# GLAB 330.2.2 - Standard Deviation

Standard deviation (σ) shows how much the data points differ from the average (mean). A low standard deviation means the data points are close to the average.  
  
Dataset:  
Books read by 8 students in a month:  
2, 4, 4, 4, 5, 5, 7, 9  
  
Step 1: Calculate the Mean  
Sum: 2 + 4 + 4 + 4 + 5 + 5 + 7 + 9 = 40  
Mean = 40 ÷ 8 = 5  
  
Step 2: Find Squared Differences from the Mean  
Value | Difference | Squared  
-----------------------------  
2 | -3 | 9  
4 | -1 | 1  
4 | -1 | 1  
4 | -1 | 1  
5 | 0 | 0  
5 | 0 | 0  
7 | 2 | 4  
9 | 4 | 16  
Total of squares = 32  
  
Step 3: Find Variance  
Variance = 32 ÷ 8 = 4  
  
Step 4: Find Standard Deviation  
Standard Deviation = √4 = 2  
  
Final Answer:  
Standard Deviation = 2  
This means each student read about 2 books more or less than the average of 5 books.

# Standard Deviation Lab - Git Command Table Guide

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| --- | --- | --- | --- |
| Step | Action | Command | File/Folder Name |
| 1 | Create a folder | mkdir standard-deviation-lab | standard-deviation-lab |
| 2 | Move into the folder | cd standard-deviation-lab | standard-deviation-lab |
| 3 | Copy or move lab file into folder | (Drag file or use File Explorer) | Standard\_Deviation\_Lab.docx |
| 4 | Initialize Git repo | git init | .git |
| 5 | Check status | git status |  |
| 6 | Add file to staging | git add Standard\_Deviation\_Lab.docx | Standard\_Deviation\_Lab.docx |
| 7 | Commit file | git commit -m "Add lab file" |  |
| 8 | Create repo on GitHub (online) | (no command - go to github.com) | standard-deviation-lab |
| 9 | Connect local to GitHub | git remote add origin https://github.com/yourusername/standard-deviation-lab.git |  |
| 10 | Rename main branch | git branch -M main |  |
| 11 | Push to GitHub | git push -u origin main |  |

**Step-by-Step GitHub Submission Using nano (Standard Deviation Lab)**

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| --- | --- | --- |
| Step | Action | Command / Details |
| 1 | Create a folder and go into it | mkdir standard-deviation-lab cd standard-deviation-lab |
| 2 | Create README file using nano | nano README.md |
| 3 | Type/paste your explanation in nano and save | # Standard Deviation Lab  This lab shows how to calculate standard deviation... [Full explanation goes here]  To save: Ctrl + X → Y → Enter |
| 4 | Initialize Git repo | git init |
| 5 | Add the README file | git add README.md |
| 6 | Commit your file | git commit -m "Add standard deviation lab explanation" |
| 7 | Create a new repo on GitHub | Go to https://github.com → Click "New" → Name it standard-deviation-lab DO NOT check "Add README" |
| 8 | Connect your local repo to GitHub | git remote add origin https://github.com/yourusername/standard-deviation-lab.git |
| 9 | Set branch and push to GitHub | git branch -M main git push -u origin main |
| 10 | Submit your GitHub link on Canvas | Go to Canvas → Assignment → "Start Assignment" → Paste your GitHub repo link → Submit |