

Note

- Instructions have been included for each segment. You do not have to follow them exactly, but they are included to help you think through the steps.

```
In [1]: # Dependencies and Setup
import pandas as pd

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

# Read Purchasing File and store into Pandas data frame
purchase_df = pd.read_csv(file_to_load)
purchase_df.head(5)
```

	Purchase ID	SN	Age	Gender	Item ID	Item Name	Price
0	0	Lisin78	20	Male	108	Extraction, Quickblade Of Trembling Hands	3.53
1	1	Lisovnyia38	40	Male	143	Frenzied Scimitar	1.56
2	2	Ithergue48	24	Male	92	Final Critic	4.88
3	3	Chamassasya86	24	Male	100	Blindsythe	3.27
4	4	Iskosia90	23	Male	131	Fury	1.44

Player Count

- Display the total number of players

```
In [2]: Total_players=len(purchase_df["SN"].unique())
pd.DataFrame({"Total Players": [Total_players]})
```

Total Players
576

Purchasing Analysis (Total)

- Run basic calculations to obtain number of unique items, average price, etc.
- Create a summary data frame to hold the results
- Optional: give the displayed data cleaner formatting
- Display the summary data frame

```
In [13]: unique_items=len(purchase_df["Item ID"].unique())
average_price=round(purchase_df["Price"].mean(),2)
Total_purchase=len(purchase_df["Purchase ID"])
Total_revenue=purchase_df["Price"].sum()

summary_dict={"Number of Unique Items": unique_items,
              "Average Price": [average_price],
              "Number of Purchases": [Total_purchase],
              "Total Revenue": [Total_revenue]}

summary_df=pd.DataFrame(summary_dict)
summary_df["Total Revenue"]=summary_df["Total Revenue"].map("${:,.2f}".format)
summary_df["Average Price"]=summary_df["Average Price"].map("${:,.2f}".format)
print(summary_df)
```

	Number of Unique Items	Average Price	Number of Purchases	Total Revenue
0	179	\$3.85	780	\$2,379.77

Gender Demographics

- Percentage and Count of Male Players
- Percentage and Count of Female Players
- Percentage and Count of Other / Non-Disclosed

```
In [14]: gender_group=purchase_df.groupby("Gender")

gender_df=gender_group.agg({"SN": "nunique")).reset_index()
gender_df["Percentage of Players"]=round((gender_df["SN"]/Total_players)*100,2)
gender_df.rename(columns={"SN": "Total Count"}, inplace=True)
gender_df["Percentage of Players"]=gender_df["Percentage of Players"].map("{:.2f}%".format)
gender_df.set_index("Gender", inplace=True)
print(gender_df)
```

	Total Count	Percentage of Players
Gender		
Female	81	14.06%
Male	484	84.03%
Other / Non-Disclosed	11	1.91%

Purchasing Analysis (Gender)

- Run basic calculations to obtain purchase count, avg. purchase price, avg. purchase total per person etc. by gender
- Create a summary data frame to hold the results
- Optional: give the displayed data cleaner formatting
- Display the summary data frame

```
In [15]: # extracting serieses for different calculation

purchase_count=gender_group["Purchase ID"].count()
purchase_count.rename("Purchase Count", inplace=True)

average_price=round(gender_group["Price"].mean(),2)
average_price=average_price.map("${:,.2f}".format)
average_price.rename("Average Purchase Price", inplace=True)

total_value=gender_group["Price"].sum()
total_value=total_value.map("${:,.2f}".format)
total_value.rename("Total Purchase Value", inplace=True)

average_purchase_per_person=round(gender_group["Price"].sum()/gender_df["Total Count"],2)
average_purchase_per_person=average_purchase_per_person.map("${:,.2f}".format)
average_purchase_per_person.rename("Avg Total Purchase per Person", inplace=True)

#combining above serieses for printing summary table

gender_purchase_df=pd.concat([purchase_count, average_price, total_value, average_purchase_per_person], axis=1)
print(gender_purchase_df)
```

	Purchase Count	Average Purchase Price	Total Purchase Value	Avg Total Purchase per Person
Gender				
Female	113	\$3.20	\$361.94	\$4.47
Male	652	\$3.02	\$1,967.64	\$4.07
Other / Non-Disclosed	15	\$3.35	\$50.19	\$4.56

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35-39	41
40-44	18