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Statistical Methods and ML models

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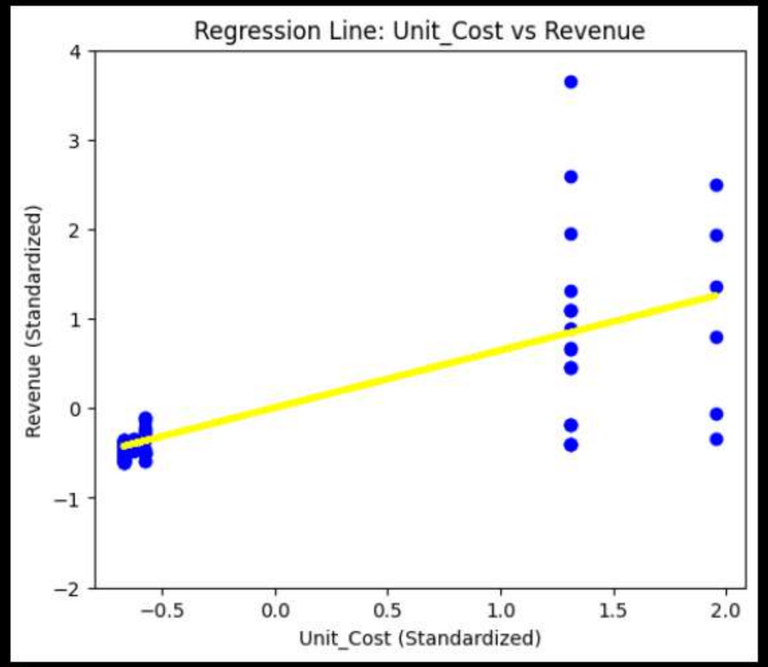
portal code > day6 > practice > Sprint6_Test_Practice3 > Sprint6_Test_Practice3.2 > Sprint6_Test_Practice3.2.ipynb > # ---------- RESIDUAL DISTRIBUTION ----------

Generate | Code | Markdown | Run All | Restart | Clear All Outputs | Jupyter Variables | Outline | .venv (Python 3.12.10)

```
# ---------- [1] PLOT REGRESSION LINE ----------
plt.figure(figsize=(6, 5))
plt.scatter(X_test, y_test, color='blue')
plt.plot(X_test, y_pred, color='yellow', linewidth=3)
plt.title("Regression Line: Unit_Cost vs Revenue")
plt.xlabel("Unit_Cost (Standardized)")
plt.ylabel("Revenue (Standardized)")
plt.ylim(-2, 4)
plt.show()
```

[9] ✓ 0.1s Python




```
# ---------- [2] CHECK LINEARITY ----------
```

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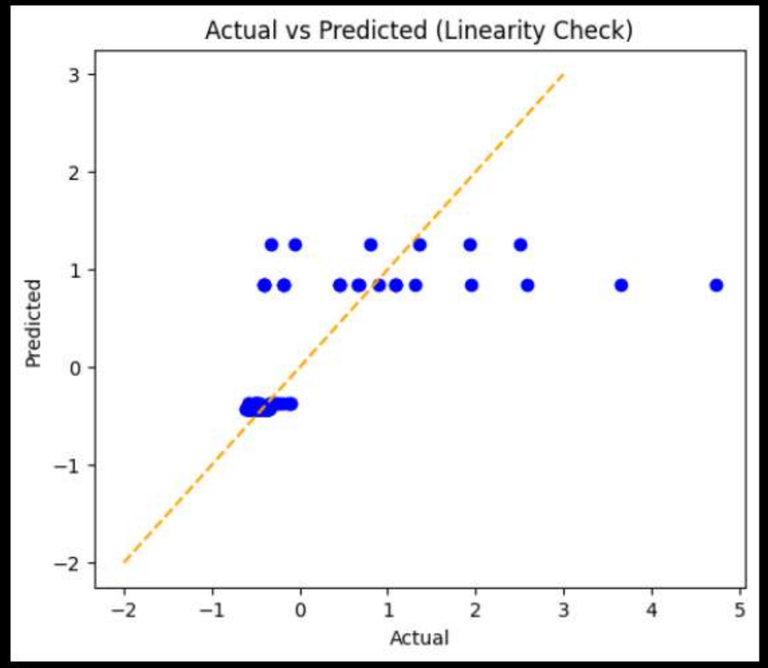
```
# ---------- 2 CHECK LINEARITY ----------
plt.figure(figsize=(6, 5))
plt.scatter(y_test, y_pred, color='blue')
plt.plot([-2, 3], [-2, 3], color='orange', linestyle='--')  # 45 degree perfect line
plt.title("Actual vs Predicted (Linearity Check)")
plt.xlabel("Actual")
plt.ylabel("Predicted")
plt.show()
```

[10] ✓ 0.1s Python



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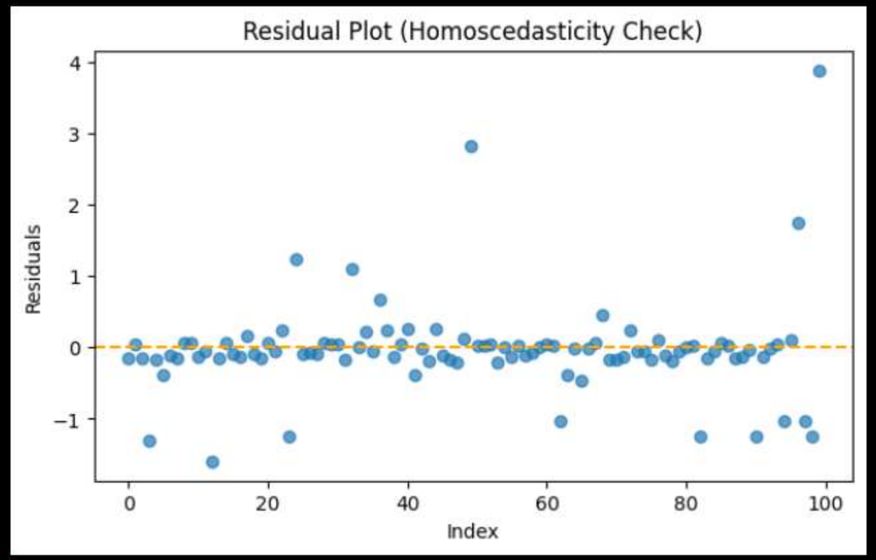
```
# ---------- 3 CHECK HOMOSCEDASTICITY ----------
plt.figure(figsize=(7, 4))
plt.scatter(range(len(residuals)), residuals, alpha=0.7)
plt.axhline(y=0, color='orange', linestyle='--')
plt.title("Residual Plot (Homoscedasticity Check)")
plt.xlabel("Index")
plt.ylabel("Residuals")
```

[11] ✓ 0.1s Python

```
Text(0, 0.5, 'Residuals')
```




```
# remove top + right border to copy your style
plt.gca().spines['right'].set_visible(False)
```

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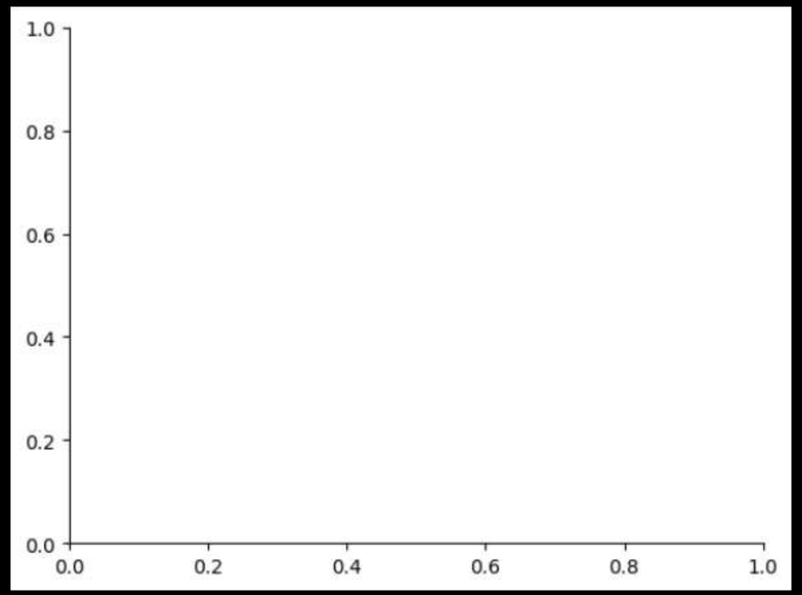
```
# remove top + right border to copy your style
plt.gca().spines['right'].set_visible(False)
plt.gca().spines['top'].set_visible(False)
plt.show()
```

[12] ✓ 0.0s Python




```
# ---------- RESIDUAL DISTRIBUTION ----------
plt.figure(figsize=(6, 4))
plt.hist(residuals, bins=15, edgecolor='black', alpha=0.7)
plt.title("Errors Distribution")
plt.xlabel("Error Value")
plt.ylabel("Probability Density")
```

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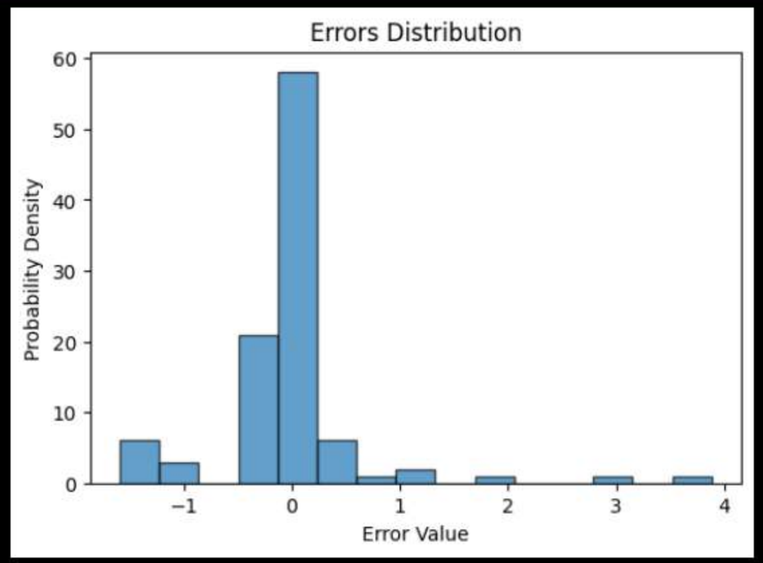
plt.xlabel("Error Value")
plt.ylabel("Probability Density")
plt.show()
```

[13] ✓ 0.1s Python



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