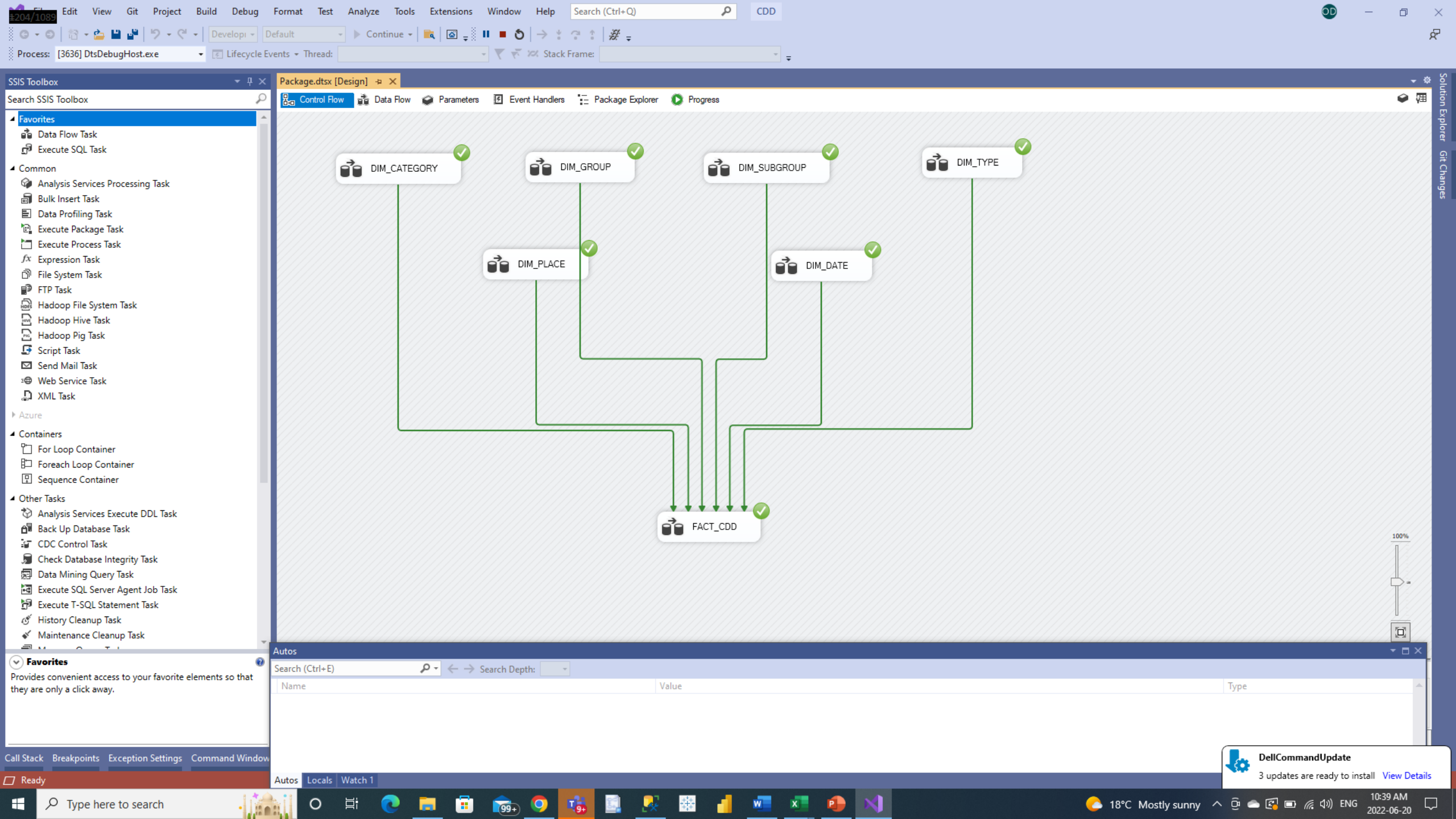
Statistical Analysis of Data

(DATA-415-A)

Olumide Durojaiye


File Edit View Git Project Build Debug Format Test Analyze Tools Extensions Window Help
Search (Ctrl+Q)
CDD
Process: [3636] DtsDebugHost.exe
Lifecycle Events
Thread:
Stack Frame:
SSIS Toolbox
Search SSIS Toolbox
Favorites
Data Flow Task
Execute SQL Task
Common
Analysis Services Processing Task
Bulk Insert Task
Data Profiling Task
Execute Package Task
Execute Process Task
Expression Task
File System Task
FTP Task
Hadoop File System Task
Hadoop Hive Task
Hadoop Pig Task
Script Task
Send Mail Task
Web Service Task
XML Task
Azure
Containers
For Loop Container
Foreach Loop Container
Sequence Container
Other Tasks
Analysis Services Execute DDL Task
Back Up Database Task
CDC Control Task
Check Database Integrity Task
Data Mining Query Task
Execute SQL Server Agent Job Task
Execute T-SQL Statement Task
History Cleanup Task
Maintenance Cleanup Task
Favorites
Provides convenient access to your favorite elements so that they are only a click away.
Call Stack
Breakpoints
Exception Settings
Command Window
Ready
Package.dtsx [Design]
Control Flow
Data Flow
Parameters
Event Handlers
Package Explorer
Progress
DIM_CATEGORY
DIM_GROUP
DIM_SUBGROUP
DIM_TYPE
DIM_PLACE
DIM_DATE
FACT_CDD
100%
Autos
Search (Ctrl+E)
Search Depth:
Name
Value
Type
Autos
Locals
Watch 1
Solution Explorer
Git Changes
DellCommandUpdate
3 updates are ready to install
View Details
Type here to search
18°C Mostly sunny
ENG
10:39 AM
2022-06-20

SQLQuery7.sql - DESKTOP-NSU0G7U.CDD (DESKTOP-NSU0G7U\Dell (54)) - Microsoft SQL Server Management Studio

File Edit View Query Project Tools Window Help

Quick Launch (Ctrl+Q)

New Query | Execute | CDD

SSIS Toolbox

Search SSIS Toolbox

- Favorites
  - Data Flow Task
  - Execute SQL Task
- Common
  - Analysis Services Processin
  - Bulk Insert Task
  - Data Profiling Task
  - Execute Package Task
  - Execute Process Task
  - Expression Task
  - File System Task
  - FTP Task
  - Hadoop File System Task
  - Hadoop Hive Task
  - Hadoop Pig Task
  - Script Task
  - Send Mail Task
  - Web Service Task
  - XML Task
- Azure
- Containers
  - For Loop Container
  - Foreach Loop Container
  - Sequence Container
- Other Tasks
  - Analysis Services Execute D
  - Back Up Database Task
  - CDC Control Task
  - Check Database Integrity T
  - Data Mining Query Task
  - Execute SQL Server Agent
  - Execute T-SQL Statement T
  - History Cleanup Task
  - Maintenance Cleanup Task

Favorites

Provides convenient access to you they are only a click away.

Object Explorer

Connect

- DESKTOP-NSU0G7U (SQL Server 15.0.2000.5 - DESK
  - Databases
    - System Databases
    - Database Snapshots
    - AdventureWorks2019
    - AdventureWorksDW2019
    - Bike Practice
    - CDD
      - Database Diagrams
      - Tables
        - System Tables
        - FileTables
        - External Tables
        - Graph Tables
        - dbo.DIM_CATEGORY
        - dbo.DIM_DATE
        - dbo.DIM_GROUP
        - dbo.DIM_PLACE
        - dbo.DIM_SUBGROUP
        - dbo.DIM_TYPE
        - dbo.Fact_CDD
        - dbo.Final Assignment Canadian Disa
          - Columns
            - CATEGORY (varchar(200), nul
            - GROUP (varchar(200), null)
            - SUBGROUP (varchar(200), nu
            - TYPE (varchar(200), null)
            - PLACE (varchar(200), null)
            - DATE (datetime, null)
            - FATALITIES (numeric(18,0), n
            - EVACUATED (numeric(18,0),
            - COST (numeric(18,0), null)
          - Keys
          - Constraints
          - Triggers
          - Indexes
          - Statistics
      - Views
      - External Resources
      - Synonyms

SQLQuery7.sql - DE...NSU0G7U\Dell (54)) | SQLQuery6.sql - DE...NSU0G7U\Dell (52)) | SQLQuery2.sql - not connected* | SQLQuery5.sql - not connected*

```
/****** Script for SelectTopNRows command from SSMS  ******/
SELECT TOP (1000) [PK_DC_CATEGORY]
      ,[PK_DG_GROUP]
      ,[PK_DS_SUBGROUP]
      ,[PK_DT_TYPE]
      ,[PK_DP_PLACE]
      ,[PK_DD_DATE]
      ,[FATALITIES]
      ,[EVACUATED]
      ,[COST]
  FROM [CDD].[dbo].[Fact_CDD]
```

100 %

Results | Messages

	PK_DC_CATEGORY	PK_DG_GROUP	PK_DS_SUBGROUP	PK_DT_TYPE	PK_DP_PLACE	PK_DD_DATE	FATALITIES	EVACUATED
1	PK_DC_Incident	PK_DG_Technology	PK_DS_Fire	PK_DT_Non-Residential	PK_DP_Ottawa ON and Hull QC	PK_DD_DATE	0	15000
2	PK_DC_Incident	PK_DG_Technology	PK_DS_Explosion	PK_DT_Non-Residential	PK_DP_Grand Forks BC	PK_DD_DATE	0	0
3	PK_DC_Incident	PK_DG_Technology	PK_DS_Infrastructure failure	PK_DT_Manufacturing / Industry	PK_DP_Wellington BC	PK_DD_DATE	0	0
4	PK_DC_Incident	PK_DG_Technology	PK_DS_Explosion	PK_DT_Non-Residential	PK_DP_Cranberry BC	PK_DD_DATE	0	0
5	PK_DC_Disaster	PK_DG_Natural	PK_DS_Meteorological - Hydrological	PK_DT_Flood	PK_DP_Saint John River Basin NB	PK_DD_DATE	0	0
6	PK_DC_Incident	PK_DG_Technology	PK_DS_Explosion	PK_DT_Non-Residential	PK_DP_Fernie BC	PK_DD_DATE	0	0
7	PK_DC_Incident	PK_DG_Technology	PK_DS_Explosion	PK_DT_Non-Residential	PK_DP_Grand Forks BC	PK_DD_DATE	0	0
8	PK_DC_Disaster	PK_DG_Natural	PK_DS_Geological	PK_DT_Landslide	PK_DP_Frank AB	PK_DD_DATE	23	0
9	PK_DC_Incident	PK_DG_Technology	PK_DS_Explosion	PK_DT_Non-Residential	PK_DP_Carbonado BC	PK_DD_DATE	0	0
10	PK_DC_Disaster	PK_DG_Natural	PK_DS_Meteorological - Hydrological	PK_DT_Storms and Severe Thunderstorms	PK_DP_Edmonton AB	PK_DD_DATE	0	0
11	PK_DC_Disaster	PK_DG_Natural	PK_DS_Meteorological - Hydrological	PK_DT_Storms and Severe Thunderstorms	PK_DP_Calgary AB	PK_DD_DATE	0	0
12	PK_DC_Disaster	PK_DG_Natural	PK_DS_Geological	PK_DT_Landslide	PK_DP_Upper Arrow Lake BC	PK_DD_DATE	0	0
13	PK_DC_Incident	PK_DG_Technology	PK_DS_Fire	PK_DT_Non-Residential	PK_DP_Toronto ON	PK_DD_DATE	0	0
14	PK_DC_Disaster	PK_DG_Natural	PK_DS_Meteorological - Hydrological	PK_DT_Flood	PK_DP_Red River MB	PK_DD_DATE	0	0
15	PK_DC_Disaster	PK_DG_Natural	PK_DS_Meteorological - Hydrological	PK_DT_Winter Storm	PK_DP_Nova Scotia	PK_DD_DATE	0	0
16	PK_DC_Disaster	PK_DG_Natural	PK_DS_Geological	PK_DT_Landslide	PK_DP_Spences Bridge BC	PK_DD_DATE	0	0

Query executed successfully. | DESKTOP-NSU0G7U (15.0 RTM) | DESKTOP-NSU0G7U\Dell (54) | CDD | 00:00:00 | 1,000 rows

Properties

Current connection parameters

- **Aggregate Status**
  - Connection failures
  - Elapsed time: 00:00:00.138
  - Finish time: 2022-06-20 10:40:04 AM
  - Name: DESKTOP-NSU0G7U
  - Rows returned: 1000
  - Start time: 2022-06-20 10:40:04 AM
  - State: Open
- **Connection**
  - Connection name: DESKTOP-NSU0G7U (DE
- **Connection Details**
  - Connection elapse: 00:00:00.138
  - Connection encryp: Not encrypted
  - Connection finish t: 2022-06-20 10:40:04 AM
  - Connection rows re: 1000
  - Connection start ti: 2022-06-20 10:40:04 AM
  - Connection state: Open
  - Display name: DESKTOP-NSU0G7U
  - Login name: DESKTOP-NSU0G7U\De
  - Server name: DESKTOP-NSU0G7U
  - Server version: 15.0.2000
  - Session Tracing ID
  - SPID: 54

Name

The name of the connection.

Ready | Ln 1 | Col 1 | Ch 1 | INS

Call Stack | Breakpoints | Exception Settings | Command Window

Autos | Locals | Watch 1

Ready

DellCommandUpdate

3 updates are ready to install View Details

10:40 AM

- 3

```
select [dbo].[Final Assignment Canadian Disaster Database DataSheet (1)].[DATE],
[dbo].[Final Assignment Canadian Disaster Database DataSheet (1)].[GROUP],
[dbo].[Final Assignment Canadian Disaster Database DataSheet (1)].[TYPE] "Event"
from[dbo].[Final Assignment Canadian Disaster Database DataSheet (1)]
Where [DATE] NOT IN ('1899-12-30') AND [GROUP]='Natural'
Order by [TYPE]
```

- **4**

```
select [dbo].[Final Assignment Canadian Disaster Database DataSheet (1)].[DATE],
[dbo].[Final Assignment Canadian Disaster Database DataSheet (1)].[FATALITIES],
[dbo].[Final Assignment Canadian Disaster Database DataSheet (1)].[TYPE] "Event"
from[dbo].[Final Assignment Canadian Disaster Database DataSheet (1)]
Where [DATE] NOT IN ('1899-12-30’)
Order by [TYPE]
```

5.a

```
select [dbo].[Final Assignment Canadian Disaster Database DataSheet (1)].[DATE],
[dbo].[Final Assignment Canadian Disaster Database DataSheet (1)].[TYPE],
[dbo].[Final Assignment Canadian Disaster Database DataSheet (1)].[COST]
"Estimated Cost"
from[dbo].[Final Assignment Canadian Disaster Database DataSheet (1)]
Where [DATE] NOT IN ('1899-12-30')
Order by [DATE]
```

- **5b**

```
select sum ([dbo].[Final Assignment Canadian Disaster Database DataSheet (1)].[COST]) "Total Costs",
[dbo].[Final Assignment Canadian Disaster Database DataSheet (1)].[TYPE],
[dbo].[Final Assignment Canadian Disaster Database DataSheet (1)].[DATE]
from [dbo].[Final Assignment Canadian Disaster Database DataSheet (1)]
Where [DATE] NOT IN ('1899-12-30')
group by [TYPE],[DATE]
order by [DATE]
```

- 6

```
select [dbo].[Final Assignment Canadian Disaster Database DataSheet (1)].[DATE],
[dbo].[Final Assignment Canadian Disaster Database DataSheet (1)].[CATEGORY],
[dbo].[Final Assignment Canadian Disaster Database DataSheet (1)].[GROUP]
"Human-made"
from[dbo].[Final Assignment Canadian Disaster Database DataSheet (1)]
Where [CATEGORY]='Incident'
```

AutoSave Off | Canadian Disaster Database DataSheet • Saved | Search (Alt+Q) | olumide Durojaiye OD

File Home Insert Page Layout Formulas Data Review View Help | Comments | Share

Paste | Cut | Copy | Format Painter | Clipboard

Calibri | 11 | Font

Wrap Text | Merge & Center | Alignment

Percentage | Number

Conditional Formatting | Format as Table

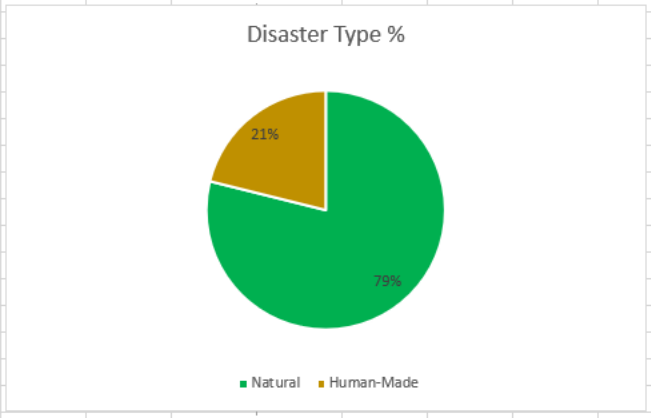
Normal | Bad | Good | Neutral | Calculation | Check Cell | Explanatory ... | Input | Styles

Insert | Delete | Format | Cells

AutoSum | Fill | Clear | Sort & Filter | Find & Select | Editing

Analyze Data | Analysis

E18 | 21%



Disaster Type	%
Natural	79%
Human-Made	21%

percentage of all disasters (100%) were human-made 21%

Conflict	2%
Technology	19%

% of Human made Disaster | Natural disaster forecast | Human Made disaster forecast | Simulation-natural | simulation-Human made

Ready | Scroll Lock | Accessibility: Investigate | 100%

Type here to search | 21°C Mostly sunny | ENG | 12:01 PM 2022-06-20

Five suggestions on how to prevent human-made disasters

Monitoring, enforcing environmental protection laws, public health safety measures and heavy sanctions must be put in place to avoid harm posed by Industries in every sector

Public awareness program should be encouraged

Policies should be taken by individual sectors to ensure safe storage of hazardous chemicals

There should be adequate communication and cooperation between key stakeholders.

Hazardous sites should be far from residential areas

- Question 8

- Supervised learning, that means having a full set of labeled data while training an algorithm. Fully labeled means that each example in the training dataset is tagged with the answer the algorithm should come up within its own

- Whereas, in unsupervised learning, a deep learning model is handed a dataset without explicit instructions on what to do with it. The training dataset is a collection of examples without a specific desired outcome or correct answer. The neural network then attempts to automatically find structure in the data by extracting useful features and analyzing its structure. It does not have perfectly label dataset, hence

- The difference between supervised and unsupervised learning is that supervised learning uses labeled datasets, and unsupervised learning does not. Supervised learning requires more human preparation at the beginning of the process due to the need for proper labeling. The labeling is used as a guide to determine if its pattern recognition is accurate or not.

- Unsupervised learning models work independently on unlabeled datasets with little human supervision. Because unsupervised learning does not require a hypothesis to identify patterns, it removes hypothesis bias.

- For supervised and unsupervised models of Disaster prevention the Dimensional Model, Monte-carlo Simulations can be used to determine weather patterns, disaster forecasting so that effective prevention measures can be planned.

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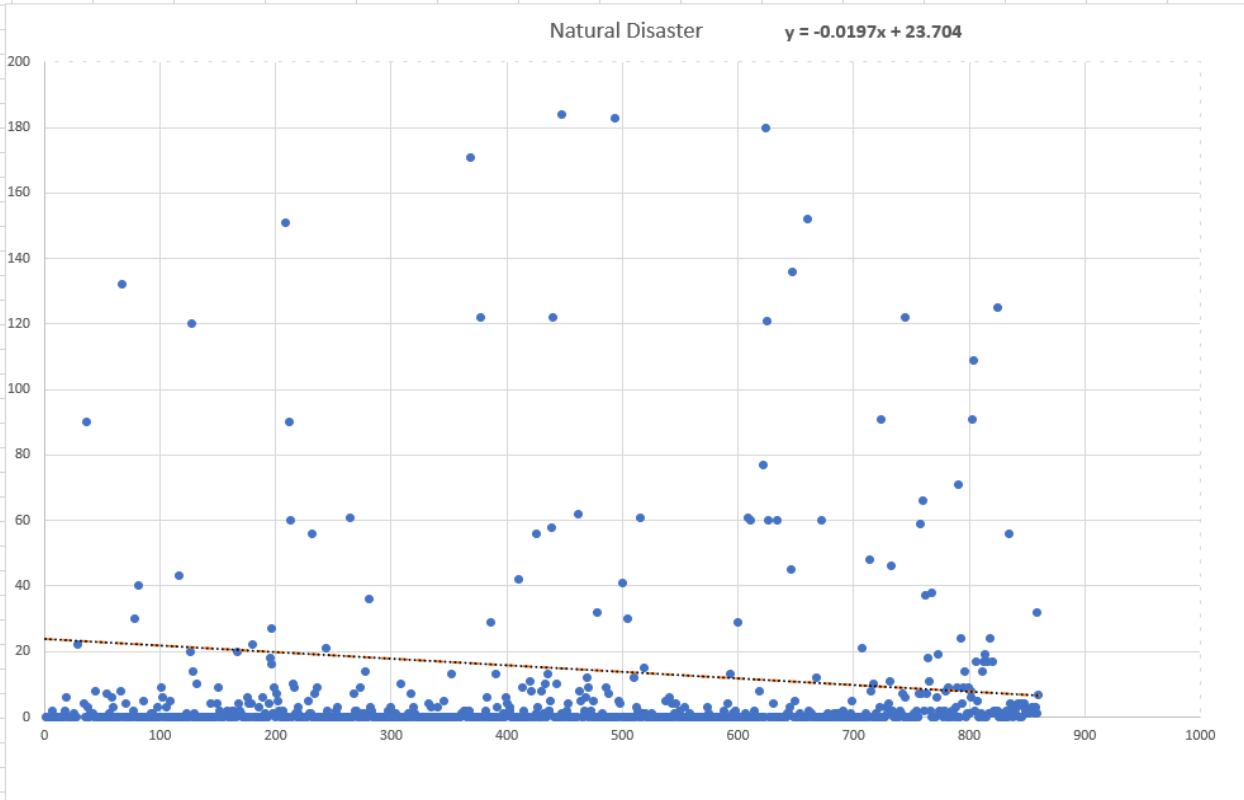
Paste | Cut | Copy | Format Painter | Clipboard | Calibri 11 | Font | Wrap Text | Merge & Center | Alignment | General | Number | Conditional Formatting | Format as Table | Normal | Bad | Good | Neutral | Calculation | Check Cell | Explanatory ... | Input | Styles | Insert | Delete | Format | Cells | AutoSum | Fill | Clear | Sort & Filter | Find & Select | Editing | Analyze Data | Analysis

O36

	A	B	C	D	E
1	Events		Start	End	Difference
2	1		3/1/1902	3/1/1902	0
3	2		4/29/1903	4/29/1903	0
4	3		9/1/1992	9/1/1992	0
5	4		7/17/1995	7/17/1995	0
6	5		2/28/1903	2/28/1903	0
7	6		4/24/1904	4/24/1904	0
8	7		2/15/1905	2/17/1905	2
9	8		8/13/1905	8/13/1905	0
10	9		4/26/1908	4/26/1908	0
11	10		1/4/1909	1/4/1909	0
12	11		11/28/1909	11/28/1909	0
13	12		1/1/1910	1/1/1910	0
14	13		3/5/1910	3/5/1910	0
15	14		4/15/1910	4/15/1910	0
16	15		4/18/1910	4/18/1910	0
17	16		7/11/1911	7/11/1911	0
18	17		6/30/1912	6/30/1912	0
19	18		7/8/1912	7/10/1912	2
20	19		11/7/1913	11/13/1913	6
21	20		1/1/1914	1/1/1914	0
22	21		1/1/1914	1/1/1914	0
23	22		4/1/1914	4/1/1914	0
24	23		1/1/1915	1/1/1915	0
25	24		3/22/1915	3/22/1915	0
26	25		7/8/1915	7/9/1915	1
27	26		4/24/1916	4/24/1916	0
28	27		7/29/1916	7/29/1916	0
29	28		1/1/1917	1/1/1917	0
30	29		10/28/1917	11/19/1917	22
31	30		1/1/1918	1/1/1925	2557
32	31		1/1/1918	12/31/1918	364
33	32		1/1/1919	12/31/1919	364
34	33		1/1/1920	12/31/1920	365
35	34		3/17/1920	3/21/1920	4
36	35		7/22/1920	7/22/1920	0
37	36		4/1/1986	6/30/1986	90
38	37		4/1/1986	4/4/1986	3



Next Natural Disaster Duration will be in 6.7Days

% of Human made Disaster | Natural disaster forecast | Human Made disaster forecast | Simulation-natural | simulation-Human made

Ready Calculate Scroll Lock Accessibility: Investigate 100%

Type here to search | 22°C Mostly sunny | ENG | 12:30 PM 2022-06-20

AutoSave Off | Canadian Disaster Database DataSheet | Search (Alt+Q) | olumide Durojaiye OD

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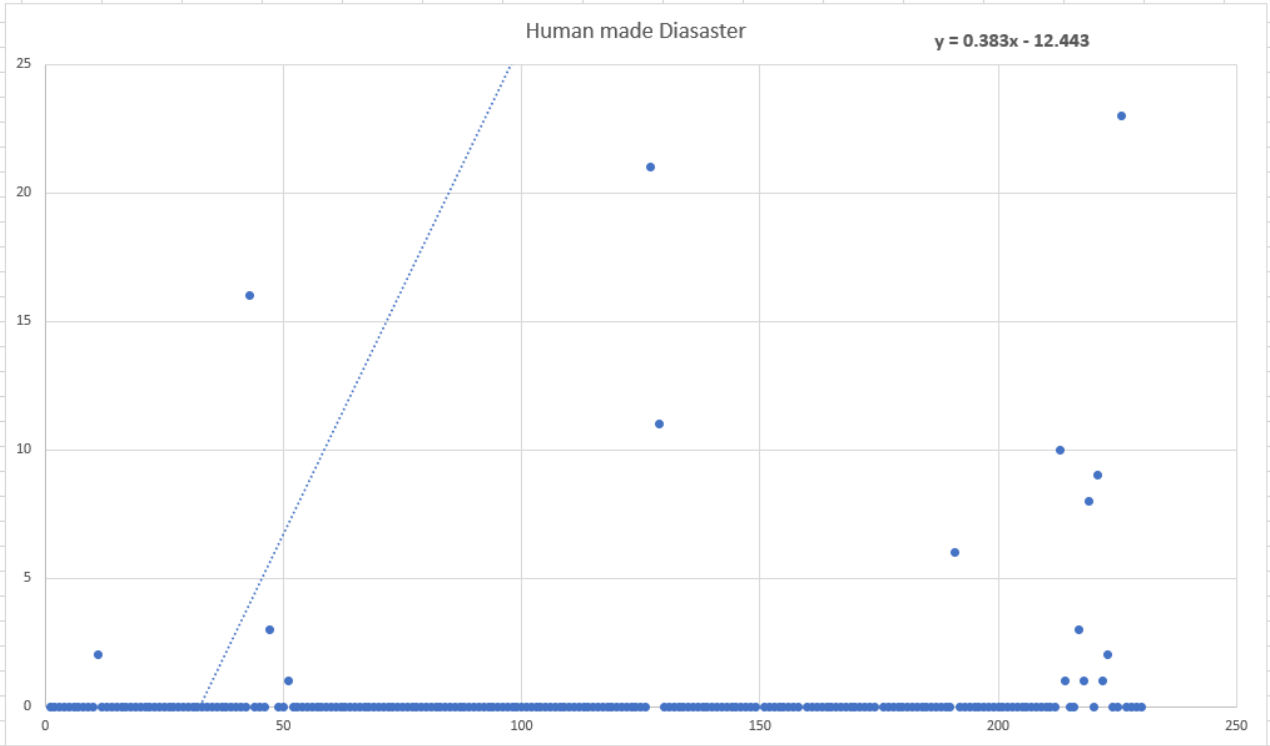
Clipboard Font Alignment Number Styles Cells Editing Analysis

Y28

	A	B	C	D
1	EVENT START DATE	EVENT END DATE	Event	Differen
2	4/26/1900	4/26/1900	1	0
3	1/1/1901	1/1/1901	2	0
4	1/1/1901	1/1/1901	3	0
5	1/1/1902	1/1/1902	4	0
6	5/22/1902	5/22/1902	5	0
7	1/1/1903	1/1/1903	6	0
8	1/1/1904	1/1/1904	7	0
9	4/19/1904	4/19/1904	8	0
10	1/1/1906	1/1/1906	9	0
11	8/29/1907	8/29/1907	10	0
12	8/1/1908	8/3/1908	11	2
13	1/21/1910	1/21/1910	12	0
14	5/28/1914	5/28/1914	13	0
15	6/19/1914	6/19/1914	14	0
16	1/1/1915	1/1/1915	15	0
17	2/1/1915	2/1/1915	16	0
18	2/3/1916	2/3/1916	17	0
19	9/11/1916	9/11/1916	18	0
20	1/1/1917	1/1/1917	19	0
21	7/25/1917	7/25/1917	20	0
22	12/6/1917	12/6/1917	21	0
23	1/23/1918	1/23/1918	22	0
24	10/12/1918	10/12/1918	23	0
25	10/23/1918	10/23/1918	24	0
26	5/30/1986	5/30/1986	25	0
27	10/26/1986	10/26/1986	26	0
28	10/1/1987	10/1/1987	27	0
29	3/7/1988	3/7/1988	28	0
30	5/8/1988	5/8/1988	29	0
31	5/10/1988	5/10/1988	30	0
32	5/24/1988	5/24/1988	31	0
33	12/17/1988	12/17/1988	32	0
34	8/23/1988	8/23/1988	33	0
35	1/1/1989	1/1/1989	34	0
36	1/1/1989	1/1/1989	35	0
37	1/1/1989	1/1/1989	36	0
38	3/10/1989	3/10/1989	37	0

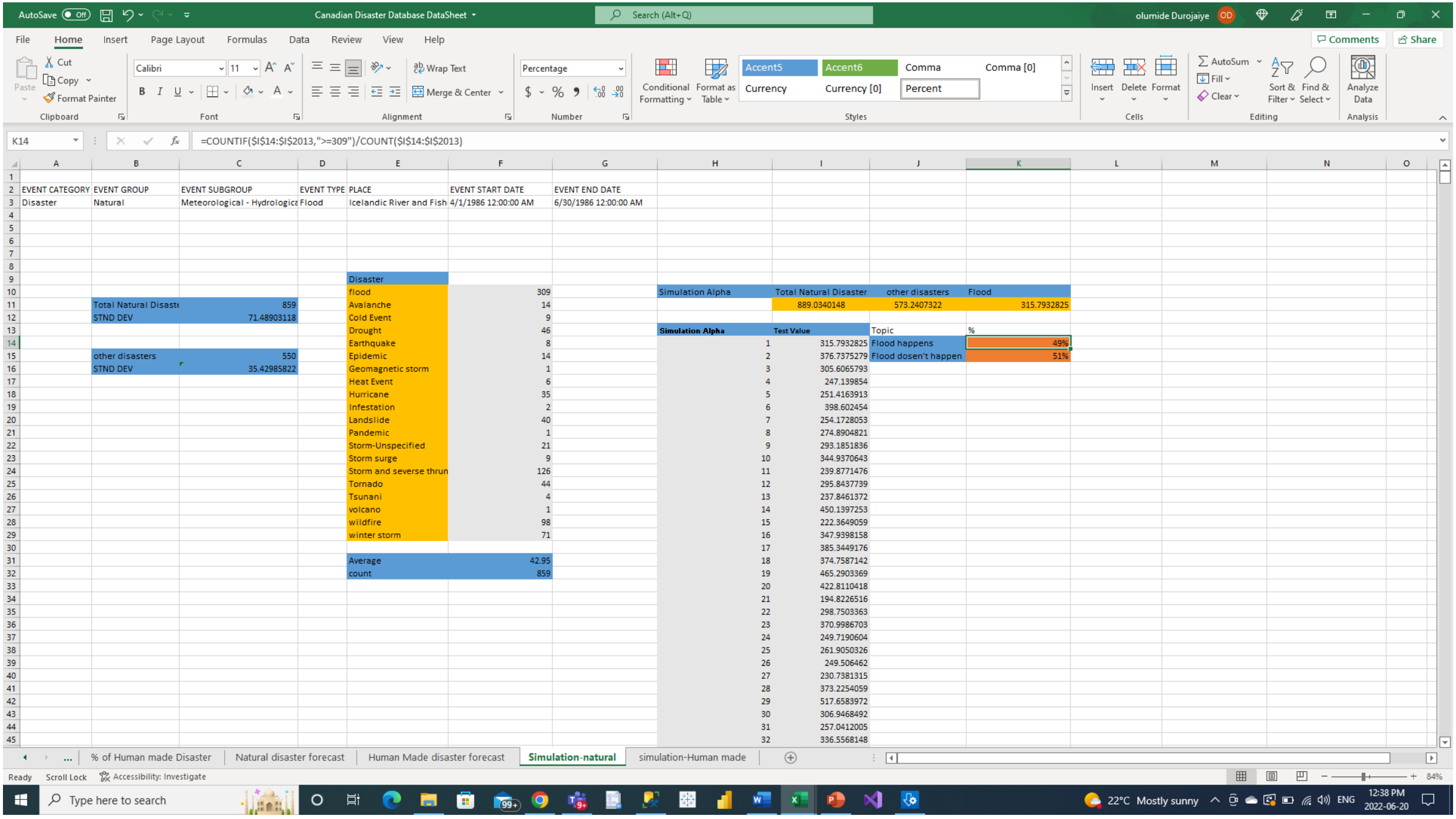


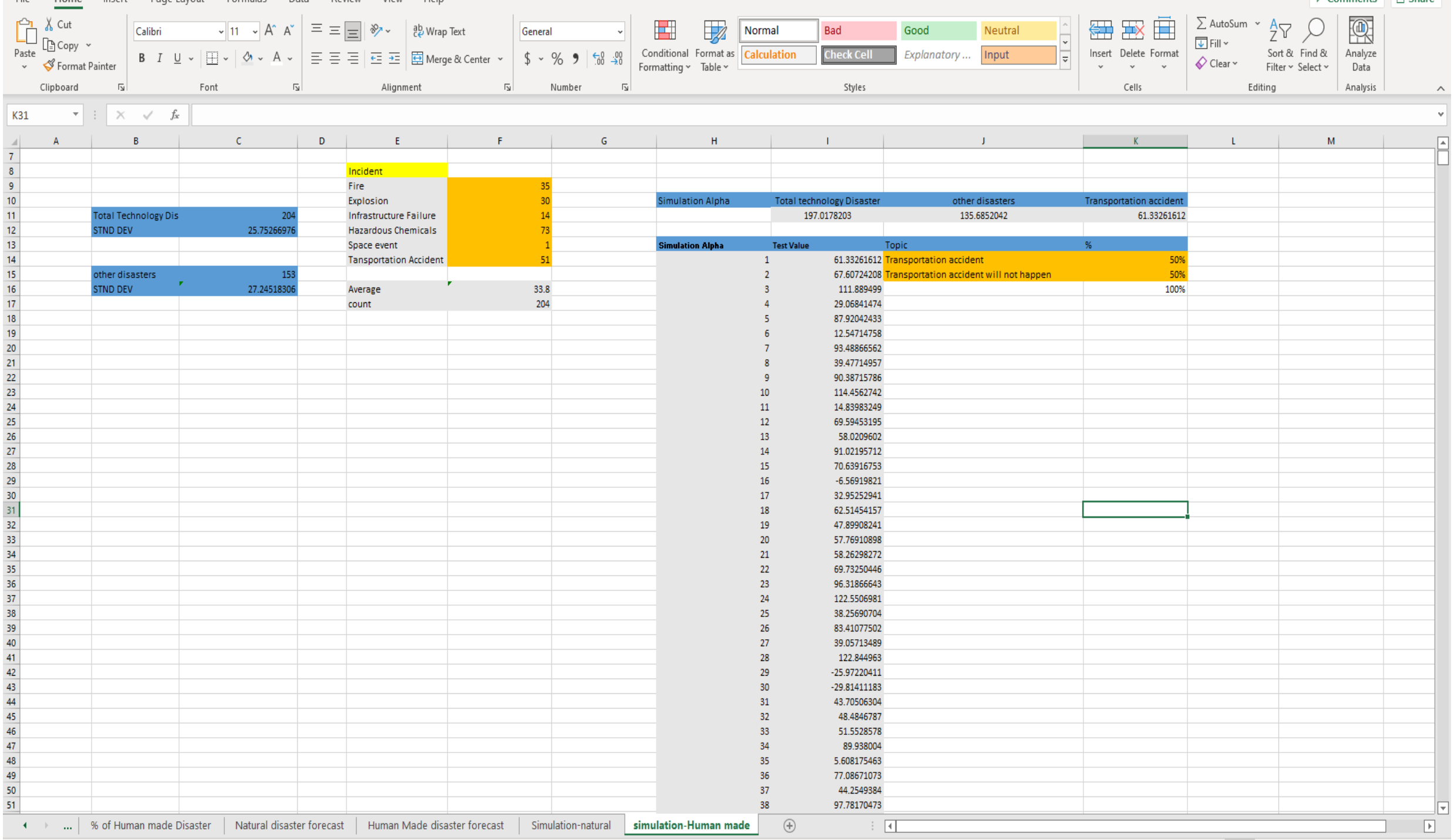
Next Duration Human-Made Disaster will be in 76 days

... | % of Human made Disaster | Natural disaster forecast | Human Made disaster forecast | Simulation-natural | simulation-Human made

Calculate Scroll Lock Accessibility: Investigate | Data Table: 1 | 100%

Type here to search | 22°C Mostly sunny | ENG | 12:29 PM 2022-06-20


AutoSave Off
Canadian Disaster Database DataSheet
Search (Alt+Q)
olumide Durojaiye
File Home Insert Page Layout Formulas Data Review View Help
Comments Share
Cut Copy Format Painter Paste
Calibri 11
Wrap Text Merge & Center
Percentage
Conditional Formatting Format as Table
Accent5 Accent6 Comma Comma [0]
Currency Currency [0] Percent
Insert Delete Format
AutoSum Fill Clear
Sort & Filter Find & Select
Analyze Data
Clipboard Font Alignment Number Styles Cells Editing Analysis
K14
=COUNTIF($I$14:$I$2013,">=309")/COUNT($I$14:$I$2013)
EVENT CATEGORY EVENT GROUP EVENT SUBGROUP EVENT TYPE PLACE EVENT START DATE EVENT END DATE
Disaster Natural Meteorological - Hydrologica Flood Icelandic River and Fish 4/1/1986 12:00:00 AM 6/30/1986 12:00:00 AM
Disaster
flood 309
Avalanche 14
Cold Event 9
Drought 46
Earthquake 8
Epidemic 14
Geomagnetic storm 1
Heat Event 6
Hurricane 35
Infestation 2
Landslide 40
Pandemic 1
Storm-Unspecified 21
Storm surge 9
Storm and severse thrun 126
Tornado 44
Tsunani 4
volcano 1
wildfire 98
winter storm 71
Average 42.95
count 859
Total Natural Disaste 859
STND DEV 71.48903118
other disasters 550
STND DEV 35.42985822
Simulation Alpha Total Natural Disaster other disasters Flood
889.0340148 573.2407322 315.7932825
Simulation Alpha Test Value
1 315.7932825
2 376.7375279
3 305.6065793
4 247.139854
5 251.4163913
6 398.602454
7 254.1728053
8 274.8904821
9 293.1851836
10 344.9370643
11 239.8771476
12 295.8437739
13 237.8461372
14 450.1397253
15 222.3649059
16 347.9398158
17 385.3449176
18 374.7587142
19 465.2903369
20 422.8110418
21 194.8226516
22 298.7503363
23 370.9986703
24 249.7190604
25 261.9050326
26 249.506462
27 230.7381315
28 373.2254059
29 517.6583972
30 306.9468492
31 257.0412005
32 336.5568148
Topic %
Flood happens 49%
Flood dosen't happen 51%
% of Human made Disaster
Natural disaster forecast
Human Made disaster forecast
Simulation-natural
simulation-Human made
Ready Scroll Lock Accessibility: Investigate
84%
Type here to search
22°C Mostly sunny
ENG
12:38 PM
2022-06-20



	Total Technology Dis	204
	STND DEV	25.75266976
	other disasters	153
	STND DEV	27.24518306

Incident	
Fire	35
Explosion	30
Infrastructure Failure	14
Hazardous Chemicals	73
Space event	1
Tansportation Accident	51
Average	33.8
count	204

Simulation Alpha	Total technology Disaster	other disasters	Transportation accident
	197.0178203	135.6852042	61.33261612

Simulation Alpha	Test Value	Topic	%
1	61.33261612	Transportation accident	50%
2	67.60724208	Transportation accident will not happen	50%
3	111.889499		100%
4	29.06841474		
5	87.92042433		
6	12.54714758		
7	93.48866562		
8	39.47714957		
9	90.38715786		
10	114.4562742		
11	14.83983249		
12	69.59453195		
13	58.0209602		
14	91.02195712		
15	70.63916753		
16	-6.56919821		
17	32.95252941		
18	62.51454157		
19	47.89908241		
20	57.76910898		
21	58.26298272		
22	69.73250446		
23	96.31866643		
24	122.5506981		
25	38.25690704		
26	83.41077502		
27	39.05713489		
28	122.844963		
29	-25.97220411		
30	-29.81411183		
31	43.70506304		
32	48.4846787		
33	51.5528578		
34	89.938004		
35	5.608175463		
36	77.08671073		
37	44.2549384		
38	97.78170473		

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Using APRIORI modeling, we observe that disasters did occur at the same time.

Disaster	Natural	Meteorological - Hydrological	Flood	Prince Edward Island	9/7/1999 12:00:00 AM	
Disaster	Natural	Meteorological - Hydrological	Storms and Severe Thunderstorms	Balmoral and Val d'Amour areas in Restigouche County NB	9/7/1999 12:00:00 AM	
Disaster	Natural	Meteorological - Hydrological	Wildfire	Haileybury ON	9/30/1922 12:00:00 AM	
Disaster	Natural	Geological	Landslide	Echo Harbour BC	9/30/1922 12:00:00 AM	
Disaster	Natural	Meteorological - Hydrological	Hurricane / Typhoon / Tropical Storm	Maritime Provinces	9/28/2008 12:00:00 AM	
Disaster	Natural	Meteorological - Hydrological	Hurricane / Typhoon / Tropical Storm	Yarmouth County NS	9/28/2008 12:00:00 AM	