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Email Campaign Analysis By Jupyter Notebook

Group no: 04

group member :

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1.**Abstract:** Here we are analyzing the email campaigns of 2018, 2019, 2020 where we have sent emails to some people, we will see how many people have clicked on the mail, how many have entered it. And this is an annual, monthly, daily account. We have published these through different graphs. Here we have used 6 graphs

2.Introduction: Email marketing is one of the most measurable marketing tactics on the planet.
We can track everything from who opened and clicked your campaigns
to where the subscriber lives and which links they clicked on.

3. mathodology:- Here we have used slicer and formatted text in campaign code.
We have used card in kpi.
in graphs, pie charts, down charts, and tables are used.and here (br,dr,email click count
uniqe click count,daliver email,email open account ,is email sent) are use in table

4.result and discussion:-Here we have sent emails to a total of 10002 people out of which total campaign is 259 people,

158 people have clicked in our customers,

mail has reached to 9204 people email oepn by email click count is 83.18%

```
data_set
```

	Unnamed: 0	CampaignCodJ	Medium_Type	Is_Email_Sent	Email_Sent_Status	Email_SentDate	Email_Open_Count	Email_Click_Count	Is_SMS_Se
0	04B738A5-71FD-11e8-A0F8-00505682069A	J-IF-SS UNITECH-APR-HYD	Email	1	Rejected	5-Apr-20	0	0	N
1	894FAAD2-6F3C-11e8-9252-0050568252F9	J-HY-SS UNITECH-UNIDJNTIFIJD-FWC-19DJC	Email	1	sent	19-Dec-19	0	0	N
2	0918CDD9-5788-11e9-93F0-005056984FDD	J-ST-SS UNITECH-SURJ-20MAR	Email	1	Rejected	20-Mar-20	0	0	N
3	0EC2729D-1618-11e8-B598-0050569D5A2F	J-PO-SS UNITECH-UM-SALJNOTIDJNTIFIJD	Email	1	Sent	10-Jan-20	0	0	N
4	CAAEDBE3-B411-11e8-ACF0-00505682069A	J-WO-SS UNITECH-YD-DUKTIG	Email	1	Sent	29-Nov-18	0	0	N
...	...	...	...	...	...	...	...	...	
9997	8980002F-7F6D-11e8-9DF8-0050568260A3	J-DC-SS UNITECH-YD-02B	Email	1	Sent	17-Nov-18	0	0	N
9998	BB720E30-7186-11e8-9A3E-0050569D7549	J-MO-SS UNITECH--NONPMA-INACTIVJ-HYD-21NOV	Email	1	Sent	21-Nov-19	0	0	N
9999	358D43A1-B588-11e8-B9A6-0050569D3164	J-WO-SS UNITECH-YD-HJMNJS-04	Email	1	Sent	13-Dec-18	0	0	N
10000	FF93F9C4-9B8A-11e8-9A0E-0050569D5A2F	J-MO-SS UNITECH-HYD-01	Email	1	Sent	4-Oct-18	1	0	N
10001	FF93F9C4-9B8A-11e8-9A0E-0050569D5A2F	J-MO-SS UNITECH-HYD-01	Email	1	Sent	4-Oct-18	1	0	N

10002 rows × 10 columns

Figure:-Data Set

```
]: data_set.head()
```

]:

	Unnamed: 0	CampaignCodJ	Medium_Type	Is_Email_Sent	Email_Sent_Status	Email_SentDate	Email_Open_Count	Email_Click_Count	Is_SMS_Sent
0	04B738A5-71FD-11e8-A0F8-00505682069A	J-IF-SS UNITECH-APR-HYD	Email	1	Rejected	5-Apr-20	0	0	NaN
1	894FAAD2-6F3C-11e8-9252-0050568252F9	J-HY-SS UNITECH-UNIDJNTIFIJD-FWC-19DJC	Email	1	sent	19-Dec-19	0	0	NaN
2	0918CDD9-5788-11e9-93F0-005056984FDD	J-ST-SS UNITECH-SURJ-20MAR	Email	1	Rejected	20-Mar-20	0	0	NaN
3	0EC2729D-1618-11e8-B598-0050569D5A2F	J-PO-SS UNITECH-UM-SALJNOTIDJNTIFIJD	Email	1	Sent	10-Jan-20	0	0	NaN
4	CAAEDBE3-B411-11e8-ACF0-00505682069A	J-WO-SS UNITECH-YD-DUKTIG	Email	1	Sent	29-Nov-18	0	0	NaN

Figure:DataSet_Head

	Unnamed: 0	CampaignCodJ	Medium_Type	Is_Email_Sent	Email_Sent_Status	Email_SentDate	Email_Open_Count	Email_Click_Count	Is_SMS_Sent
9997	8980002F-7F6D-11e8-9DF8-0050568260A3	J-DC-SS UNITECH-YD-02B	Email	1	Sent	17-Nov-18	0	0	NaN
9998	BB720E30-7186-11e8-9A3E-0050569D7549	J-MO-SS UNITECH--NONPMA-INACTIVJ-HYD-21NOV	Email	1	Sent	21-Nov-19	0	0	NaN
9999	358D43A1-B588-11e8-B9A6-0050569D3164	J-WO-SS UNITECH-YD-HJMNJS-04	Email	1	Sent	13-Dec-18	0	0	NaN
10000	FF93F9C4-9B8A-11e8-9A0E-0050569D5A2F	J-MO-SS UNITECH-HYD-01	Email	1	Sent	4-Oct-18	1	0	NaN
10001	FF93F9C4-9B8A-11e8-9A0E-0050569D5A2F	J-MO-SS UNITECH-HYD-01	Email	1	Sent	4-Oct-18	1	0	NaN

Figure:-Data set_Tail

In [6]:
```
# series is a 1-D array

Email_name = pd.Series(["Faisal", "Mahedi", "Rakib", "Baby"])
Email_country = pd.Series(["Bangladesh", "India", "Pakistan", "Uganda"])
```

In [7]:
```
Email_name
```

Out[7]:
```
0    Faisal
1    Mahedi
2     Rakib
3      Baby
dtype: object
```

In [8]:
```
Email_country
```

Out[8]:
```
0    Bangladesh
1         India
2      Pakistan
3        Uganda
dtype: object
```

In [9]:
```
# A dataframe is a 2D structure with key value

Email_data = pd.DataFrame({"Name":Email_name, "Country":Email_country})
Email_data
```

Out[9]:

	Name	Country
0	Faisal	Bangladesh
1	Mahedi	India
2	Rakib	Pakistan
3	Baby	Uganda

In [10]:
```
data_set.dtypes
```

Out[10]:
```
Unnamed: 0            object
CampaignCodJ          object
Medium_Type           object
Is_Email_Sent          int64
Email_Sent_Status     object
Email_SentDate        object
Email_Open_Count       int64
Email_Click_Count      int64
Is_SMS_Sent          float64
SMS_SentDate         float64
dtype: object
```

Figure:-Email name,country,Email_Data,Data_set

```
In [11]: data_set.columns
```

```
Out[11]: Index(['Unnamed: 0', 'CampaignCodJ', 'Medium_Type', 'Is_Email_Sent',
       'Email_Sent_Status', 'Email_SentDate', 'Email_Open_Count',
       'Email_Click_Count', 'Is_SMS_Sent', 'SMS_SentDate'],
      dtype='object')
```

```
In [12]: data_set.index
```

```
Out[12]: RangeIndex(start=0, stop=10002, step=1)
```

```
In [13]: data_set.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 10002 entries, 0 to 10001
Data columns (total 10 columns):
 #   Column             Non-Null Count  Dtype  
---  ------             --------------  -----  
 0   Unnamed: 0         10002 non-null  object 
 1   CampaignCodJ       10002 non-null  object 
 2   Medium_Type        10002 non-null  object 
 3   Is_Email_Sent      10002 non-null  int64  
 4   Email_Sent_Status  9832 non-null   object 
 5   Email_SentDate     10002 non-null  object 
 6   Email_Open_Count   10002 non-null  int64  
 7   Email_Click_Count  10002 non-null  int64  
 8   Is_SMS_Sent        0 non-null      float64
 9   SMS_SentDate       0 non-null      float64
dtypes: float64(2), int64(3), object(5)
memory usage: 781.5+ KB
```

```
In [14]: data_set.mean()
```

```
Out[14]: Is_Email_Sent        1.000000
Email_Open_Count     0.209258
Email_Click_Count    0.024195
Is_SMS_Sent               NaN
SMS_SentDate              NaN
dtype: float64
```

Figure:Data_set,Data_set.Index,data_set info

```
In [15]: data_set.groupby(["Email_Sent_Status"]).mean()
```

Out[15]:

Email_Sent_Status	Is_Email_Sent	Email_Open_Count	Email_Click_Count	Is_SMS_Sent	SMS_SentDate
Bounced	1.0	0.000000	0.000000	NaN	NaN
Deferred	1.0	0.000000	0.000000	NaN	NaN
Rejected	1.0	0.000000	0.000000	NaN	NaN
Sent	1.0	0.221681	0.025228	NaN	NaN
SoftBounced	1.0	0.000000	0.000000	NaN	NaN
bounced	1.0	0.000000	0.000000	NaN	NaN
rejected	1.0	0.000000	0.000000	NaN	NaN
sent	1.0	0.265664	0.033417	NaN	NaN
soft-bounced	1.0	0.000000	0.000000	NaN	NaN

```
In [16]: data_set.groupby(["Email_SentDate"]).mean()
```

Out[16]:

Email_SentDate	Is_Email_Sent	Email_Open_Count	Email_Click_Count	Is_SMS_Sent	SMS_SentDate
1-Aug-19	1.0	0.388060	0.000000	NaN	NaN
1-Feb-20	1.0	0.048387	0.000000	NaN	NaN
1-Mar-19	1.0	0.352941	0.147059	NaN	NaN
1-Mar-20	1.0	0.182927	0.006098	NaN	NaN
1-May-19	1.0	0.121495	0.056075	NaN	NaN
...	...	...	...	...	...
8-Mar-19	1.0	0.303704	0.014815	NaN	NaN
8-May-19	1.0	0.352941	0.000000	NaN	NaN
8-Nov-19	1.0	0.290323	0.010753	NaN	NaN
9-Apr-19	1.0	0.300000	0.000000	NaN	NaN
9-Jun-18	1.0	0.400000	0.050000	NaN	NaN

153 rows × 5 columns

```
In [17]: data_set.groupby(["Medium_Type"]).mean()
```

Out[17]:

Medium_Type	Is_Email_Sent	Email_Open_Count	Email_Click_Count	Is_SMS_Sent	SMS_SentDate
Email	1.0	0.209258	0.024195	NaN	NaN

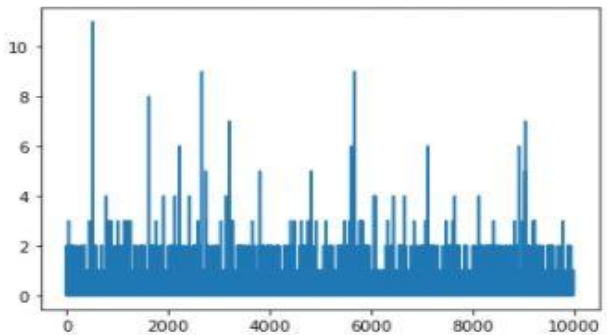
Figure: group By

```
In [18]: people_wage = pd.Series([80.8, 55, 120.3])
         people_wage.mean()
Out[18]: 85.36666666666667

In [19]: data_set["Is_Email_Sent"].sum()
Out[19]: 10002

In [20]: # plotting Data

         data_set["Email_Open_Count"].plot()
Out[20]: <AxesSubplot:>
```




```
In [21]: data_set["Email_Open_Count"].hist()
Out[21]: <AxesSubplot:>
```

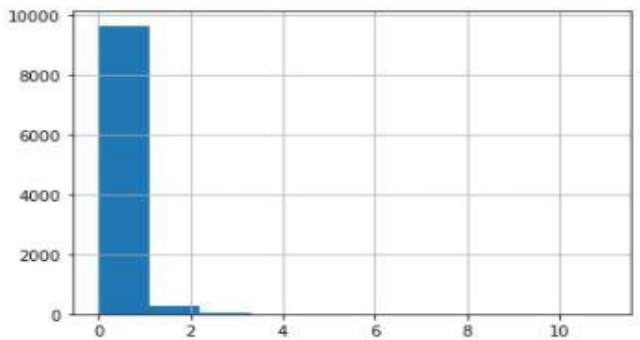


Figure: Wage,Plot,hist

```
In [22]: data_set['Email_Sent_Status'] = data_set['Email_Sent_Status'].str.lower()
         data_set
```

Out[22]:

	Unnamed: 0	CampaignCodJ	Medium_Type	Is_Email_Sent	Email_Sent_Status	Email_SentDate	Email_Open_Count	Email_Click_Count	Is_SMS_S
0	04B738A5-71FD-11e8-A0F8-00505682069A	J-IF-SS UNITECH-APR-HYD	Email	1	rejected	5-Apr-20	0	0	N
1	894FAAD2-6F3C-11e8-9252-0050568252F9	J-HY-SS UNITECH-UNIDJNTIFIJD-FWC-19DJC	Email	1	sent	19-Dec-19	0	0	N
2	0918CDD9-5788-11e9-93F0-005056984FDD	J-ST-SS UNITECH-SURJ-20MAR	Email	1	rejected	20-Mar-20	0	0	N
3	0EC2729D-1618-11e8-B598-0050569D5A2F	J-PO-SS UNITECH-UM-SALJNOTIDJNTIFIJD	Email	1	sent	10-Jan-20	0	0	N
4	CAAEDBE3-B411-11e8-ACF0-00505682069A	J-WO-SS UNITECH-YD-DUKTIG	Email	1	sent	29-Nov-18	0	0	N
...	...	...	...	...	...	...	...	...	
9997	8980002F-7F6D-11e8-9DF8-0050568260A3	J-DC-SS UNITECH-YD-02B	Email	1	sent	17-Nov-18	0	0	N
9998	BB720E30-7186-11e8-9A3E-0050569D7549	J-MO-SS UNITECH--NONPMA-INACTIVJ-HYD-21NOV	Email	1	sent	21-Nov-19	0	0	N
9999	358D43A1-B588-11e8-B9A6-0050569D3164	J-WO-SS UNITECH-YD-HJMNJS-04	Email	1	sent	13-Dec-18	0	0	N
10000	FF93F9C4-9B8A-11e8-9A0E-0050569D5A2F	J-MO-SS UNITECH-HYD-01	Email	1	sent	4-Oct-18	1	0	N
10001	FF93F9C4-9B8A-11e8-9A0E-0050569D5A2F	J-MO-SS UNITECH-HYD-01	Email	1	sent	4-Oct-18	1	0	N

10002 rows × 10 columns

Figure :lower

In [23]:
```
# Working with missing Data

data_missing = pd.read_csv("Email.csv", encoding="ISO-8859-1")
data_missing
```

Out[23]:

	Unnamed: 0	CampaignCodJ	Medium_Type	Is_Email_Sent	Email_Sent_Status	Email_SentDate	Email_Open_Count	Email_Click_Count	Is_SMS_Se
0	04B738A5-71FD-11e8-A0F8-00505682069A	J-IF-SS UNITECH-APR-HYD	Email	1	Rejected	5-Apr-20	0	0	N
1	894FAAD2-6F3C-11e8-9252-0050568252F9	J-HY-SS UNITECH-UNIDJNTIFIJD-FWC-19DJC	Email	1	sent	19-Dec-19	0	0	N
2	0918CDD9-5788-11e9-93F0-005056984FDD	J-ST-SS UNITECH-SURJ-20MAR	Email	1	Rejected	20-Mar-20	0	0	N
3	0EC2729D-1618-11e8-B598-0050569D5A2F	J-PO-SS UNITECH-UM-SALJNOTIDJNTIFIJD	Email	1	Sent	10-Jan-20	0	0	N
4	CAAEDBE3-B411-11e8-ACF0-00505682069A	J-WO-SS UNITECH-YD-DUKTIG	Email	1	Sent	29-Nov-18	0	0	N
...	...	...	...	...	...	...	...	...	
9997	8980002F-7F6D-11e8-9DF8-0050568260A3	J-DC-SS UNITECH-YD-02B	Email	1	Sent	17-Nov-18	0	0	N
9998	BB720E30-7186-11e8-9A3E-0050569D7549	J-MO-SS UNITECH--NONPMA-INACTIVJ-HYD-21NOV	Email	1	Sent	21-Nov-19	0	0	N
9999	358D43A1-B588-11e8-B9A6-0050569D3164	J-WO-SS UNITECH-YD-HJMNJS-04	Email	1	Sent	13-Dec-18	0	0	N
10000	FF93F9C4-9B8A-11e8-9A0E-0050569D5A2F	J-MO-SS UNITECH-HYD-01	Email	1	Sent	4-Oct-18	1	0	N
10001	FF93F9C4-9B8A-11e8-9A0E-0050569D5A2F	J-MO-SS UNITECH-HYD-01	Email	1	Sent	4-Oct-18	1	0	N

10002 rows × 10 columns

Figure:Missing data

In [28]:
```
# removing missing values/cleaning empty rows

data_missing.dropna(inplace=True)
data_missing
```

Out[28]:

Unnamed: 0	CampaignCodJ	Medium_Type	Is_Email_Sent	Email_Sent_Status	Email_SentDate	Email_Open_Count	Email_Click_Count	Is_SMS_Sent	SMS_Sent

In [ ]:

Figure: Removing missing Values

5.conclution: Most experiments conclude that personalized email marketing improves.Secondly, the author also implemented analyses of the company's external .Email is the pinnacle of permission marketing
and a highly effective way to boost your bottom line and grow your business.
It provides a direct connection to your prospects.