Heroes of Pymoli

Video game analysis:

Observable Trends

• Consumers of Heros of Pymoli were vastly male. Out of 780 players, 83.59% (652) were male.

• The most popular age demographic was ages 20-24, making up 46.79% of players.

• Female players, on average, spent 18 cents more on the items in the game than male players.

In [12]:
```
# Dependencies and Setup
import pandas as pd
import numpy as np

# File to Load (Remember to Change These)
file_to_load = "purchase_data.csv"

# Read Purchasing File and store into Pandas data frame
purchase_data = pd.read_csv(file_to_load)
purchase_data_df = pd.DataFrame(purchase_data)
purchase_data_df.head()
```

Out[12]:

	Purchase ID	SN	Age	Gender	Item ID	Item Name	Price
0	0	Lisim78	20	Male	108	Extraction, Quickblade Of Trembling Hands	3.53
1	1	Lisovynya38	40	Male	143	Frenzied Scimitar	1.56
2	2	Ithergue48	24	Male	92	Final Critic	4.88
3	3	Chamassasya86	24	Male	100	Blindscythe	3.27
4	4	Iskosia90	23	Male	131	Fury	1.44

Player Count

In [13]:
```
all_players = purchase_data_df["SN"].count()
all_players
```

Out[13]: 780

Purchasing Analysis

In [21]:
```
unique_items_total = len(purchase_data_df["Item ID"].unique())
unique_items_total

purchases_total = purchase_data_df["Purchase ID"].count()
purchases_total

total_revenue = purchase_data_df["Price"].sum()
total_revenue

price_mean = purchase_data_df["Price"].mean()
price_mean

price_average = total_revenue/purchases_total
price_average

purchasing_analysis_df = pd.DataFrame([{"Number of Unique Items": unique_items
_total, "Average Price": price_mean,
                                       "Number of Purchases": purchases_total,
"Total Revenue": total_revenue}])
purchasing_analysis_df["Average Price"] = purchasing_analysis_df["Average Pric
e"].map("${:,.2f}".format)
purchasing_analysis_df["Total Revenue"] = purchasing_analysis_df["Total Revenu
e"].map("${:,.2f}".format)



purchasing_analysis_df["Number of Purchases"] = purchasing_analysis_df["Number
of Purchases"].map("${:,.2f}".format)
purchasing_analysis_df = purchasing_analysis_df.loc[:,["Number of Unique Item
s", "Average Price", "Number of Purchases", "Total Revenue"]]
purchasing_analysis_df
```

Out[21]:

	Number of Unique Items	Average Price	Number of Purchases	Total Revenue
0	179	$3.05	$780.00	$2,379.77

Gender Demographics

In [19]:
```
gender_df = pd.DataFrame(purchase_data_df["Gender"].value_counts())
gender_df

percent_players = (purchase_data_df["Gender"].value_counts()/all_players)*100
percent_players

gender_df["Percentage of Players"] = percent_players
gender_df["Percentage of Players"] = gender_df["Percentage of Players"].map("
{:,.2f}%".format)
gender_df

summary_gender_df = gender_df[["Percentage of Players", "Gender"]]
summary_gender_df

rename_gender_df = summary_gender_df.rename(columns={"Gender":"Total Count"})
rename_gender_df
```

Out[19]:

	Percentage of Players	Total Count
Male	83.59%	652
Female	14.49%	113
Other / Non-Disclosed	1.92%	15

Purchasing Analysis by Gender

In [3]:
```
gender_grouped_data_df = purchase_data_df.groupby(["Gender"])

gender_grouped_data_df["Purchase ID"].count().head()

total_purchases_value = gender_grouped_data_df["Price"].sum()
total_purchases_value.head()
analysis_total_purchases = total_purchases_value.map("${:,.2f}".format)
analysis_total_purchases.head()

average_purchase_price = gender_grouped_data_df["Price"].mean()
average_purchase_price.head()
analysis_average_purchase_price = average_purchase_price.map("${:,.2f}".format
)
analysis_average_purchase_price.head()

norm_totals = total_purchases_value/gender_grouped_data_df["Purchase ID"].coun
t()
analysis_norm_totals = norm_totals.map("${:,.2f}".format)
analysis_norm_totals.head()

org_gender_purchased_data_df = pd.DataFrame(gender_grouped_data_df["Purchase I
D"].count())
org_gender_purchased_data_df["Average Purchase Price"] = analysis_average_purc
hase_price
org_gender_purchased_data_df["Total Purchase Value"] = analysis_total_purchase
s
org_gender_purchased_data_df["Average Total Purchase per Person"] = analysis_n
orm_totals
org_gender_purchased_data_df

summary_gender_purchased_data_df = org_gender_purchased_data_df.rename(columns
={"Purchase ID":"Purchase Count"})
summary_gender_purchased_data_df
```

Out[3]:

Gender	Purchase Count	Average Purchase Price	Total Purchase Value	Average Total Purchase per Person
Female	113	$3.20	$361.94	$3.20
Male	652	$3.02	$1,967.64	$3.02
Other / Non-Disclosed	15	$3.35	$50.19	$3.35

Age Demographics

In [18]:
```
age_bins = [0, 9.90, 14.90, 19.90, 24.90, 29.90, 34.90, 39.90, 99999]

group_names = ["<10", "10-14", "15-19", "20-24", "25-29", "30-34", "35-39", "40+"]

agegroup_purchase_data_df = purchase_data_df
agegroup_purchase_data_df["Age Summary"] = pd.cut(agegroup_purchase_data_df["Age"], age_bins, labels=group_names)
agegroup_purchase_data_df

agegroup_purchase_data_df = agegroup_purchase_data_df.groupby("Age Summary")
agegroup_purchase_data_df.count()

summary_by_age_df = pd.DataFrame(agegroup_purchase_data_df.count())
summary_by_age_df

all_players = purchase_data_df["SN"].count()

summary_by_age_df["Purchase ID"] = (summary_by_age_df["Purchase ID"]/all_players)*100
summary_by_age_df

summary_by_age_df["Purchase ID"] = summary_by_age_df["Purchase ID"].map("{:,.2f}%".format)
summary_by_age_df

org_summary_by_age_df = summary_by_age_df[["Purchase ID","SN"]]
org_summary_by_age_df

agegroup_summary_df = org_summary_by_age_df.rename(columns={"Purchase ID":"Percentage of Players", "SN":"Total Count"})
agegroup_summary_df
```

Out[18]:

Age Summary	Percentage of Players	Total Count
<10	2.95%	23
10-14	3.59%	28
15-19	17.44%	136
20-24	46.79%	365
25-29	12.95%	101
30-34	9.36%	73
35-39	5.26%	41
40+	1.67%	13

In [12]:
```
analysis_by_age_df = pd.DataFrame(agegroup_purchase_data_df["Purchase ID"].cou
nt())
analysis_by_age_df

total_purchase_value_age = agegroup_purchase_data_df["Price"].sum()
total_purchase_value_age
analyze_total_purchase_value_age = total_purchase_value_age.map("${:,.2f}".for
mat)
analyze_total_purchase_value_age

avg_purchase_price_age = agegroup_purchase_data_df["Price"].mean()
avg_purchase_price_age
analyze_avg_purchase_price_age = avg_purchase_price_age.map("${:,.2f}".format)
analyze_avg_purchase_price_age

avg_totals_age = total_purchase_value_age/agegroup_purchase_data_df["Purchase
 ID"].count()
analyze_avg_totals_age = avg_totals_age.map("${:,.2f}".format)
analyze_avg_totals_age

analysis_by_age_df["Average Purchase Price"] = analyze_avg_purchase_price_age
analysis_by_age_df["Total Purchase Value"] = analyze_total_purchase_value_age
analysis_by_age_df["Average Total Purchase per Person"] = analyze_avg_totals_a
ge
analysis_by_age_df

summary_age_purchased_data_df = analysis_by_age_df.rename(columns={"Purchase I
D":"Purchase Count"})
summary_age_purchased_data_df
```

Out[12]:

Age Summary	Purchase Count	Average Purchase Price	Total Purchase Value	Average Total Purchase per Person
<10	23	$3.35	$77.13	$3.35
10-14	28	$2.96	$82.78	$2.96
15-19	136	$3.04	$412.89	$3.04
20-24	365	$3.05	$1,114.06	$3.05
25-29	101	$2.90	$293.00	$2.90
30-34	73	$2.93	$214.00	$2.93
35-39	41	$3.60	$147.67	$3.60
40+	13	$2.94	$38.24	$2.94

Top Spenders

In [19]:
```
orig_purchase_data_df = pd.DataFrame(purchase_data)
orig_purchase_data_df.head()

group_SN_top_spender_df = orig_purchase_data_df.groupby("SN")
group_SN_top_spender_df.count()

analysis_by_spender_df = pd.DataFrame(group_SN_top_spender_df["Purchase ID"].c
ount())
analysis_by_spender_df

total_purchase_value_SN = group_SN_top_spender_df["Price"].sum()
total_purchase_value_SN

avg_purchase_price_SN = group_SN_top_spender_df["Price"].mean()
avg_purchase_price_SN
analyze_avg_purchase_price_SN = avg_purchase_price_SN.map("${:,.2f}".format)
analyze_avg_purchase_price_SN

analysis_by_spender_df["Average Purchase Price"] = analyze_avg_purchase_price_
SN
analysis_by_spender_df["Total Purchase Value"] = total_purchase_value_SN
analysis_by_spender_df

total_SN_purchased_data_df = analysis_by_spender_df.rename(columns={"Purchase
 ID":"Purchase Count"})
topfive_spenders_df = total_SN_purchased_data_df.sort_values("Total Purchase V
alue", ascending=False)
topfive_spenders_df.head()

analyze_total_purchase_value_SN = total_purchase_value_SN.map("${:,.2f}".forma
t)
topfive_spenders_df["Total Purchase Value"] = analyze_total_purchase_value_SN
topfive_spenders_df.head()
```

Out[19]:

SN	Purchase Count	Average Purchase Price	Total Purchase Value
Lisosia93	5	$3.79	$18.96
Idastidru52	4	$3.86	$15.45
Chamjask73	3	$4.61	$13.83
Iral74	4	$3.40	$13.62
Iskadarya95	3	$4.37	$13.10

Most Popular Items

In [69]:
```
group_by_item_df = orig_purchase_data_df.groupby(["Item ID", "Item Name"])
group_by_item_df.count()

analysis_by_item_df = pd.DataFrame(group_by_item_df["Purchase ID"].count())
analysis_by_item_df

total_purchase_value_item = group_by_item_df["Price"].sum()
total_purchase_value_item
analyze_total_purchase_value_item = total_purchase_value_item.map("${:,.2f}".f
ormat)
analyze_total_purchase_value_item

purchase_price_item = group_by_item_df["Price"].mean()
purchase_price_item
analyze_purchase_price_item = purchase_price_item.map("${:,.2f}".format)
analyze_purchase_price_item

analysis_by_item_df["Item Price"] = analyze_purchase_price_item
analysis_by_item_df["Total Purchase Value"] = analyze_total_purchase_value_ite
m
analysis_by_item_df

sum_items_purchased_data_df = analysis_by_item_df.rename(columns={"Purchase I
D":"Purchase Count"})
topfive_items_df = sum_items_purchased_data_df.sort_values("Purchase Count", a
scending=False)
topfive_items_df.head()
```

Out[69]:

Item ID	Item Name	Purchase Count	Item Price	Total Purchase Value
92	Final Critic	13	$4.61	$59.99
178	Oathbreaker, Last Hope of the Breaking Storm	12	$4.23	$50.76
145	Fiery Glass Crusader	9	$4.58	$41.22
132	Persuasion	9	$3.22	$28.99
108	Extraction, Quickblade Of Trembling Hands	9	$3.53	$31.77

Most Profitable Items

In [76]:
```
sum_item_purchased_data_df["Total Purchase Value"] = group_by_item_df["Price"]
.sum()
sum_item_purchased_data_df

topfive_items_dff=sum_item_purchased_data_df.sort_values("Total Purchase Valu
e", ascending=False)

analyze_total_purchase_value_item = total_purchase_value_item.map("${:,.2f}".f
ormat)
topfive_items_df["Total Purchase Value"] = analyze_total_purchase_value_item
topfive_items_df.head()
```

Out[76]:

Item ID	Item Name	Purchase Count	Item Price	Total Purchase Value
92	**Final Critic**	13	$4.61	$59.99
178	**Oathbreaker, Last Hope of the Breaking Storm**	12	$4.23	$50.76
145	**Fiery Glass Crusader**	9	$4.58	$41.22
132	**Persuasion**	9	$3.22	$28.99
108	**Extraction, Quickblade Of Trembling Hands**	9	$3.53	$31.77