IBM REPORT 2

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    "import matplotlib.patches as mpatches\n",
    "%matplotlib inline \n",
    "import seaborn as sns\n",
    "import plotly.io as pio\n",
    "import plotly.graph_objects as go\n",
    "from plotly.offline import init_notebook_mode, iplot\n",
    "from sklearn.preprocessing import StandardScaler\n",
    "import warnings\n",
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      "      <td>Indian</td>\n",
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base_price  \\\n",
```

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152.29   \n",
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135.83   \n",
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135.86   \n",
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437.53   \n",
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num_orders  city_code  \\\n",
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    "data['discount amount']=data['base_price']-
data['checkout_price']"
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data['checkout_price'])/data['base_price'])*100"
   ]
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    "data['discount y/n'] = [1 if x>0 else 0 for x in
(data['base_price']-data['checkout_price'])]"
   ]
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    "data['compare_week_price'] = data['checkout_price'] -
data['checkout_price'].shift(1) "
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in data['compare_week_price']]"
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135.86   \n",
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437.53   \n",
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242.50   \n",
```

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1.00   \n",
       "3           56      TYPE_C      2.0  Beverages  Indian            
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     ]
    }
   ],
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    "print(\"The Shape of Test dataset :\",test.shape)"
   ]
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encode the City with Highest No. of Orders as CH1, City with
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    "from sklearn.metrics import r2_score"
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      "RMSE : 194.4023205177741\n"
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```

```
    "\n",
    "X_train=train.drop(['id','num_orders','week'],axis=1)\n",
    "y_train=train['num_orders']\n",
    "\n",
    "X_test=test.drop(['id','num_orders','week'],axis=1)\n",
    "y_test=test['num_orders']\n",
    "\n",
    "reg = LinearRegression()\n",
    "reg.fit(X_train,y_train)\n",
    "print('Train Score :',reg.score(X_train,y_train))\n",
    "print('Test Score :',reg.score(X_test,y_test))\n",
    "\n",
    "y_pred = reg.predict(X_test)\n",
    "print('R squared :',(r2_score(y_test,y_pred)))\n",

"print('RMSE :',np.sqrt(mean_squared_error(y_test,y_pred)))"
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    "\n",
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    "num=datax[['checkout_price','base_price','discount
amount','discount percent','compare_week_price']]\n",
    "scal=
pd.DataFrame(sc.fit_transform(num),columns=num.columns)\n",
```

```
    "datas=pd.concat([scal,cat],axis=1)\n",
    "\n",
    "train=datas[datas['week'].isin(range(1,136))]\n",
    "test=datas[datas['week'].isin(range(136,146))]\n",
    "\n",
    "\n",
    "X_train=train.drop(['id','num_orders','week'],axis=1)\n",
    "y_train=np.log(train['num_orders']) #Applying Log
Transformation on the Target Feature\n",
    "\n",
    "X_test=test.drop(['id','num_orders','week'],axis=1)\n",
    "y_test=np.log(test['num_orders']) #Applying Log
Transformation on the Target Feature\n",
    "\n",
    "reg = LinearRegression()\n",
    "reg.fit(X_train,y_train)\n",
    "print('Train Score :',reg.score(X_train,y_train))\n",
    "print('Test Score :',reg.score(X_test,y_test))\n",
    "\n",
    "y_pred = reg.predict(X_test)\n",
    "print('R squared :',(r2_score(y_test,y_pred)))\n",

"print('RMSLE :',np.sqrt(mean_squared_error(y_test,y_pred)))"
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  "                          4:'Q1',\n",
  "                          5:'Q2',\n",
  "                          6:'Q3',\n",
  "                          7:'Q4',\n",
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  "                          9:'Q2',\n",
  "                          10:'Q3',\n",
  "                          11:'Q4'})"
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```
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  "                          2:'Y3'})"
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  "numy=datay.drop(['Quarter', 'Year'],axis=1)\n",
  "\n",
  "encode1y=pd.get_dummies(objy,drop_first = True)\n",
  "encode1y.head()\n",
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  "datay=pd.concat([numy,encode1y],axis=1)"
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    "    q1=round(train[col].quantile(0.25),6)\n",
    "    iqr=q3-q1\n",
    "    lw = q1 - (3*iqr)\n",
    "    hw = q3 + (3*iqr)  \n",
    "    uo=train[train[col]>hw].shape[0]\n",
    "    lo=train[train[col]<lw].shape[0]\n",
    "    print('Number of Upper Outliers :',uo)\n",
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