T-Test

Program:

```python
from scipy.stats import ttest_ind

sample1 = np.array([56, 57, 58, 54, 55, 59, 60])
sample2 = np.array([48, 49, 50, 51, 52, 53, 54])

t_stat, p_value = ttest_ind(sample1, sample2, equal_var=True)  # Assume equal variances

print(f"T-Statistic: {t_stat:.2f}")
print(f"P-Value: {p_value:.4f}")


alpha = 0.05
if p_value < alpha:
    print("Reject the null hypothesis: The means are significantly different.")
else:
    print("Fail to reject the null hypothesis: No significant difference.")
```

Output:

```
T-Statistic: 5.20
P-Value: 0.0002
Reject the null hypothesis: The means are significantly different.
```