In [16]:
```
import pandas as ps
import numpy as np
import plotly.express as px
import plotly.graph_objects as go
import plotly.io as pio
pio.templates.default ="plotly_white"
```

In [3]:
```
data=ps.read_csv("train.csv")
```

In [4]:
```
print(data.head())
```

```
     ID  Customer_ID  Month           Name   Age          SSN Occupation  \
0  5634         3392      1  Aaron Maashoh  23.0  821000265.0  Scientist
1  5635         3392      2  Aaron Maashoh  23.0  821000265.0  Scientist
2  5636         3392      3  Aaron Maashoh  23.0  821000265.0  Scientist
3  5637         3392      4  Aaron Maashoh  23.0  821000265.0  Scientist
4  5638         3392      5  Aaron Maashoh  23.0  821000265.0  Scientist

   Annual_Income  Monthly_Inhand_Salary  Num_Bank_Accounts  ...  Credit_Mix  \
0       19114.12            1824.843333                3.0  ...        Good
1       19114.12            1824.843333                3.0  ...        Good
2       19114.12            1824.843333                3.0  ...        Good
3       19114.12            1824.843333                3.0  ...        Good
4       19114.12            1824.843333                3.0  ...        Good

   Outstanding_Debt  Credit_Utilization_Ratio Credit_History_Age  \
0            809.98                 26.822620              265.0
1            809.98                 31.944960              266.0
2            809.98                 28.609352              267.0
3            809.98                 31.377862              268.0
4            809.98                 24.797347              269.0

   Payment_of_Min_Amount  Total_EMI_per_month  Amount_invested_monthly  \
0                     No            49.574949                 21.46538
1                     No            49.574949                 21.46538
2                     No            49.574949                 21.46538
3                     No            49.574949                 21.46538
4                     No            49.574949                 21.46538

                 Payment_Behaviour Monthly_Balance  Credit_Score
0   High_spent_Small_value_payments      312.494089          Good
1    Low_spent_Large_value_payments      284.629162          Good
2   Low_spent_Medium_value_payments      331.209863          Good
3    Low_spent_Small_value_payments      223.451310          Good
4  High_spent_Medium_value_payments      341.489231          Good

[5 rows x 28 columns]
```

In [5]:
```
print(data.info())
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 100000 entries, 0 to 99999
Data columns (total 28 columns):
 #   Column                    Non-Null Count   Dtype
---  ------                    --------------   -----
 0   ID                        100000 non-null  int64
 1   Customer_ID               100000 non-null  int64
 2   Month                     100000 non-null  int64
 3   Name                      100000 non-null  object
 4   Age                       100000 non-null  float64
 5   SSN                       100000 non-null  float64
 6   Occupation                100000 non-null  object
 7   Annual_Income             100000 non-null  float64
 8   Monthly_Inhand_Salary     100000 non-null  float64
 9   Num_Bank_Accounts         100000 non-null  float64
 10  Num_Credit_Card           100000 non-null  float64
 11  Interest_Rate             100000 non-null  float64
 12  Num_of_Loan               100000 non-null  float64
 13  Type_of_Loan              100000 non-null  object
 14  Delay_from_due_date       100000 non-null  float64
 15  Num_of_Delayed_Payment    100000 non-null  float64
 16  Changed_Credit_Limit      100000 non-null  float64
 17  Num_Credit_Inquiries      100000 non-null  float64
 18  Credit_Mix                100000 non-null  object
 19  Outstanding_Debt          100000 non-null  float64
 20  Credit_Utilization_Ratio  100000 non-null  float64
 21  Credit_History_Age        100000 non-null  float64
 22  Payment_of_Min_Amount     100000 non-null  object
 23  Total_EMI_per_month       100000 non-null  float64
 24  Amount_invested_monthly   100000 non-null  float64
 25  Payment_Behaviour         100000 non-null  object
 26  Monthly_Balance           100000 non-null  float64
 27  Credit_Score              100000 non-null  object
dtypes: float64(18), int64(3), object(7)
memory usage: 21.4+ MB
None
```

In [6]:
```
print(data.isnull().sum())
```

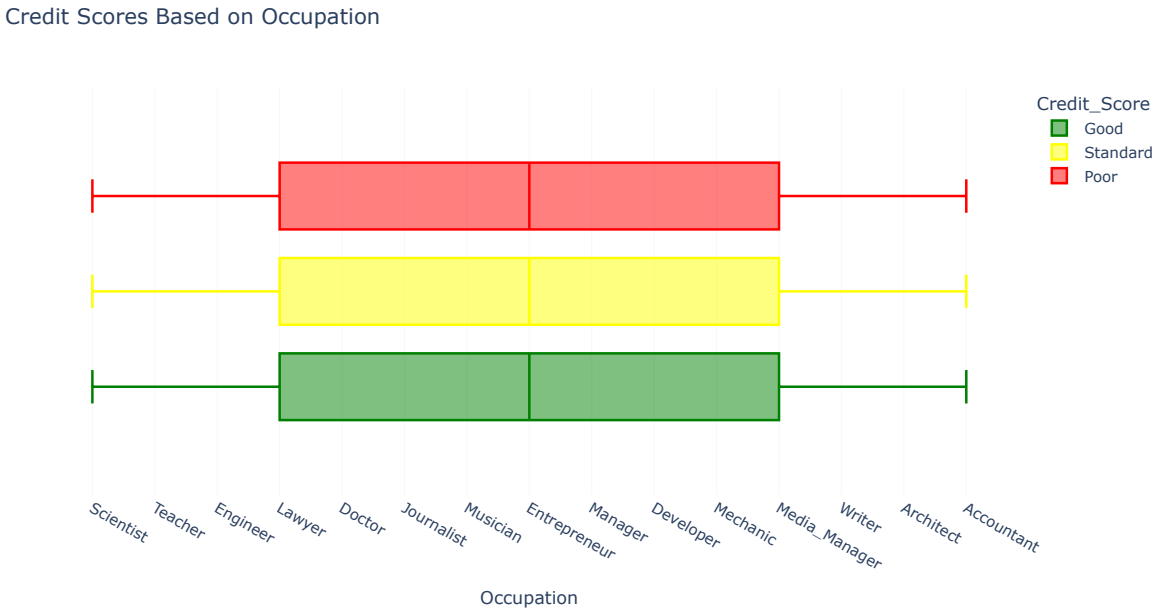
```
ID                          0
Customer_ID                 0
Month                       0
Name                        0
Age                         0
SSN                         0
Occupation                  0
Annual_Income               0
Monthly_Inhand_Salary       0
Num_Bank_Accounts           0
Num_Credit_Card             0
Interest_Rate               0
Num_of_Loan                 0
Type_of_Loan                0
Delay_from_due_date         0
Num_of_Delayed_Payment      0
Changed_Credit_Limit        0
Num_Credit_Inquiries        0
Credit_Mix                  0
Outstanding_Debt            0
Credit_Utilization_Ratio    0
Credit_History_Age          0
Payment_of_Min_Amount       0
Total_EMI_per_month         0
Amount_invested_monthly     0
Payment_Behaviour           0
Monthly_Balance             0
Credit_Score                0
dtype: int64
```

In [7]:
```
data["Credit_Score"].value_counts()
```

Out[7]:
```
Standard    53174
Poor        28998
Good        17828
Name: Credit_Score, dtype: int64
```

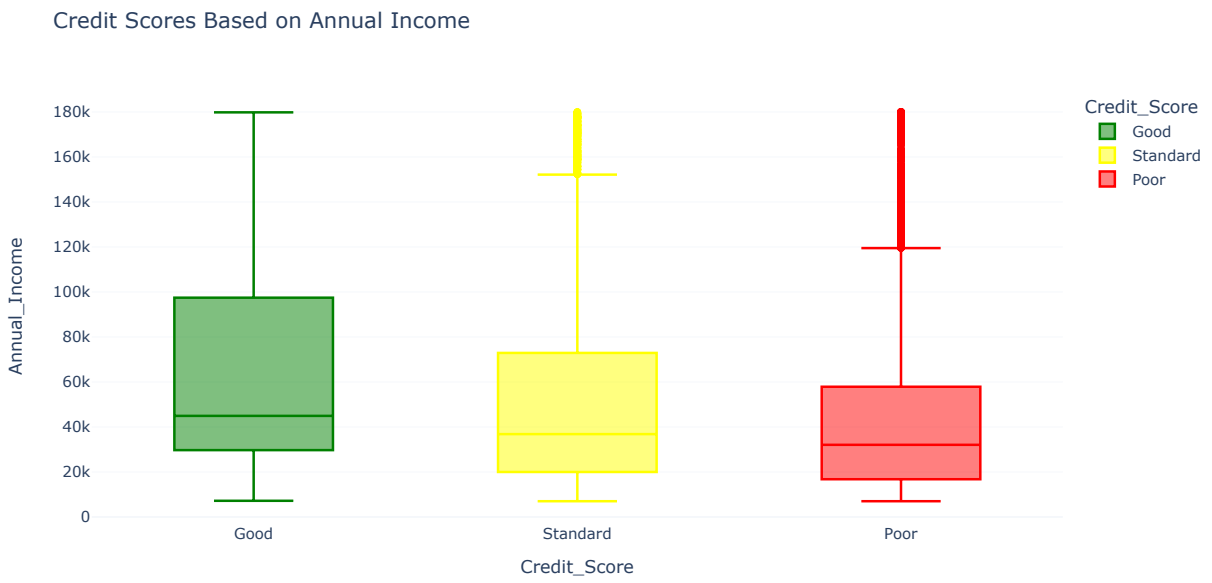
In [8]:
```
fig1=px.box(data,
            x="Occupation",
            color="Credit_Score",
            title="Credit Scores Based on Occupation",
            color_discrete_map={"Poor":"red",
                                "Standard":"Yellow",
                                "Good":"green"})
```

In [9]:
```
fig1.show()
```



In [13]:
```
fig2=px.box(data,
            x="Credit_Score",
             y="Annual_Income",
            color="Credit_Score",
            title="Credit Scores Based on Annual Income",
            color_discrete_map={"Poor":"red",
                                "Standard":"Yellow",
                                "Good":"green"})
```

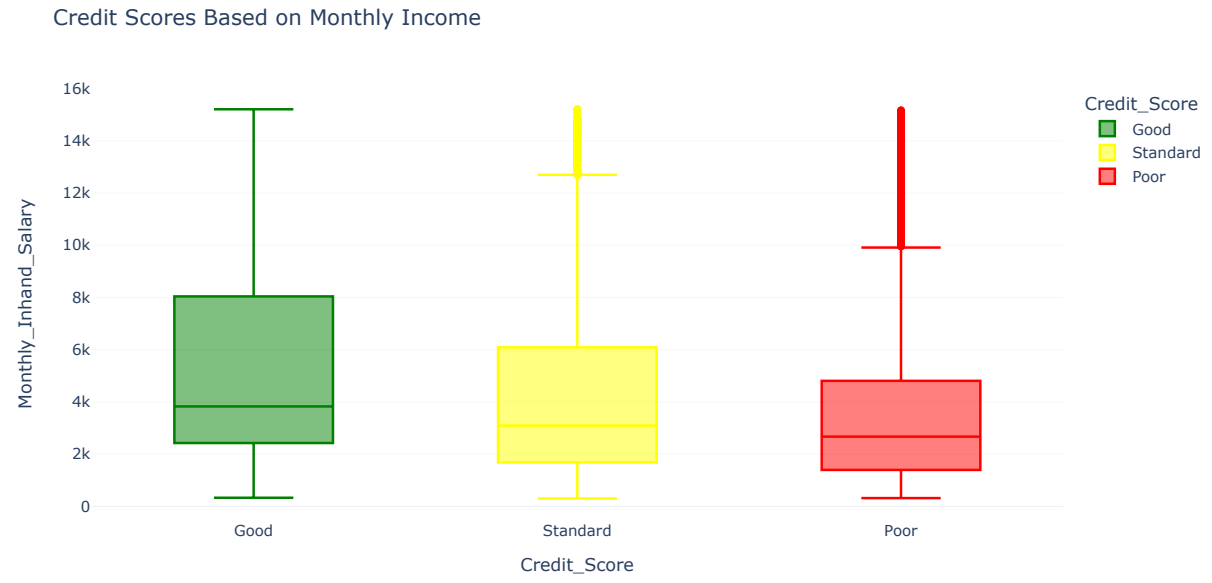
In [14]:
```
fig2.update_traces(quartilemethod="exclusive")
```



In [17]:
```
#Based on Montly Income
```

In [19]:
```
fig3=px.box(data,
            x="Credit_Score",
             y="Monthly_Inhand_Salary",
            color="Credit_Score",
            title="Credit Scores Based on Monthly Income",
            color_discrete_map={"Poor":"red",
                                "Standard":"Yellow",
                                "Good":"green"})
```

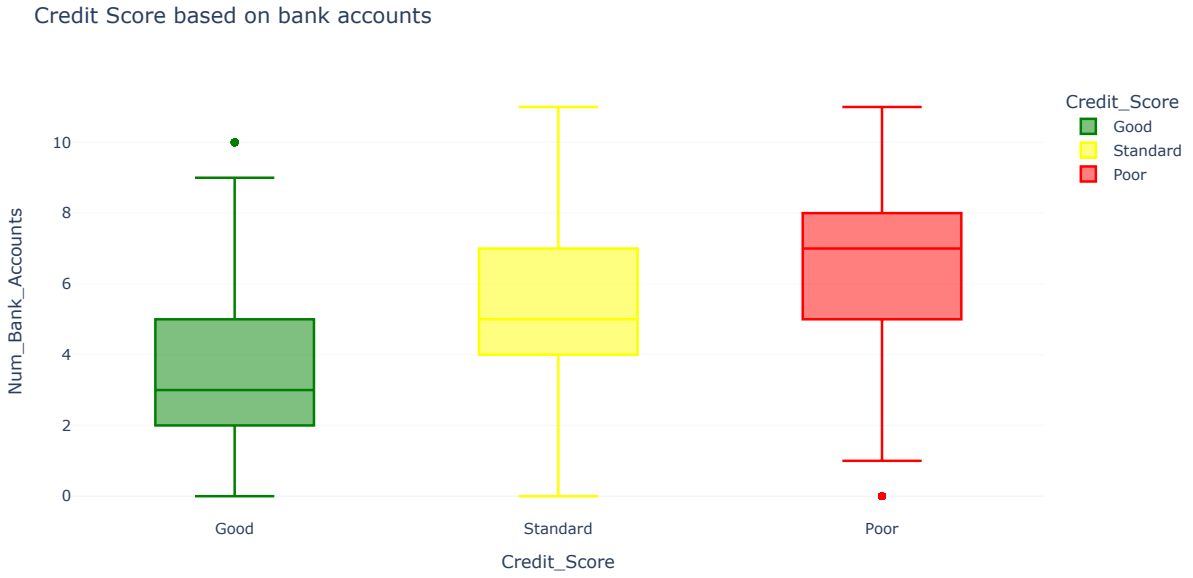
In [20]:
```
fig3.show()
```



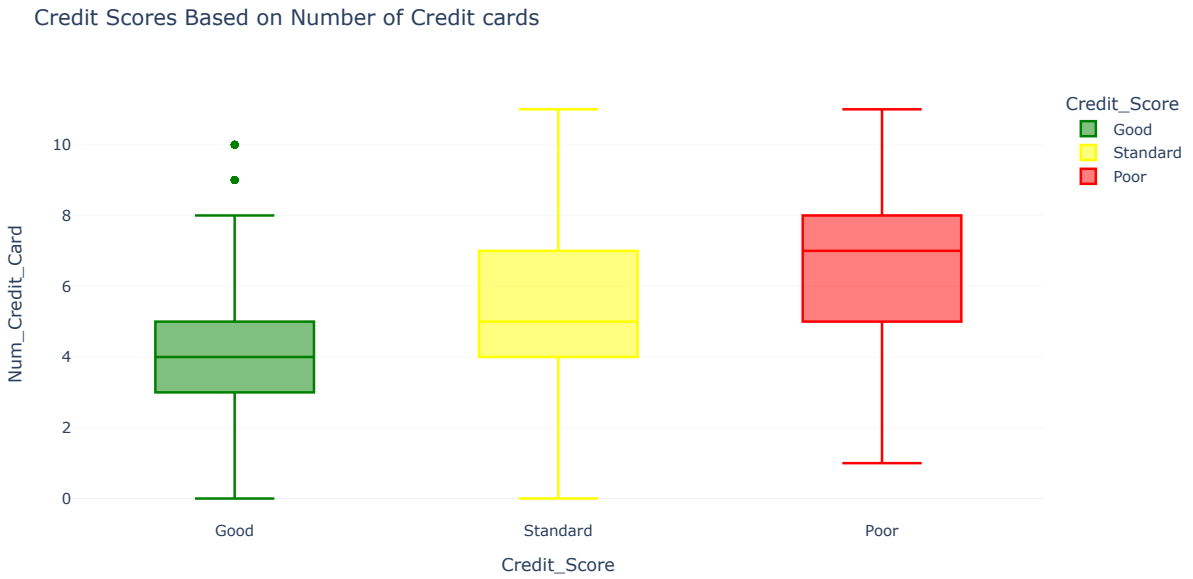
In [21]:
```
#Number of Bank Accounts Impact
```

In [24]:
```
fig4=px.box(data,
            x="Credit_Score",
            y="Num_Bank_Accounts",
            color="Credit_Score",
            title="Credit Score based on bank accounts",
            color_discrete_map={'Poor':'red',
                                'Standard':'yellow',
                                'Good':'green'})
```

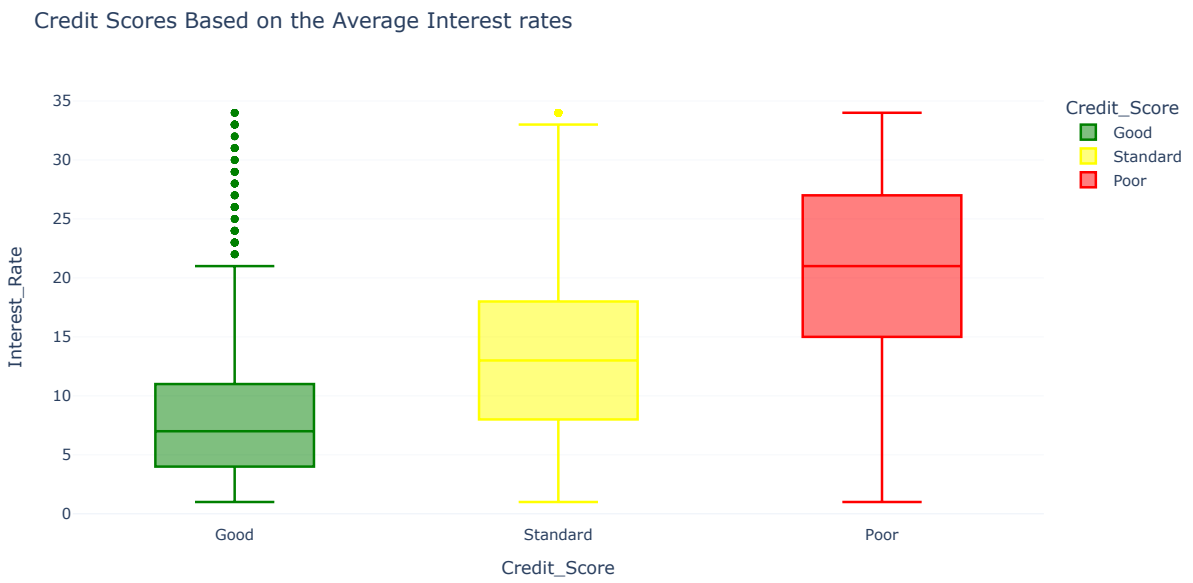
In [25]:
```
fig4.show()
```



In [26]:
```
fig = px.box(data,
             x="Credit_Score",
             y="Num_Credit_Card",
             color="Credit_Score",
             title="Credit Scores Based on Number of Credit cards",
             color_discrete_map={'Poor':'red',
                                 'Standard':'yellow',
                                 'Good':'green'})
fig.update_traces(quartilemethod="exclusive")
fig.show()
```



In [27]:
```
fig = px.box(data,
             x="Credit_Score",
             y="Interest_Rate",
             color="Credit_Score",
             title="Credit Scores Based on the Average Interest rates",
             color_discrete_map={'Poor':'red',
                                 'Standard':'yellow',
                                 'Good':'green'})
fig.update_traces(quartilemethod="exclusive")
fig.show()
```



In [ ]: