstudy]
4         ,[commsch]
5         ,[enrol]
6         ,[levlread]
7         ,[childid]
8         ,[round]
9         ,[levlwrit]
10        ,[hplay]
11    FROM [Krystleworks].[peru].[literacy]
```

62 %

▦ Results ▤ Messages

	hschool	hstudy	commsch	enrol	levlread	childid	round	levlwrit	hplay
1	6	2	45	yes	null	PE121006	5	null	4
2				no	null	PE121007	1	null	
3	6	2		no	null	PE121007	2	null	3
4	7	1		yes	reads sentence	PE121007	3	yes without difficulty or errors	4
5	7	2	10	yes	null	PE121007	4	null	2
6	8	1	10	yes	null	PE121007	5	null	2
7				no	null	PE121008	1	null	
8	5	2		no	null	PE121008	2	null	4
9	7	3		yes	reads sentence	PE121008	3	yes without difficulty or errors	3
10	6	1	10	yes	null	PE121008	4	null	4
11	0	0		no	null	PE121008	5	null	5

```sql
create procedure vietnamliteracy_transformed
as
begin
    update vietnam.literacy
    set enrol =
    case
    when enrol = 0 then 'no'
    when enrol = 1 then 'yes'
    else 'null'
    end

    update vietnam.literacy
    set levlread =
    case
    when levlread = 1 then 'cant read anything'
    when levlread = 2 then 'reads letters'
    when levlread = 3 then 'reads word'
    when levlread = 4 then 'reads sentence'
    else 'null'
    end

    update vietnam.literacy
    set levlwrit =
    case
    when levlwrit = 1 then 'no'
    when levlwrit = 2 then 'yes with difficulty or errors'
    when levlwrit = 3 then 'yes without difficulty or errors'
    else 'null'
    end
end;
go

execute vietnamliteracy_transformed;
```

```
1    /****** Script for SelectTopNRows command from SSMS  ******/
2  □SELECT TOP (1000) [hschool]
3        ,[hstudy]
4        ,[commsch]
5        ,[enrol]
6        ,[levlread]
7        ,[childid]
8        ,[round]
9        ,[levlwrit]
10       ,[hplay]
11   FROM [Krystleworks].[vietnam].[literacy]
```

62 %

⊞ Results ▤ Messages

	hschool	hstudy	commsch	enrol	levlread	childid	round	levlwrit	hplay
1	4	5		yes	reads sentence	VN130039	3	yes without difficulty or errors	4
2	7	4	60	yes	null	VN130039	4	null	4
3	9	3	20	yes	null	VN130039	5	null	3
4				no	null	VN130040	1	null	
5	7	0		yes	null	VN130040	2	null	7
6	5	4		yes	reads sentence	VN130040	3	yes without difficulty or errors	4
7	8	4	30	yes	null	VN130040	4	null	3
8	7.5	4	15	yes	null	VN130040	5	null	2.099999905
9				no	null	VN130041	1	null	
10	9	0		yes	null	VN130041	2	null	3
11	4	4		yes	reads sentence	VN130041	3	yes without difficulty or errors	4
12	5	4	30	yes	null	VN130041	4	null	3

RELATIONSHIPS BETWEEN TABLES

To create a relationship between the tables, I chose to create 4 different relationships between the 3 tables in each country, a composite key (primary key) was created in each basic amenity table for each country which relates to other tables in the most ways and is linked with a foreign key created on the other tables with reference to the table with the primary key.
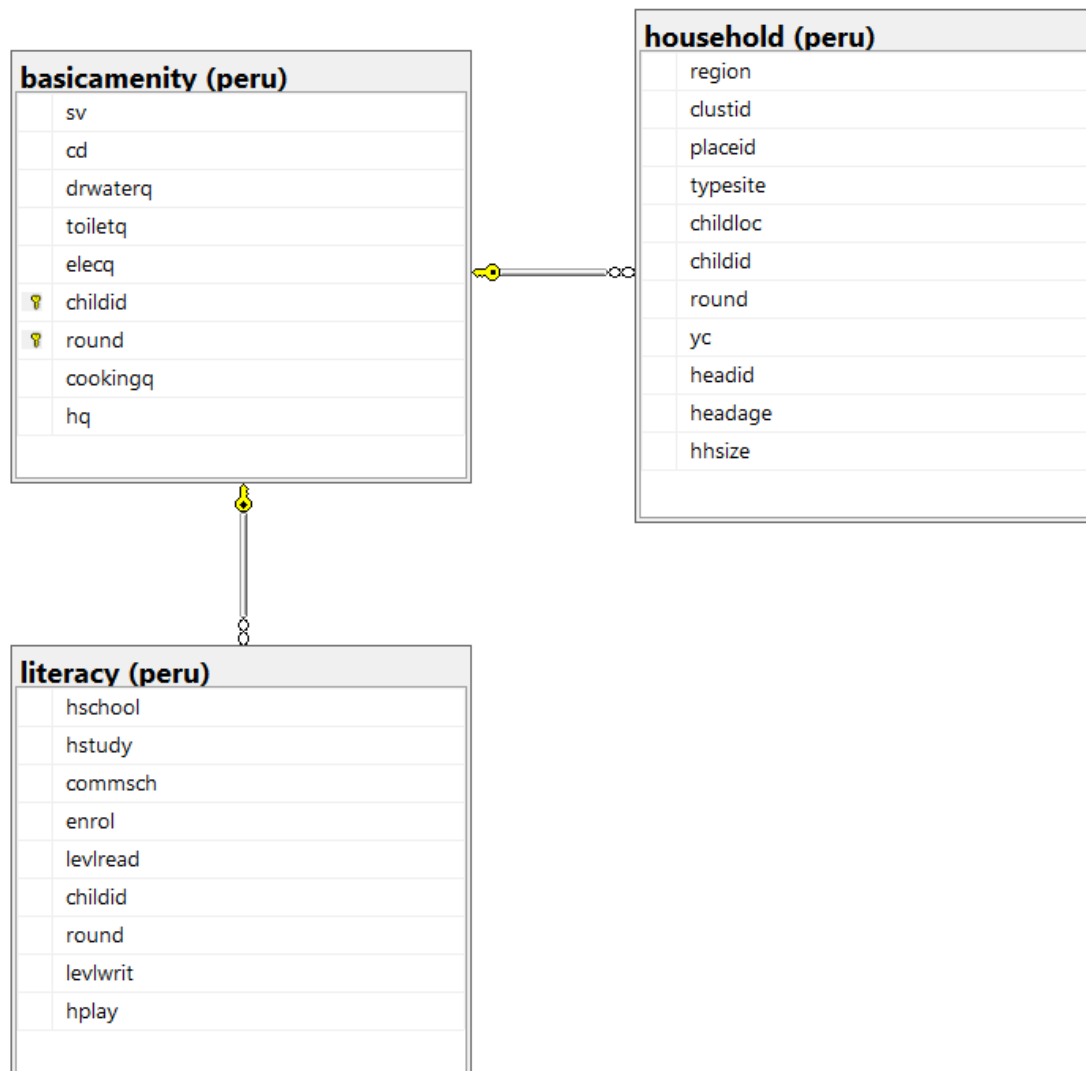
```
606   --ALTERING THE COLUMNS FOR MY PRIMARY KEY (childid, round) to not nullable(Ethiopia)
607   alter table ethiopia.basicamenity
608   alter column childid varchar(50) not null;
609
610   alter table ethiopia.basicamenity
611   alter column round varchar(50) not null;
612
613   --creating composite key by altering keys
614   alter table ethiopia.basicamenity
615   add constraint chiround primary key (childid,round);
616
617   --ALTERING THE COLUMNS FOR MY PRIMARY KEY (childid, round) to not nullable(Inida)
618   alter table india.basicamenity
619   alter column childid varchar(50) not null;
620
621   alter table india.basicamenity
622   alter column round varchar(50) not null;
623
624   --creating composite key by altering keys
625   alter table india.basicamenity
626   add constraint chiround_india primary key (childid,round);
627
628   --ALTERING THE COLUMNS FOR MY PRIMARY KEY (childid, round) to not nullable(Peru)
629   alter table peru.basicamenity
630   alter column childid varchar(50) not null;
631
632   alter table peru.basicamenity
633   alter column round varchar(50) not null;
634
635   --creating composite key by altering keys
636   alter table peru.basicamenity
637   add constraint chiround_peru primary key (childid,round);
638
639   --ALTERING THE COLUMNS FOR MY PRIMARY KEY (childid, round) to not nullable(Vietnam)
640   alter table vietnam.basicamenity
641   alter column childid varchar(50) not null;
642
643   alter table vietnam.basicamenity
644   alter column round varchar(50) not null;
645
646   --creating composite key by altering keys
647   alter table vietnam.basicamenity
648   add constraint chiround_vietnam primary key (childid,round);
```
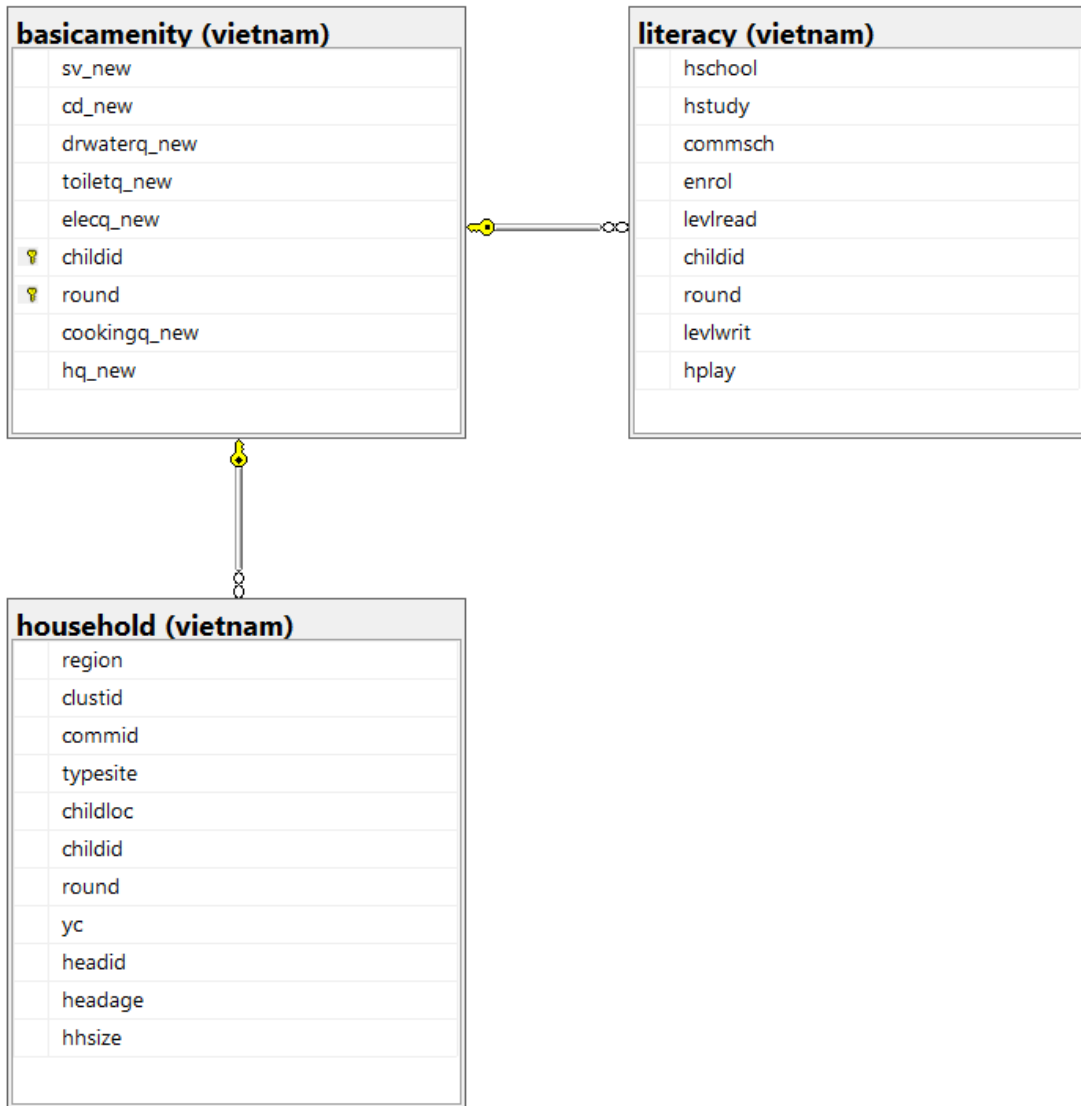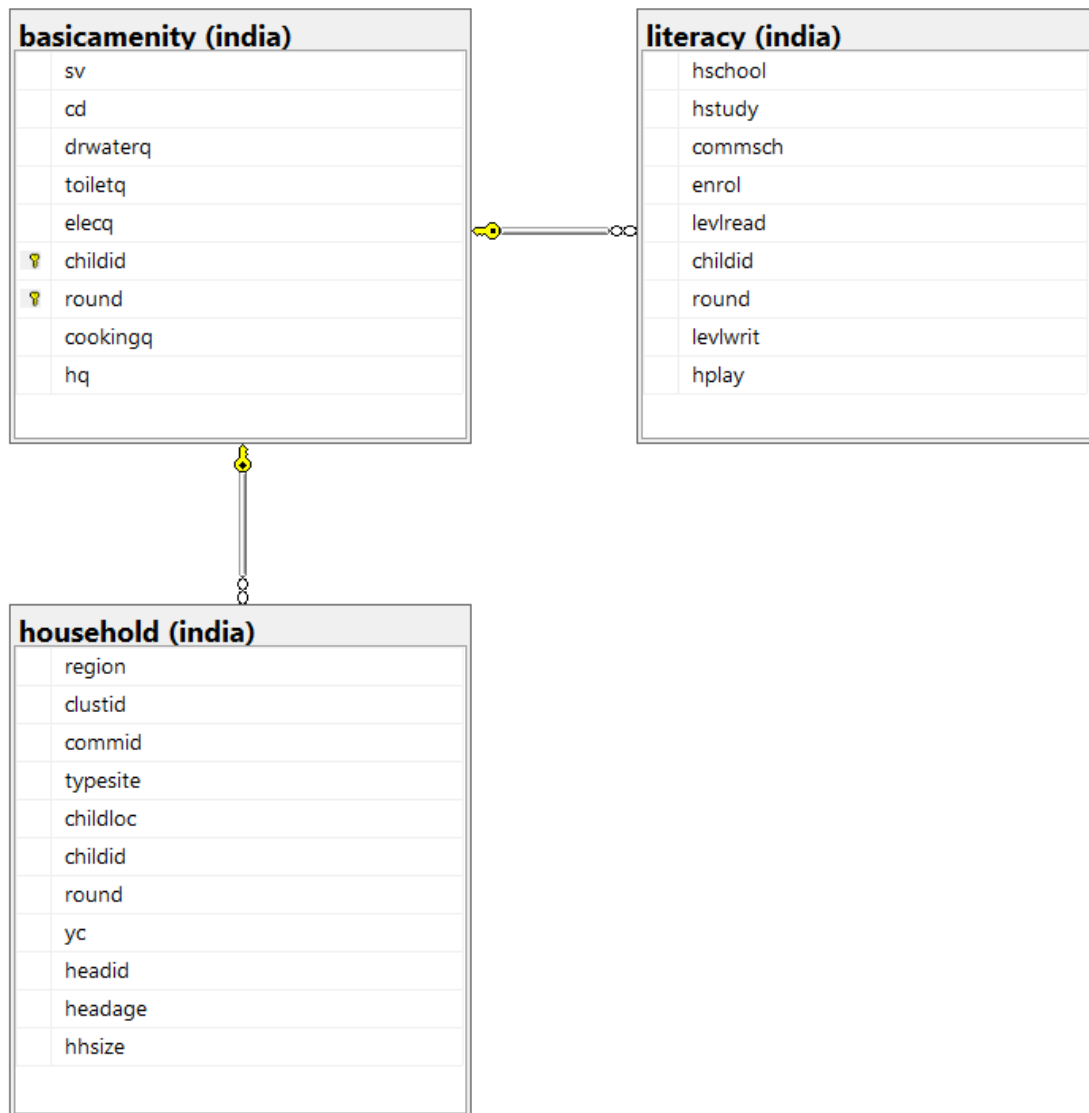
```sql
--adding foriegn key to table(ethiopia.household)
alter table ethiopia.household
add constraint childroundhh_fk foreign key (childid, round)
references ethiopia.basicamenity (childid, round);

--adding foriegn key to table(ethiopia.literacy)
alter table ethiopia.literacy
add constraint childroundlit_fk foreign key (childid, round)
references ethiopia.basicamenity (childid, round);

--adding foriegn key to table(india.household)
alter table india.household
add constraint indiachildroundhh_fk foreign key (childid, round)
references india.basicamenity (childid, round);

--adding foriegn key to table(india.literacy)
alter table india.literacy
add constraint indiachildroundlit_fk foreign key (childid, round)
references india.basicamenity (childid, round);

--adding foriegn key to table(peru.household)
alter table peru.household
add constraint peruchildroundhh_fk foreign key (childid, round)
references peru.basicamenity (childid, round);

--adding foriegn key to table(peru.literacy)
alter table peru.literacy
add constraint peruchildroundlit_fk foreign key (childid, round)
references peru.basicamenity (childid, round);

--adding foriegn key to table(vietnam.household)
alter table vietnam.household
add constraint vietnamchildroundhh_fk foreign key (childid, round)
references vietnam.basicamenity (childid, round);

--adding foriegn key to table(vietnam.literacy)
alter table vietnam.literacy
add constraint vietnamchildroundlit_fk foreign key (childid, round)
references vietnam.basicamenity (childid, round);
```

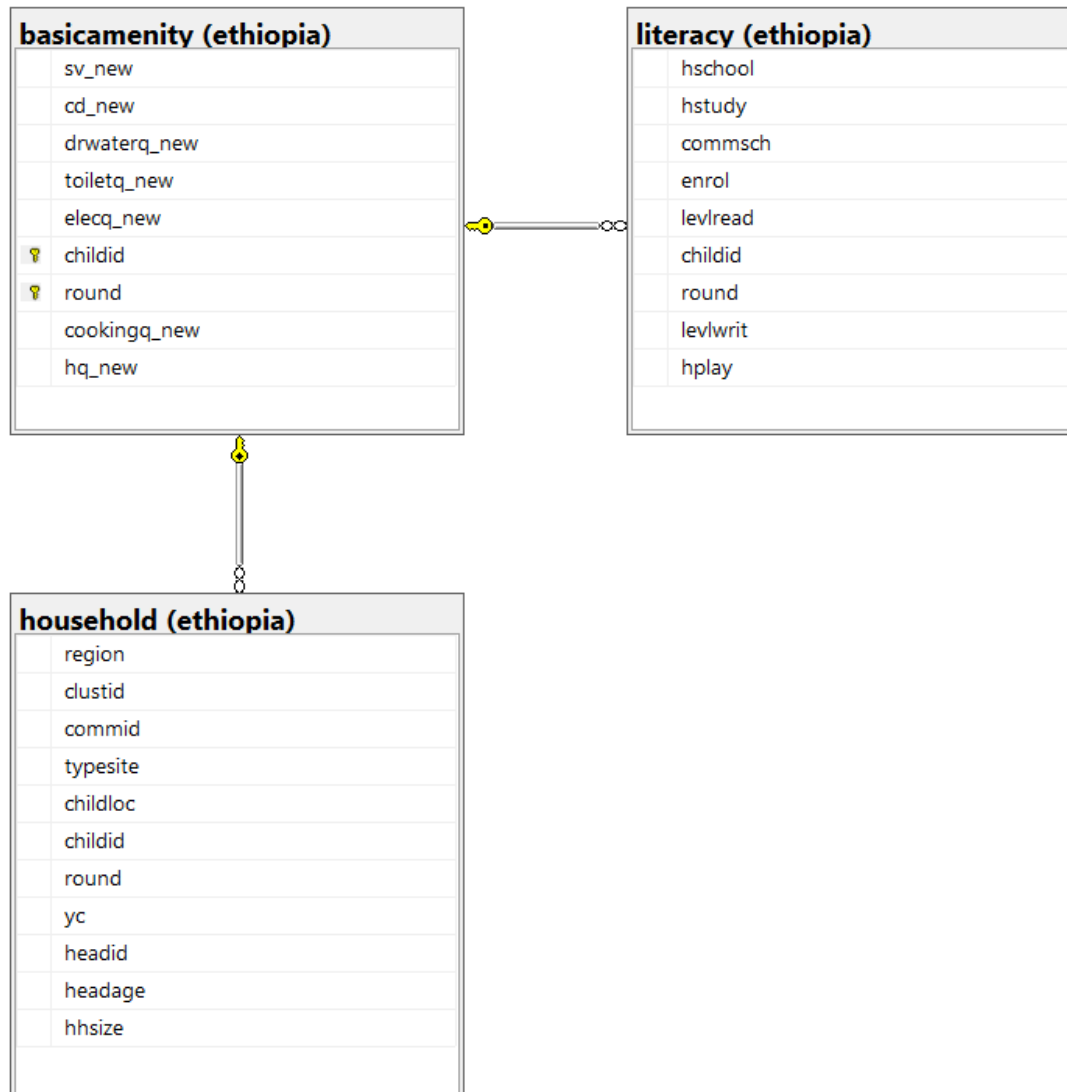Below are the database diagrams for selected tables in the database. Its shows a visual understanding of the database structure.

household (peru)

region
clustid
placeid
typesite
childloc
childid
round
yc
headid
headage
hhsize

basicamenity (peru)

sv
cd
drwaterq
toiletq
elecq
🔑 childid
🔑 round
cookingq
hq

literacy (peru)

hschool
hstudy
commsch
enrol
levlread
childid
round
levlwrit
hplay

basicamenity (vietnam)

	sv_new
	cd_new
	drwaterq_new
	toiletq_new
	elecq_new
🔑	childid
🔑	round
	cookingq_new
	hq_new

literacy (vietnam)

hschool
hstudy
commsch
enrol
levlread
childid
round
levlwrit
hplay

household (vietnam)

region
clustid
commid
typesite
childloc
childid
round
yc
headid
headage
hhsize

basicamenity (india)

	sv
	cd
	drwaterq
	toiletq
	elecq
🔑	childid
🔑	round
	cookingq
	hq

literacy (india)

hschool
hstudy
commsch
enrol
levlread
childid
round
levlwrit
hplay

household (india)

region
clustid
commid
typesite
childloc
childid
round
yc
headid
headage
hhsize

basicamenity (ethiopia)

	sv_new
	cd_new
	drwaterq_new
	toiletq_new
	elecq_new
🔑	childid
🔑	round
	cookingq_new
	hq_new

literacy (ethiopia)

hschool
hstudy
commsch
enrol
levlread
childid
round
levlwrit
hplay

household (ethiopia)

region
clustid
commid
typesite
childloc
childid
round
yc
headid
headage
hhsize

RATIONALE OF THE DESIGN

I moved to make intensive and focused research on the countries individually and through the report of my analysis, I'll further elaborate on elements that informed the decisions of database development.

DESIGN CONSIDERATION

My thoughts for the analysis are to have a comparative analysis of the child's access to basic amenities to performance in school, household standard of living amongst others between the 4 countries.

NORMALISATION

Each table has common columns such as (child id and round) which makes them distinct, and this was used to link the tables in the database diagram.

CONSTRAINT

The database has constraints on the composite keys and a not null which were created on the basic amenity tables across the four countries as distinct identifiers.

VALIDATION

The unique identifiers, primary keys and update functions in the stored procedures ascertain the data in the table in true across all rows in the tables.

TRAENSPARENCY AND CONCURRENCY CONTROL

In this analysis the database was used for retrieval of data within the database.

REPORT 1 (ENROLLMENT RATE OF CHILD BASED ON THE AREA OF RESIDENCE)

This analysis shows the rate at with children are being enrolled in school according to the area they reside, these areas have been grouped to urban and rural.

I created a procedure which shows each country with an inner join of all literacy and household tables.

The enrolment rate of each country is now generated showing the count of child enrolment in each area.

```
694    with t_lit as (select country = case when childid like 'et%' then 'Ethiopia'
695    when childid like 'in%' then 'India'
696    when childid like 'pe%' then 'Peru'
697    when childid like 'vn%' then 'Vietnam'
698    end,
699     enrol, childid
700    from
701    (select * from ethiopia.literacy
702    union
703    select * from india.literacy
704    union
705    select * from peru.literacy
706    union
707    select * from vietnam.literacy) as l
708    where enrol = 'Yes')
709
710    select country, count(enrol) as count_enrol, typesite
711    from t_lit
712    inner join
713    (select * from ethiopia.household
714    union
715    select * from india.household
716    union
717    select * from peru.household
718    union
719    select * from vietnam.household) as h
720    on t_lit.childid = h.childid
721    where typesite != 'null' and typesite != 'not known' and country = @country
722    group by country, typesite
723
724    end;
```

```
725    exec enrol_rate 'Ethiopia';
```

Results | **Messages**

	country	count_enrol	typesite
1	Ethiopia	16065	rural
2	Ethiopia	594	urban

This shows a high rate of child enrolment in Rural Ethiopia as to a much lower rate at the urban Ethiopia.

```
727   exec enrol_rate 'india';
```

	country	count_enrol	typesite
1	India	32305	rural
2	India	12209	urban

This shows a high rate of child enrolment in Rural India as to a much lower rate at the urban India.

```
729   exec enrol_rate 'peru';
```

	country	count_enrol	typesite
1	Peru	10304	rural
2	Peru	29978	urban

This shows a lower rate of child enrolment in Rural Peru as to a much higher rate at the urban Peru.

```
730
731   exec enrol_rate 'vietnam';
```

	country	count_enrol	typesite
1	Vietnam	37576	rural
2	Vietnam	10973	urban

This shows a high rate of child enrolment in Rural Vietnam as to a much higher rate at the urban Vietnam.

REPORT 2 (COMPARATIVE ANALYSIS OF ELECTRICITY AMONG THE 4 COUNTRIES)

In India, the screenshot below shows according to the data that those in Rural India seem to have less electricity supply than those in urban areas.

```sql
882   --REPORT 2(Comparative analysis of how children in urban and rural residences can have access to electricity across the 4 countries when access to electricity is NO)
883   --IN ETHIOPIA
884
885   create view ETHIOPIA.ElectricityAnalysisNO
886   as
887   select typesite as residence_type, count(elecq_new) as electricity_access
888    from
889    (select * from ethiopia.household
890    union
891    select * from india.household
892    union
893    select * from peru.household
894    union
895    select * from vietnam.household) as hh
896    inner join
897    (select * from ethiopia.basicamenity
898     union
899    select * from india.basicamenity
900    union
901    select * from peru.basicamenity
902    union
903    select * from vietnam.basicamenity) as ba
904    on hh.childid = ba.childid
905    where elecq_new = 'NO' and hh.childid like 'et%' and typesite != 'null' and typesite != 'not known'
906    group by typesite;
907
908    select * from ETHIOPIA.ElectricityAnalysisNO;
909
910
```

74 %

Results | Messages

	residence_type	electricity_access
1	urban	3159
2	rural	3085

In Ethiopia, the screenshot below shows according to the data that those in Rural India seem to have less electricity supply than those in urban areas.

```sql
853   --REPORT 2(Comparative analysis of how children in urban and rural residences can have access to electricity across the 4 countries when access to electricity is NO)
854
855   --IN INDIA
856
857   create view India.ElectricityAnalysisNO
858   as
859   select typesite as residence_type, count(elecq_new) as electricity_access
860    from
861    (select * from ethiopia.household
862    union
863    select * from india.household
864    union
865    select * from peru.household
866    union
867    select * from vietnam.household) as hh
868    inner join
869    (select * from ethiopia.basicamenity
870     union
871    select * from india.basicamenity
872    union
873    select * from peru.basicamenity
874    union
875    select * from vietnam.basicamenity) as ba
876    on hh.childid = ba.childid
877    where elecq_new = 'no' and hh.childid like 'in%' and typesite != 'null' and typesite != 'not known'
878    group by typesite;
879
880    select * from india.ElectricityAnalysisNO;
```

74 %

Results | Messages

	residence_type	electricity_access
1	rural	5258
2	urban	894

In Peru, the screenshot below shows according to the data that those in Rural Peru seem to have less electricity supply than those in urban areas.

```sql
911  --REPORT 2(Comparative analysis of how children in urban and rural residences can have access to electricity across the 4 countries when access to electricity is NO)
912  --IN PERU
913
914  create view PERU.ElectricityAnalysisNO
915  as
916  select typesite as residence_type, count(elecq_new) as electricity_access
917    from
918    (select * from ethiopia.household
919    union
920    select * from india.household
921    union
922    select * from peru.household
923    union
924    select * from vietnam.household) as hh
925    inner join
926    (select * from ethiopia.basicamenity
927      union
928    select * from india.basicamenity
929    union
930    select * from peru.basicamenity
931    union
932    select * from vietnam.basicamenity) as ba
933    on hh.childid = ba.childid
934    where elecq_new = 'NO' and hh.childid like 'pe%' and typesite != 'null' and typesite != 'not known'
935    group by typesite;
936
937  select * from PERU.ElectricityAnalysisNO;
```

74 %

Results | Messages

	residence_type	electricity_access
1	urban	5174
2	rural	6697

In Vietnam, the screenshot below shows according to the data that those in Rural Vietnam seem to have less electricity supply than those in urban areas.

```sql
940  --REPORT 2(Comparative analysis of how children in urban and rural residences can have access to electricity across the 4 countries when access to electricity is NO)
941  --IN VIETNAM
942
943  create view VIETNAM.ElectricityAnalysisNO
944  as
945  select typesite as residence_type, count(elecq_new) as electricity_access
946    from
947    (select * from ethiopia.household
948    union
949    select * from india.household
950    union
951    select * from peru.household
952    union
953    select * from vietnam.household) as hh
954    inner join
955    (select * from ethiopia.basicamenity
956      union
957    select * from india.basicamenity
958    union
959    select * from peru.basicamenity
960    union
961    select * from vietnam.basicamenity) as ba
962    on hh.childid = ba.childid
963    where elecq_new = 'NO' and hh.childid like 'vn%' and typesite != 'null' and typesite != 'not known'
964    group by typesite;
965
966  select * from VIETNAM.ElectricityAnalysisNO;
967
```

74 %

Results | Messages

	residence_type	electricity_access
1	urban	669
2	rural	4344

REPORT 3 (COMPARATIVE ANALYSIS OF HOUSEHOLDS IN URBAN AND RURAL RESIDENCES WITH THEIR ACCESS TO GOOD SANITATION)

This view was created with the household and Basic amenity tables across all the countries were replied no on access to good sanitation.

The screenshot below shows that the rural Ethiopia has worse cases of poor sanitation than urban Ethiopia.

```
968    --REPORT 3(Comparative analysis of households in urban and rural residences and their access to sanitation across the 4 countries when access to sanitation is NO(ETHIOPIA))
969
970
971
972    create view Ethiopia.SanitationAnalysisNO
973    as
974    select typesite as residence_area, count(toiletq_new) as NOsanitation_access
975      from
976      (select * from ethiopia.household
977      union
978      select * from india.household
979      union
980      select * from peru.household
981      union
982      select * from vietnam.household) as hh
983      inner join
984      (select * from ethiopia.basicamenity
985       union
986      select * from india.basicamenity
987      union
988      select * from peru.basicamenity
989      union
990      select * from vietnam.basicamenity) as ba
991      on hh.childid = ba.childid
992      where toiletq_new = 'NO' and hh.childid like 'et%' and typesite != 'null' and typesite != 'not known'
993      group by typesite;
994
995    select * from Ethiopia.SanitationAnalysisNO;
996
```

74 %

Results | Messages

	residence_area	NOsanitation_access
1	urban	3098
2	rural	6455

The screenshot below shows that the rural India by far has worse cases of poor sanitation than urban India.

```
997    --REPORT 3(Comparative analysis of households in urban and rural residences and their access to sanitation across the 4 countries when access to sanitation is NO(INDIA))
998
999
1000   create view INDIA.SanitationAnalysisNO
1001   as
1002   select typesite as residence_area, count(toiletq_new) as NOsanitation_access
1003     from
1004     (select * from ethiopia.household
1005     union
1006     select * from india.household
1007     union
1008     select * from peru.household
1009     union
1010     select * from vietnam.household) as hh
1011     inner join
1012     (select * from ethiopia.basicamenity
1013      union
1014     select * from india.basicamenity
1015     union
1016     select * from peru.basicamenity
1017     union
1018     select * from vietnam.basicamenity) as ba
1019     on hh.childid = ba.childid
1020     where toiletq_new = 'NO' and hh.childid like 'IN%' and typesite != 'null' and typesite != 'not known'
1021     group by typesite;
1022
1023   select * from INDIA.SanitationAnalysisNO;
1024
```

74 %

Results | Messages

	residence_area	NOsanitation_access
1	rural	42318
2	urban	2807

The screenshot below shows that the rural Peru has worse cases of poor sanitation than urban Peru.

```
1026    --REPORT 3(Comparative analysis of households in urban and rural residences and their access to sanitation across the 4 countries when access to sanitation is NO(PERU))
1027
1028
1029  create view PERU.SanitationAnalysisNO
1030  as
1031  select typesite as residence_area, count(toiletq_new) as NOsanitation_access
1032    from
1033    (select * from ethiopia.household
1034    union
1035    select * from india.household
1036    union
1037    select * from peru.household
1038    union
1039    select * from vietnam.household) as hh
1040    inner join
1041    (select * from ethiopia.basicamenity
1042     union
1043    select * from india.basicamenity
1044    union
1045    select * from peru.basicamenity
1046    union
1047    select * from vietnam.basicamenity) as ba
1048    on hh.childid = ba.childid
1049    where toiletq_new = 'NO' and hh.childid like 'PE%' and typesite != 'null' and typesite != 'not known'
1050    group by typesite;
1051
1052  select * from PERU.SanitationAnalysisNO;
```

74 %

Results | Messages

	residence_area	NOsanitation_access
1	urban	5093
2	rural	3830

The screenshot below shows that the rural Vietnam by far has worse cases of poor sanitation than urban Vietnam.

```
1055    --REPORT 3(Comparative analysis of households in urban and rural residences and their access to sanitation across the 4 countries when access to sanitation is NO(VIETNAM))
1056
1057  create view VIETNAM.SanitationAnalysisNO
1058  as
1059  select typesite as residence_area, count(toiletq_new) as NOsanitation_access
1060    from
1061    (select * from ethiopia.household
1062    union
1063    select * from india.household
1064    union
1065    select * from peru.household
1066    union
1067    select * from vietnam.household) as hh
1068    inner join
1069    (select * from ethiopia.basicamenity
1070     union
1071    select * from india.basicamenity
1072    union
1073    select * from peru.basicamenity
1074    union
1075    select * from vietnam.basicamenity) as ba
1076    on hh.childid = ba.childid
1077    where toiletq_new = 'NO' and hh.childid like 'VN%' and typesite != 'null' and typesite != 'not known'
1078    group by typesite;
1079
1080  select * from VIETNAM.SanitationAnalysisNO;
```

74 %

Results | Messages

	residence_area	NOsanitation_access
1	urban	1666
2	rural	23968

REPORT 4 (EFFECT AREA OF RESIDENCE AFFECTS THE ACCESS TO SAFE DRINKING WATER)

The procedure selects all countries, an inner join of the union of all basic amenity and household table, where access to clean water is NO.

```
1082    --REPORT 4 (Effects of Area of residence on their lack of access to safe drinking water across the 4 countries)
1083
1084  create procedure NOSafe_Water @country nvarchar(50)
1085  as
1086  begin
1087
1088      with Nosafewater as (select country = case when childid like 'et%' then 'Ethiopia'
1089      when childid like 'in%' then 'India'
1090      when childid like 'pe%' then 'Peru'
1091      when childid like 'vn%' then 'Vietnam'
1092      end,
1093       drwaterq_new, childid
1094      from
1095      (select * from ethiopia.basicamenity
1096      union
1097      select * from india.basicamenity
1098      union
1099      select * from peru.basicamenity
1100      union
1101      select * from vietnam.basicamenity) as 1
1102      where drwaterq_new = 'no')
1103
1104      select country, count(drwaterq_new) as Nosafewater, typesite
1105      from Nosafewater
1106      inner join
1107      (select * from ethiopia.household
1108      union
1109      select * from india.household
1110      union
1111      select * from peru.household
1112      union
1113      select * from vietnam.household) as h
1114      on Nosafewater.childid = h.childid
1115      where typesite != 'null' and typesite != 'not known' and country = @country
1116      group by country, typesite
1117
1118  end;
1119  exec NOSafe_Water 'Ethiopia';
1120
```

74 %

⊞ Results | 📄 Messages

	country	Nosafewater	typesite
1	Ethiopia	4054	rural
2	Ethiopia	2966	urban

For Ethiopia below, the rural part has more number of children with no access to good water than those the urban area.

For India, the rural part by far have more number of children with no access to good water than those the urban area.

```
1120
1121  exec NOSafe_Water 'india';
1122
1123  exec enrol_rate 'peru';
1124
1125  exec enrol_rate 'vietnam'
1126
1127
```

74 %

Results | Messages

	country	Nosafewater	typesite
1	India	4061	rural
2	India	787	urban

For Peru, the rural area has a slightly higher number of cases with no adequate drinking water than the urban.

```
1122
1123  exec NOSafe_Water 'peru';
1124
1125  exec enrol_rate 'vietnam'
1126
1127
```

74 %

Results | Messages

	country	Nosafewater	typesite
1	Peru	9028	rural
2	Peru	10760	urban

For Peru, the number of cases with no access to drinking water is over 800% more than that of the urban area.

```
1124
1125  exec NOSafe_Water 'vietnam';
1126
1127
```

74 %

Results **Messages**

	country	Nosafewater	typesite
1	Vietnam	51879	rural
2	Vietnam	5865	urban

REPORT 5 (CHILDREN WITH NO ACCESS TO ADEQUATE COOKING FUEL)

This analysis captures children with no access to adequate cooking fuel according to their type of residence.

Below shows that over 900% more of the kids in Rural India don't have access to cooking fuels when compared to Urban kids.

```
1130  create view INDIA.NOaccess_to_cooking_fuel
1131  as
1132  select typesite as INDIA, count(cookingq_new) as noaccess_to_cooking_fuel
1133    from
1134    (select * from ethiopia.household
1135    union
1136    select * from india.household
1137    union
1138    select * from peru.household
1139    union
1140    select * from vietnam.household) as H
1141    inner join
1142    (select * from ethiopia.basicamenity
1143     union
1144    select * from india.basicamenity
1145    union
1146    select * from peru.basicamenity
1147    union
1148    select * from vietnam.basicamenity) as B
1149    on H.childid = B.childid
1150    where cookingq_new = 'NO' and H.childid like 'IN%' and typesite != 'null' and typesite != 'not known'
1151    group by typesite;
1152
1153  select * from INDIA.NOaccess_to_cooking_fuel;
1154
```

106 %

Results **Messages**

	INDIA	noaccess_to_cooking_fuel
1	rural	40287
2	urban	4368

Below shows that more of the kids in Rural Ethiopia don't have access to cooking fuels when compared to Urban kids.

```sql
1155   create view Ethiopia.NOaccess_to_cooking_fuel
1156   as
1157   select typesite as Ethiopia, count(cookingq_new) as noaccess_to_cooking_fuel
1158     from
1159     (select * from ethiopia.household
1160     union
1161     select * from india.household
1162     union
1163     select * from peru.household
1164     union
1165     select * from vietnam.household) as H
1166     inner join
1167     (select * from ethiopia.basicamenity
1168      union
1169     select * from india.basicamenity
1170     union
1171     select * from peru.basicamenity
1172     union
1173     select * from vietnam.basicamenity) as B
1174     on H.childid = B.childid
1175     where cookingq_new = 'NO' and H.childid like 'et%' and typesite != 'null' and typesite != 'not known'
1176     group by typesite;
1177
1178    select * from Ethiopia.NOaccess_to_cooking_fuel;
```

106 %

Results | Messages

	Ethiopia	noaccess_to_cooking_fuel
1	urban	3807
2	rural	19919

Below shows that the cases in Urban and Rural Peru is almost similar with the latter having slightly higher cases than the former.

```sql
1180   create view Peru.NOaccess_to_cooking_fuel
1181   as
1182   select typesite as Peru, count(cookingq_new) as noaccess_to_cooking_fuel
1183     from
1184     (select * from ethiopia.household
1185     union
1186     select * from india.household
1187     union
1188     select * from peru.household
1189     union
1190     select * from vietnam.household) as H
1191     inner join
1192     (select * from ethiopia.basicamenity
1193      union
1194     select * from india.basicamenity
1195     union
1196     select * from peru.basicamenity
1197     union
1198     select * from vietnam.basicamenity) as B
1199     on H.childid = B.childid
1200     where cookingq_new = 'NO' and H.childid like 'pe%' and typesite != 'null' and typesite != 'not known'
1201     group by typesite;
1202
1203    select * from Peru.NOaccess_to_cooking_fuel;
```

106 %

Results | Messages

	Peru	noaccess_to_cooking_fuel
1	urban	13191
2	rural	14881