In [16]:
```
import polars as pl
import matplotlib.pyplot as plt

# Load job applicant csv file into dataframe
job_applicants_df = pl.read_csv("Job_Applicants_by_Gender_and_Ethnicity.csv"
```

In [17]:
```
# Generate a summary of statistics
def stats_overview(job_applicants_df):
    summary_stats = job_applicants_df.select(
        [
            "Apps Received",
            "Black",
            "Hispanic",
            "Asian",
            "Caucasian",
            "American Indian/ Alaskan Native",
            "Filipino",
            "Unknown_Ethnicity",
        ]
    ).describe()
    print(summary_stats)
    return stats_overview
```

In [18]:
```
# Generate a table showing the total number of applicants by ethnicity
def total_and_eth_value(job_applicants_df):
    total_and_eth = job_applicants_df.select(
        [
            pl.sum("Apps Received").alias("Apps Received"),
            pl.sum("Black").alias("Black"),
            pl.sum("Hispanic").alias("Hispanic"),
            pl.sum("Asian").alias("Asian"),
            pl.sum("Caucasian").alias("Caucasian"),
            pl.sum("American Indian/ Alaskan Native").alias(
                "American Indian/ Alaskan Native"
            ),
            pl.sum("Filipino").alias("Filipino"),
            pl.sum("Unknown_Ethnicity").alias("Unknown_Ethnicity"),
        ]
    )

    # Add a row name for the total row
    total_and_eth = total_and_eth.with_columns(pl.lit("total").alias("statis
    total_by_value = total_and_eth.select(
        ["statistic"] + [col for col in total_and_eth.columns if col != "sta
    )
    print(total_by_value)
    return total_by_value
```

In [19]:
```
# calculate total number of applicants by ethinicity, for plotting
def ethnicity_total():
    ethnicity_total = job_applicants_df[
        [
            "Black",
            "Hispanic",
            "Asian",
            "Caucasian",
            "American Indian/ Alaskan Native",
            "Filipino",
            "Unknown_Ethnicity",
        ]
    ].sum()
    return ethnicity_total
```

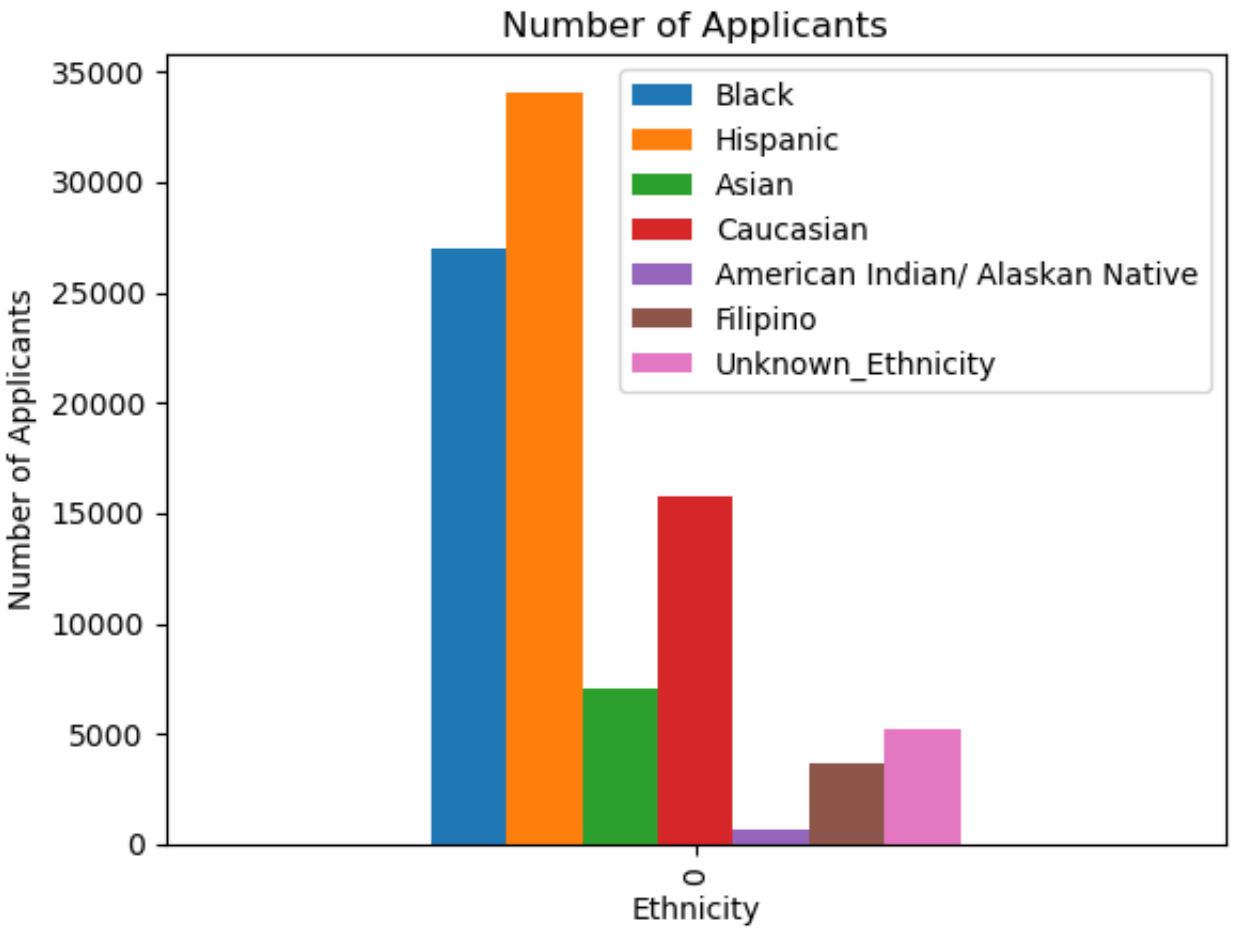
In [20]:
```
# visualize the total number of applicants by ethnicity
def eth_chart():
    eth_and_total = ethnicity_total()
    eth_and_total = eth_and_total.to_pandas()
    eth_and_total.plot(kind="bar", stacked=False, title="Number of Applicant
    plt.xlabel("Ethnicity")
    plt.ylabel("Number of Applicants")
    plt.show()
    return eth_chart


if __name__ == "__main__":
    stats_overview(job_applicants_df)
    total_and_eth_value(job_applicants_df)
    ethnicity_total()
    eth_chart()
```

shape: (9, 9)

statistic	Apps Unknown_ Received Ethnicity	Black	Hispanic	…	Caucasian	American Indian/ Alaskan Native	Filipino
str	f64	f64	f64		f64	f64	f64
count	187.0	187.0	187.0	…	187.0	187.0	187.0

```
┆ 187.0      ┆ 187.0     │
│ null_coun  ┆ 0.0       ┆ 0.0       ┆ 0.0       ┆ … ┆ 0.0       ┆ 0.0
┆ 0.0        ┆ 0.0       │
│ t          ┆           ┆           ┆           ┆   ┆           ┆
┆            ┆           │
│ mean       ┆ 499.72192 ┆ 144.52941 ┆ 182.16577 ┆ … ┆ 84.470588 ┆ 3.374332
┆ 19.631016  ┆ 27.94652  │
┆            ┆ 5         ┆ 2         ┆ 5         ┆   ┆           ┆
┆            ┆ 4         │
│ std        ┆ 2252.0442 ┆ 948.29058 ┆ 824.19337 ┆ … ┆ 320.91129 ┆ 14.938187
┆ 61.753827  ┆ 123.8977  │
┆            ┆ 25        ┆           ┆ 5         ┆   ┆ 1         ┆
┆            ┆ 52        │
│ min        ┆ 5.0       ┆ 0.0       ┆ 0.0       ┆ … ┆ 0.0       ┆ 0.0
┆ 0.0        ┆ 0.0       │
│ 25%        ┆ 38.0      ┆ 5.0       ┆ 10.0      ┆ … ┆ 9.0       ┆ 0.0
┆ 1.0        ┆ 2.0       │
│ 50%        ┆ 100.0     ┆ 14.0      ┆ 24.0      ┆ … ┆ 26.0      ┆ 1.0
┆ 5.0        ┆ 6.0       │
│ 75%        ┆ 263.0     ┆ 42.0      ┆ 97.0      ┆ … ┆ 64.0      ┆ 2.0
┆ 13.0       ┆ 20.0      │
│ max        ┆ 28230.0   ┆ 12618.0   ┆ 10214.0   ┆ … ┆ 3843.0    ┆ 153.0
┆ 740.0      ┆ 1475.0    │
└────────────┴───────────┴───────────┴───────────┴───┴───────────┴──────────
┴────────────┴───────────┘
shape: (1, 9)
┌────────────┬───────────┬─────────┬───────────┬───┬───────────┬──────────
┬────────────┬───────────┐
│ statistic  ┆ Apps      ┆ Black   ┆ Hispanic  ┆ … ┆ Caucasian ┆ American
┆ Filipino   ┆ Unknown_Et │
│ ---        ┆ Received  ┆ ---     ┆ ---       ┆   ┆ ---       ┆ Indian/
┆ ---        ┆ hnicity   │
│ str        ┆ ---       ┆ i64     ┆ i64       ┆   ┆ i64       ┆ Alaskan
┆ i64        ┆ ---       │
┆            ┆ i64       ┆         ┆           ┆   ┆           ┆ Nativ…
┆ i64        │
┆            ┆           ┆         ┆           ┆   ┆           ┆ ---
┆            │
┆            ┆           ┆         ┆           ┆   ┆           ┆ i64
┆            │
╞════════════╪═══════════╪═════════╪═══════════╪═══╪═══════════╪══════════
╪════════════╪═══════════╡
│ total      ┆ 93448     ┆ 27027   ┆ 34065     ┆ … ┆ 15796     ┆ 631
┆ 3671       ┆ 5226      │
└────────────┴───────────┴─────────┴───────────┴───┴───────────┴──────────
┴────────────┴───────────┘
```


Number of Applicants
Number of Applicants
35000
30000
25000
20000
15000
10000
5000
0
Black
Hispanic
Asian
Caucasian
American Indian/ Alaskan Native
Filipino
Unknown_Ethnicity
0
Ethnicity