```python
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
import warnings
warnings.filterwarnings("ignore", category=FutureWarning)

from sklearn.linear_model import LinearRegression
from sklearn.model_selection import train_test_split
from sklearn.metrics import mean_absolute_error, mean_squared_error, r2_score

df = pd.read_csv(r"C:\Users\Rachitha\Downloads\Housing.csv")
print("First 5 rows of the dataset:")
print(df.head())
df.replace({'yes': 1, 'no': 0}, inplace=True)
df = pd.get_dummies(df, drop_first=True)
X = df.drop('price', axis=1)
y = df['price']
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42)

model = LinearRegression()
model.fit(X_train, y_train)
y_pred = model.predict(X_test)
print("\nModel Evaluation:")
print(f"Mean Absolute Error (MAE): {mean_absolute_error(y_test, y_pred):.2f}")
print(f"Mean Squared Error (MSE): {mean_squared_error(y_test, y_pred):.2f}")
print(f"R² Score: {r2_score(y_test, y_pred):.4f}")

plt.figure(figsize=(8,6))
plt.scatter(y_test, y_pred, color='blue', alpha=0.6)
plt.plot([y.min(), y.max()], [y.min(), y.max()], 'r--')
plt.xlabel('Actual Price')
plt.ylabel('Predicted Price')
plt.title('Actual vs Predicted House Prices')
plt.grid(True)
plt.tight_layout()
plt.show()
```

```
First 5 rows of the dataset:
      price   area  bedrooms  bathrooms  stories mainroad guestroom basement  \
0  13300000   7420         4          2        3      yes        no       no
1  12250000   8960         4          4        4      yes        no       no
2  12250000   9960         3          2        2      yes        no      yes
3  12215000   7500         4          2        2      yes        no      yes
4  11410000   7420         4          1        2      yes       yes      yes

   hotwaterheating airconditioning  parking prefarea furnishingstatus
0               no             yes        2      yes        furnished
1               no             yes        3       no        furnished
2               no              no        2      yes   semi-furnished
3               no             yes        3      yes        furnished
4               no             yes        2       no        furnished

Model Evaluation:
Mean Absolute Error (MAE): 970043.40
Mean Squared Error (MSE): 1754318687330.66
R² Score: 0.6529
```

Actual vs Predicted House Prices