The Power of Google docs for Effective Online Course Management

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Google Accounts

Anyone can create a free Google account (by using any email address and adding a password) at docs.google.com

Document types

- Documents (word processing)
- Spreadsheets
- Slide Presentations
- Forms
- File storage (any file type can be uploaded, but there are some size limits)

Users can choose the format for file downloads

Easy Organization

- Folder system
- Fully searchable
- Sort by date or file name
- Revision history

Tool box

- Standard formatting tools
- Equation Editor
- Supports images, video
- Drawing tools

Advantages of Cloud Computing

- Ease of editing
- Easy to link to course pages
- Always available
- Common platform - no file conversions
- Shared files - eliminates email attachments
- Can grade work by inserting comments in the existing file

Document Examples

Documents

A document shared for viewing can be an assignment file:

IA-Project3-Summary

IA-Project3-Questions

Spreadsheets

A spreadsheet can be given as a template for calculations:

Inverse Matrices

A document or spreadsheet can be shared with an individual student with grade information:

IA-MyGrades-Sample

Folder Examples

A folder can be used to share files between a student and an instructor:

GD-SampleStudent

A folder can house all materials for a course project:

Sample Project Folder

Documents can belong to multiple folders:

Late Work Policy

Integrate file links into websites

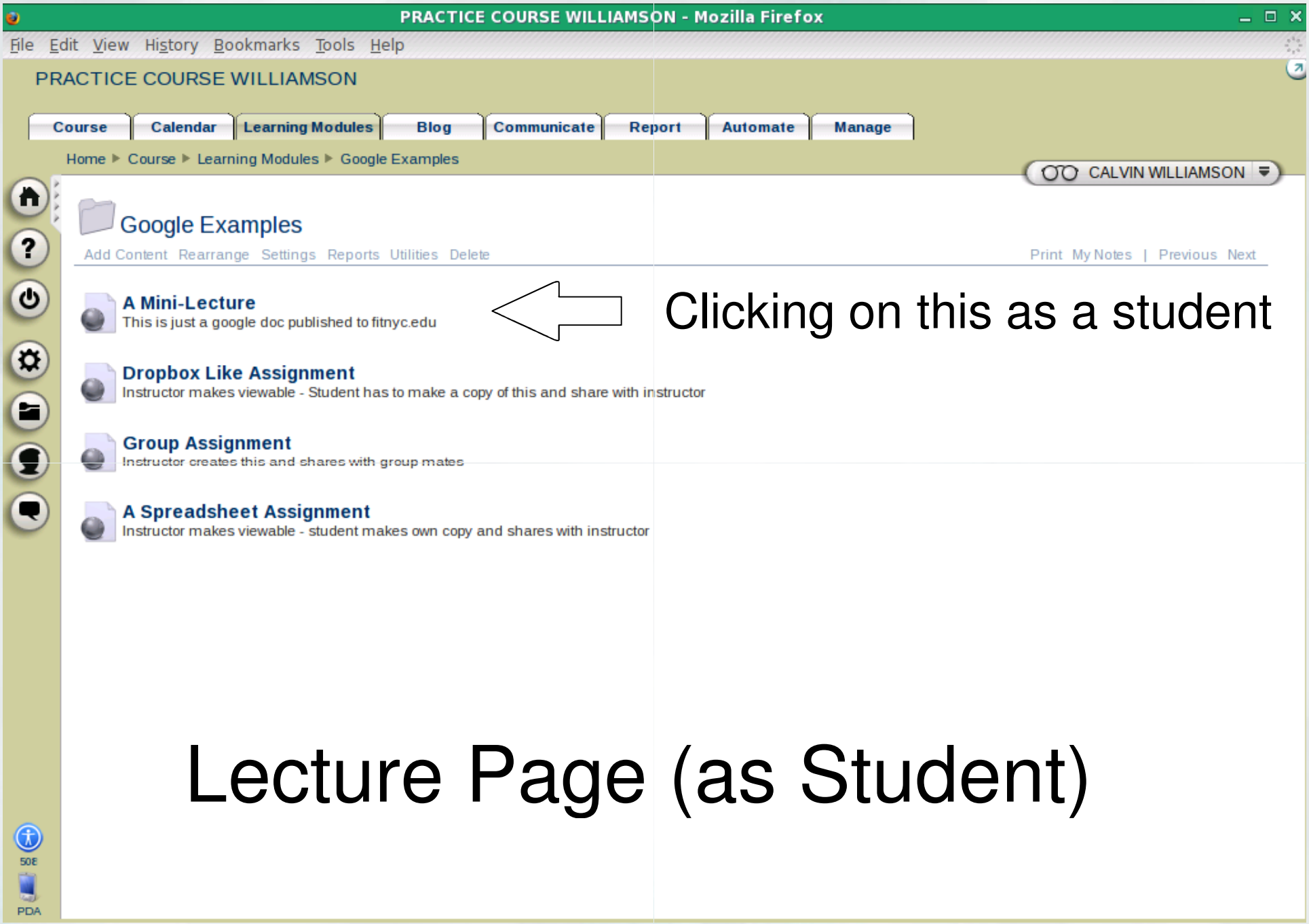
Compatible with any
course management system

Google Sites: Intermediate Algebra

Course Management Systems and Google

You can use Google:

- to publish lecture pages, presentations, spreadsheet data to your LMS course
- instead of assignment dropbox
- instead of group discussions
- instead of gradebook



Lecture Page (as Student)

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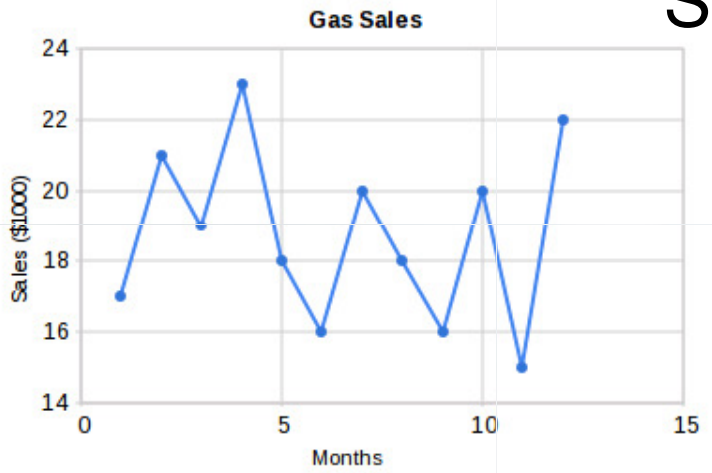
Time Series

Example:

months	Gas sales (observed)
1	17
2	21
3	19
4	23
5	18
6	16
7	20
8	18
9	16
10	20
11	15
12	22



Shows it as a web page

Here the data is given in

Google Docs -- Web word processing, presentations and spreadsheets.

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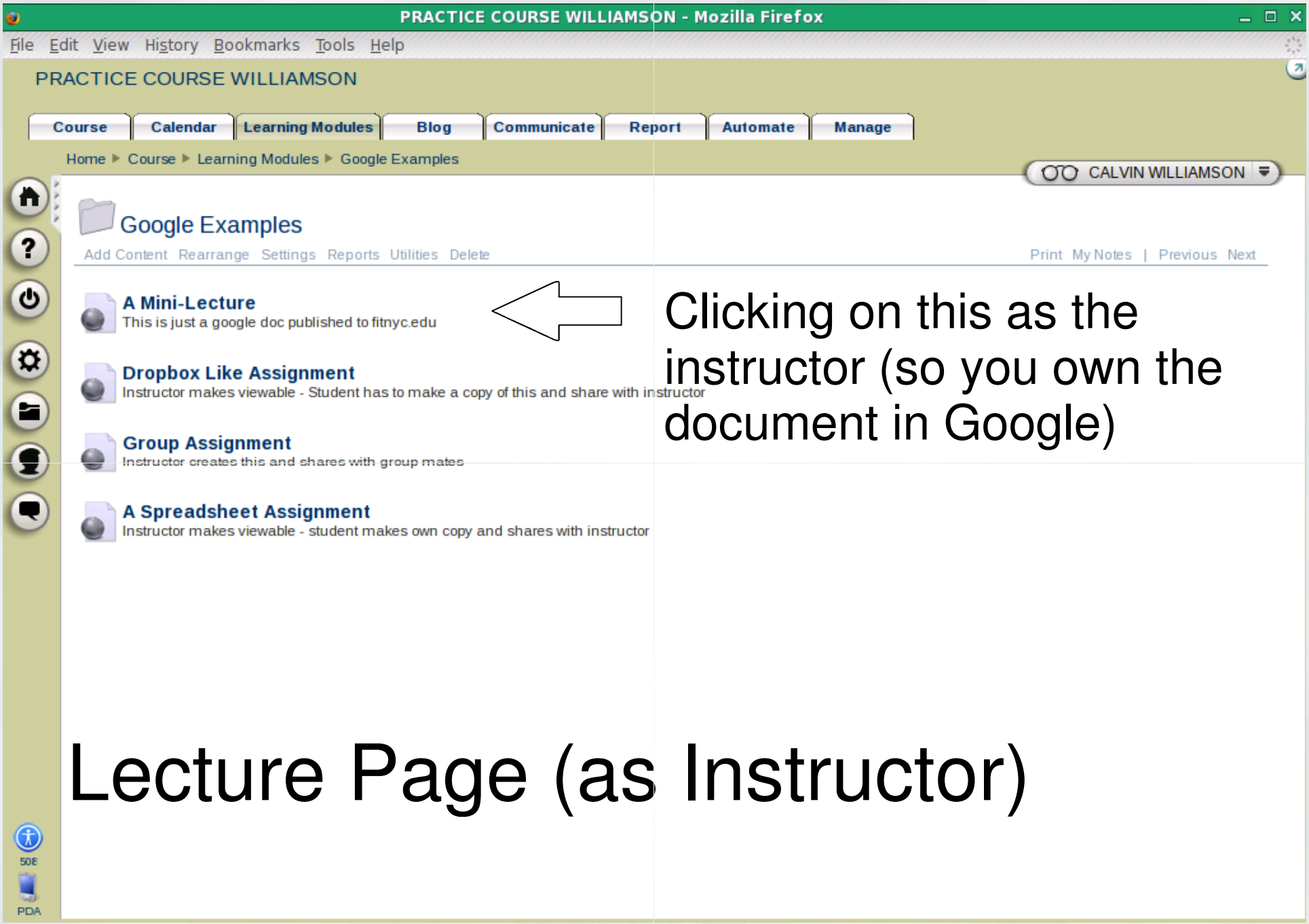
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Dropbox Like Assignment
Instructor makes viewable - Student has to make a copy of this and share with instructor
Group Assignment
Instructor creates this and shares with group mates
A Spreadsheet Assignment
Instructor makes viewable - student makes own copy and shares with instructor
Clicking on this as the instructor (so you own the document in Google)
Lecture Page (as Instructor)
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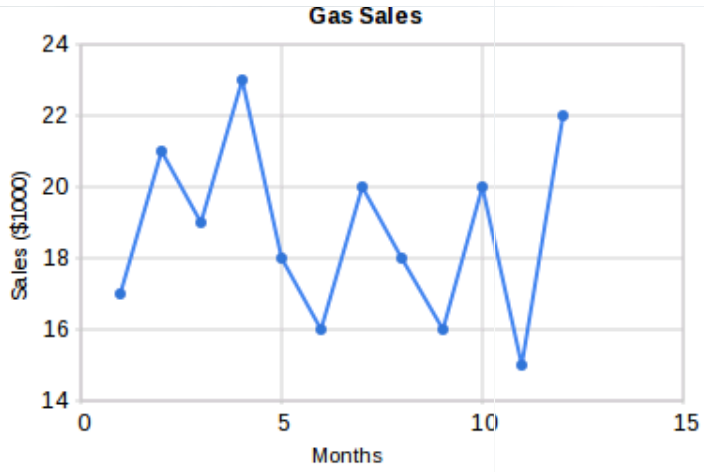
Styles | Verdana | 10pt | B I U | Link

Time Series

Example:

Shows it in edit mode

months	Gas sales (observed)
1	17
2	21
3	19
4	23
5	18
6	16
7	20
8	18
9	16
10	20
11	15
12	22



Here the data is given in

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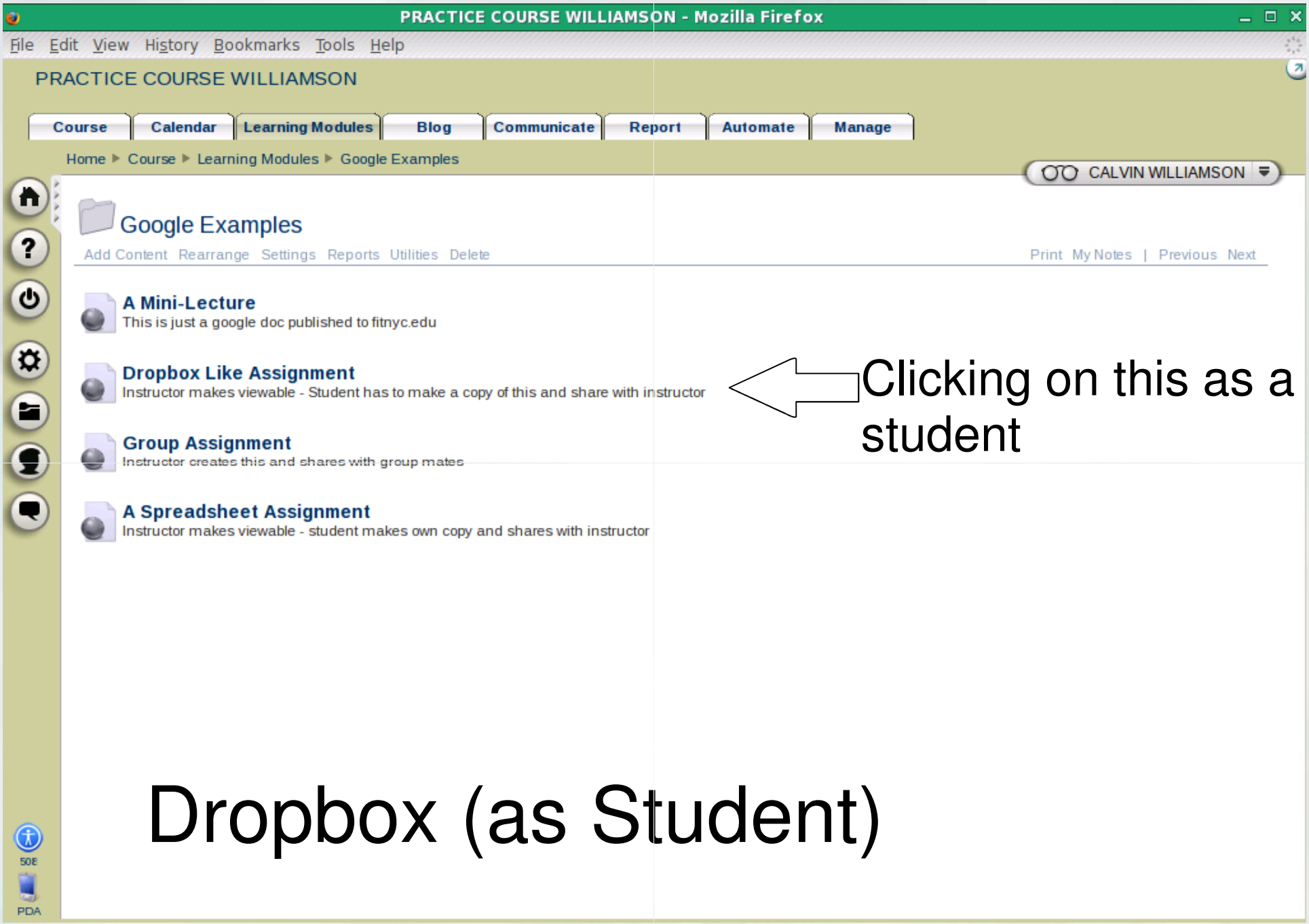

Dropbox (as Student)

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Math Equations Assignment

File View Help

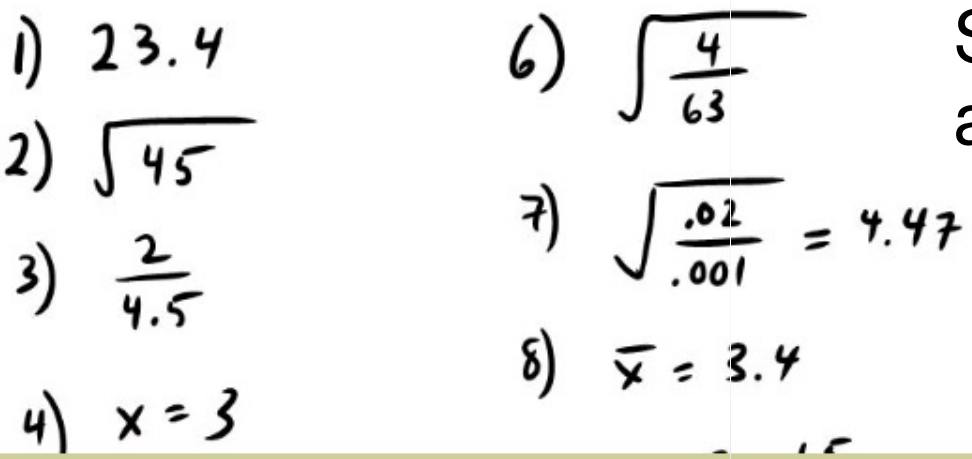
Math Equations Assignment

Make a copy of this document using *File>Save as New Copy* and rename it as

Math Equations Assignment Lastname

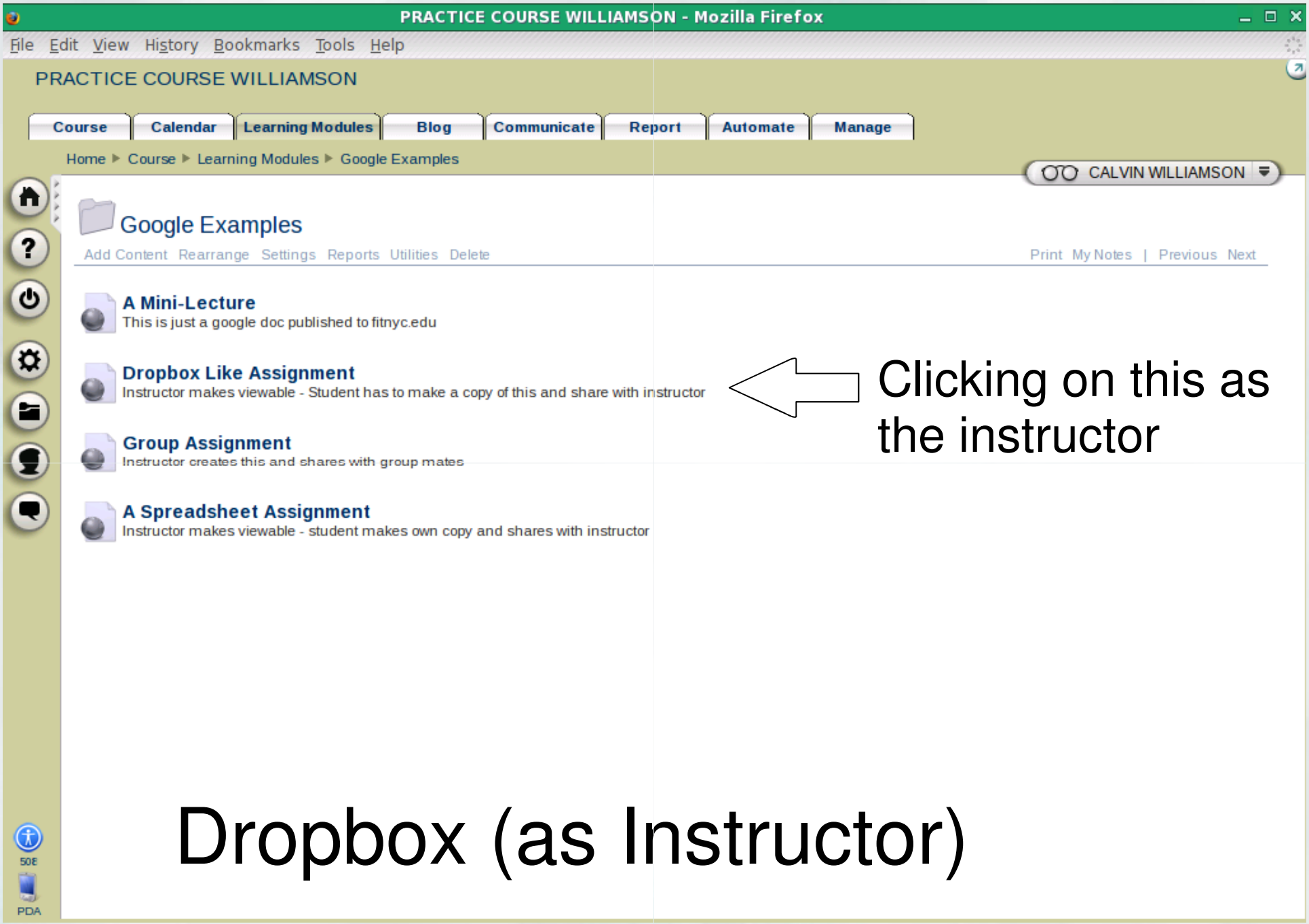
Share the document with me so I can help you and grade it.

Here is the assignment: The following are some handwritten expressions and equations



Shows it as a view only Google doc

Student makes a copy and shares with you



Dropbox (as Instructor)

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Math Equations Assignment

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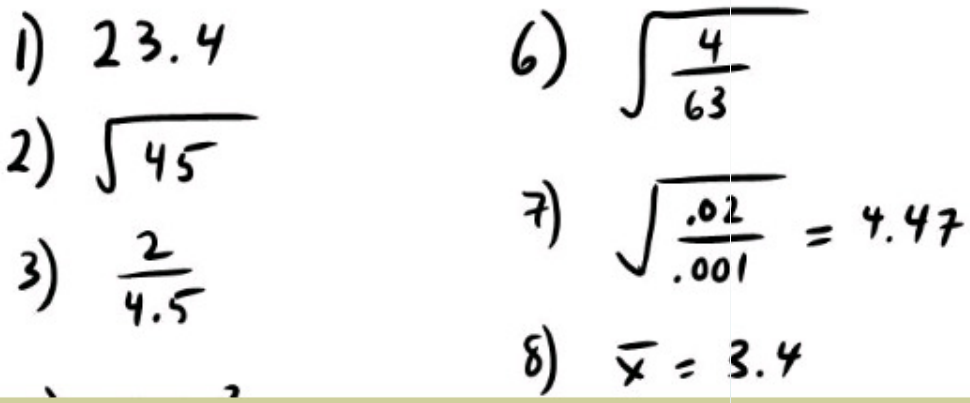

Shows it in edit mode

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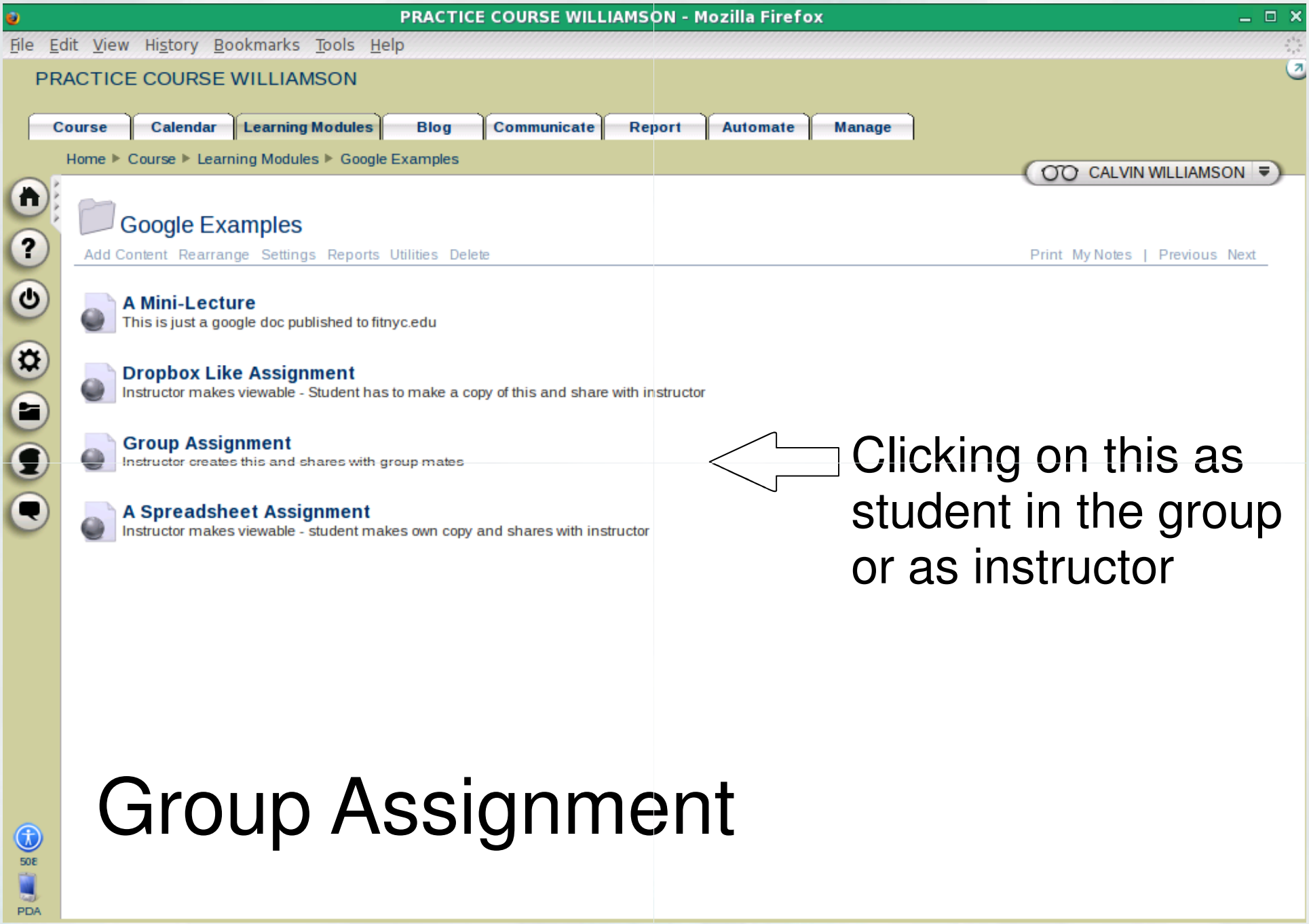
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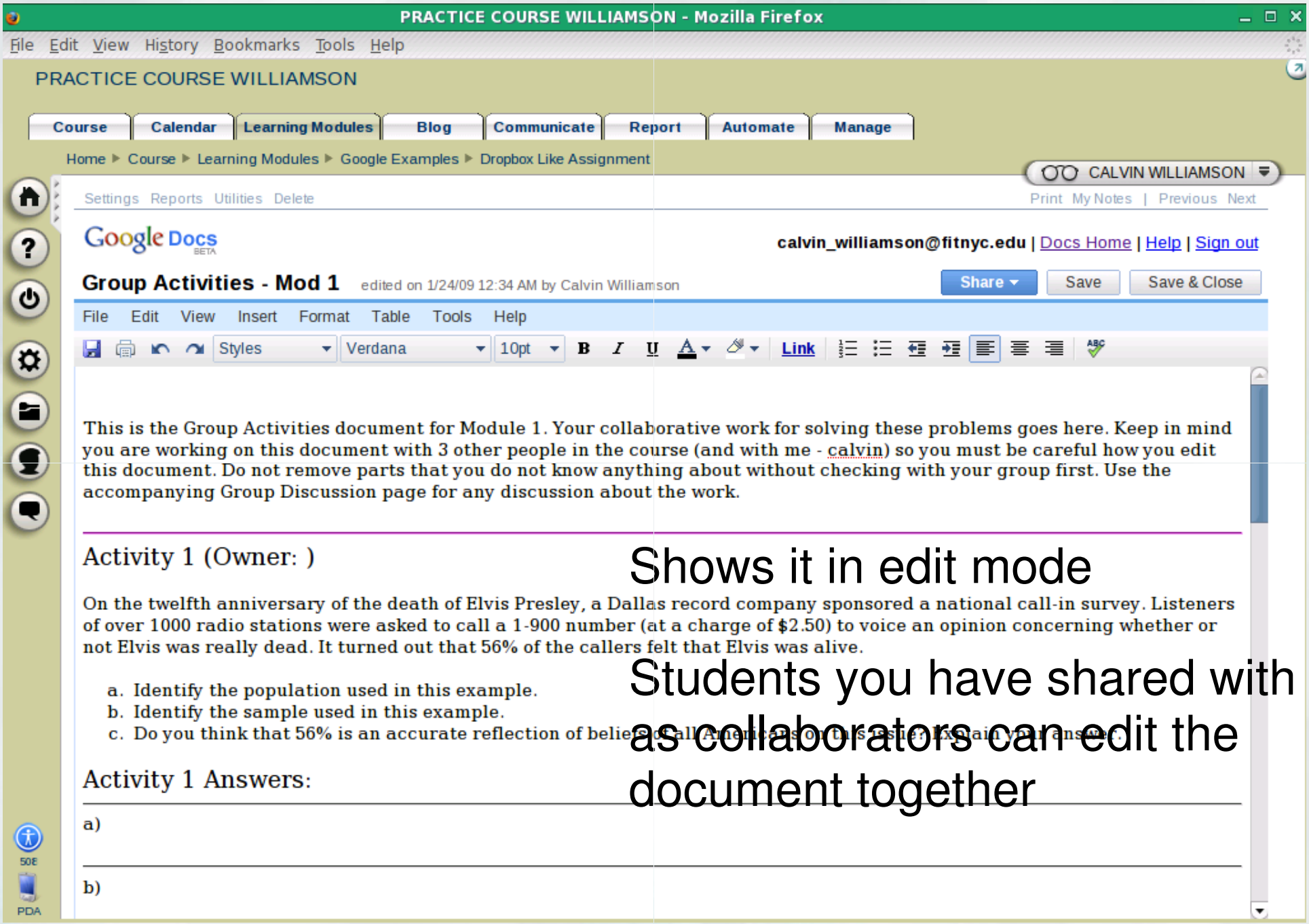
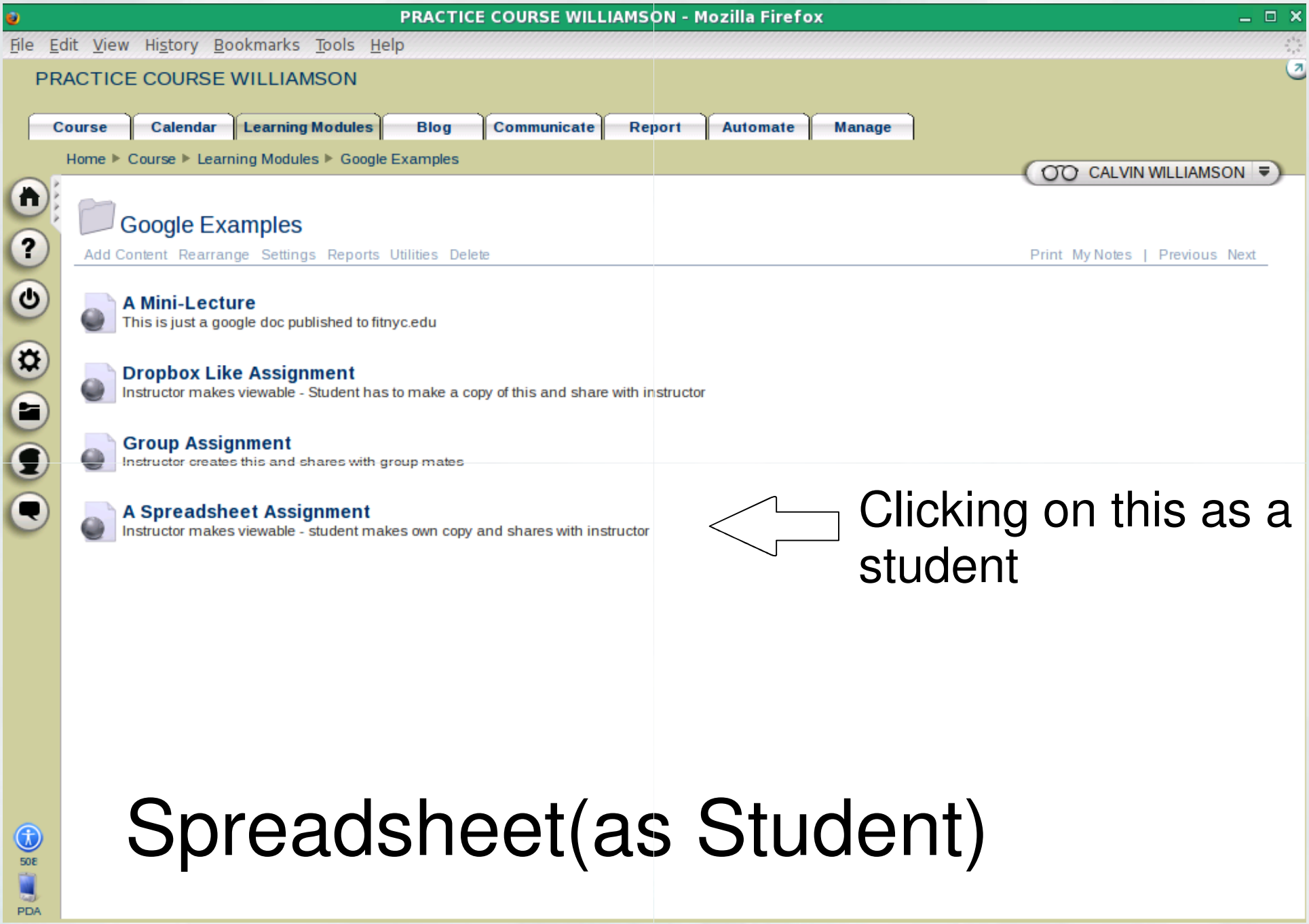
Group Assignment
Instructor creates this and shares with group mates
A Spreadsheet Assignment
Instructor makes viewable - student makes own copy and shares with instructor
Clicking on this as student in the group or as instructor
Group Assignment
PDA

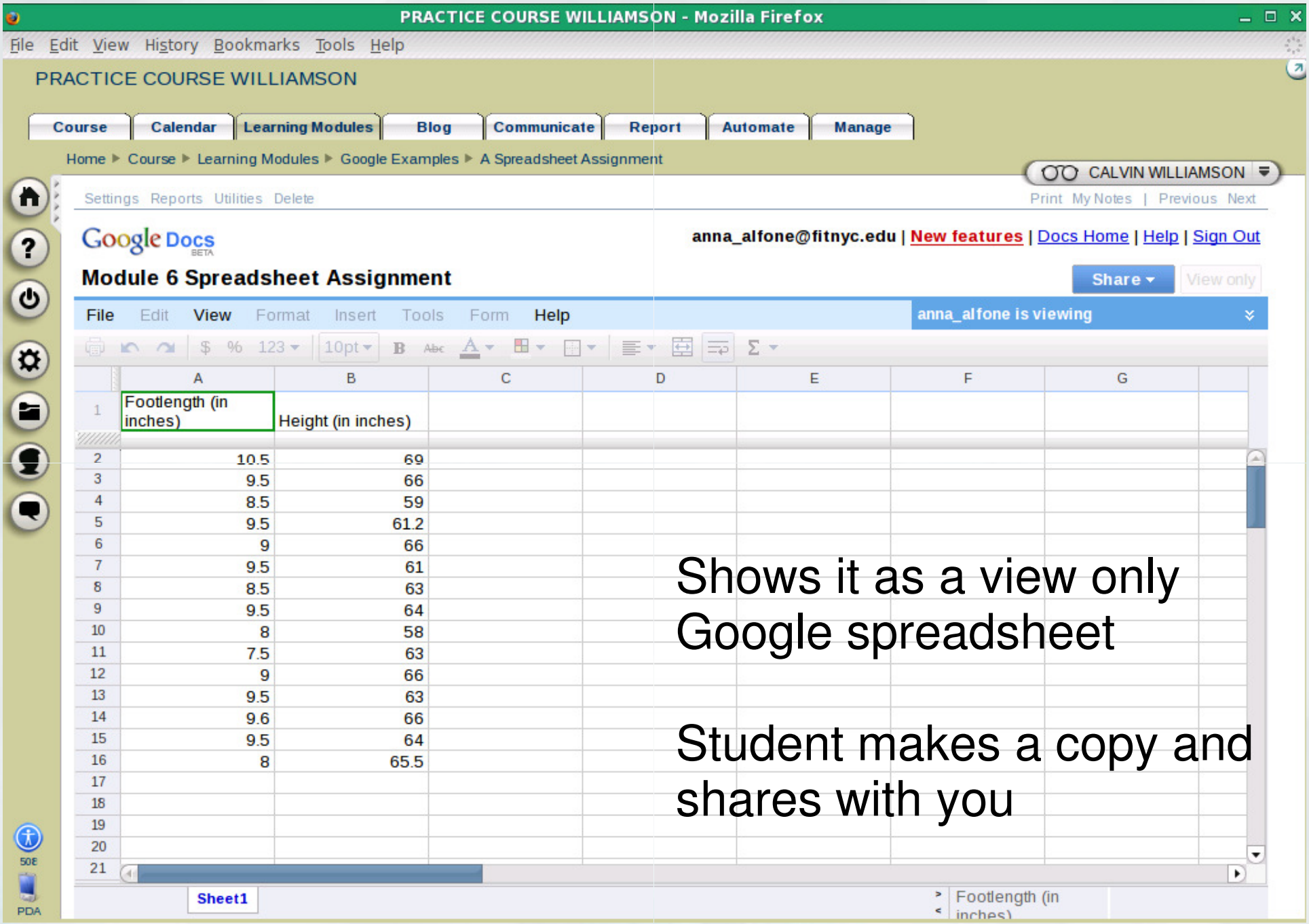


Shows it in edit mode

Students you have shared with as collaborators can edit the document together



Spreadsheet(as Student)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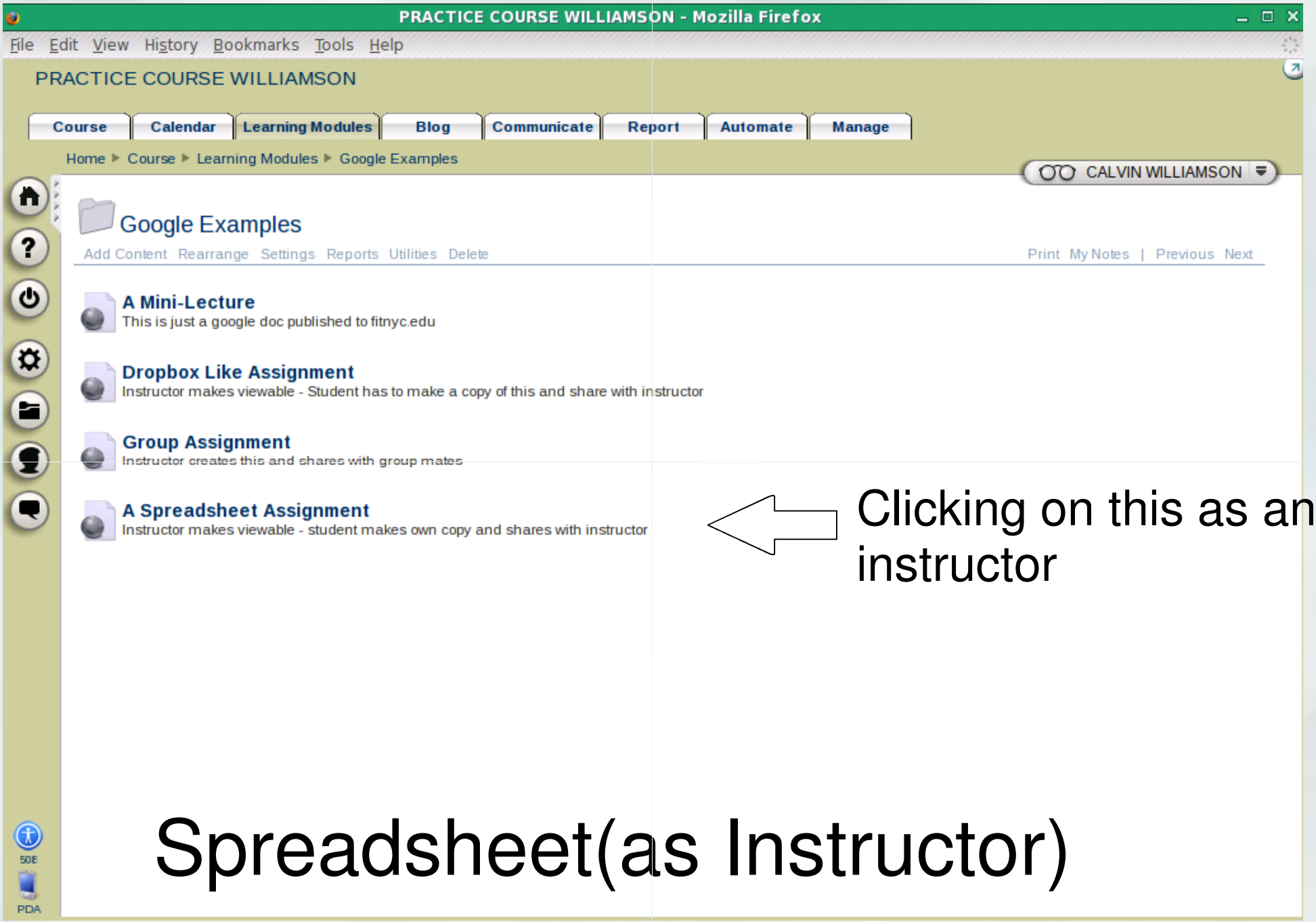
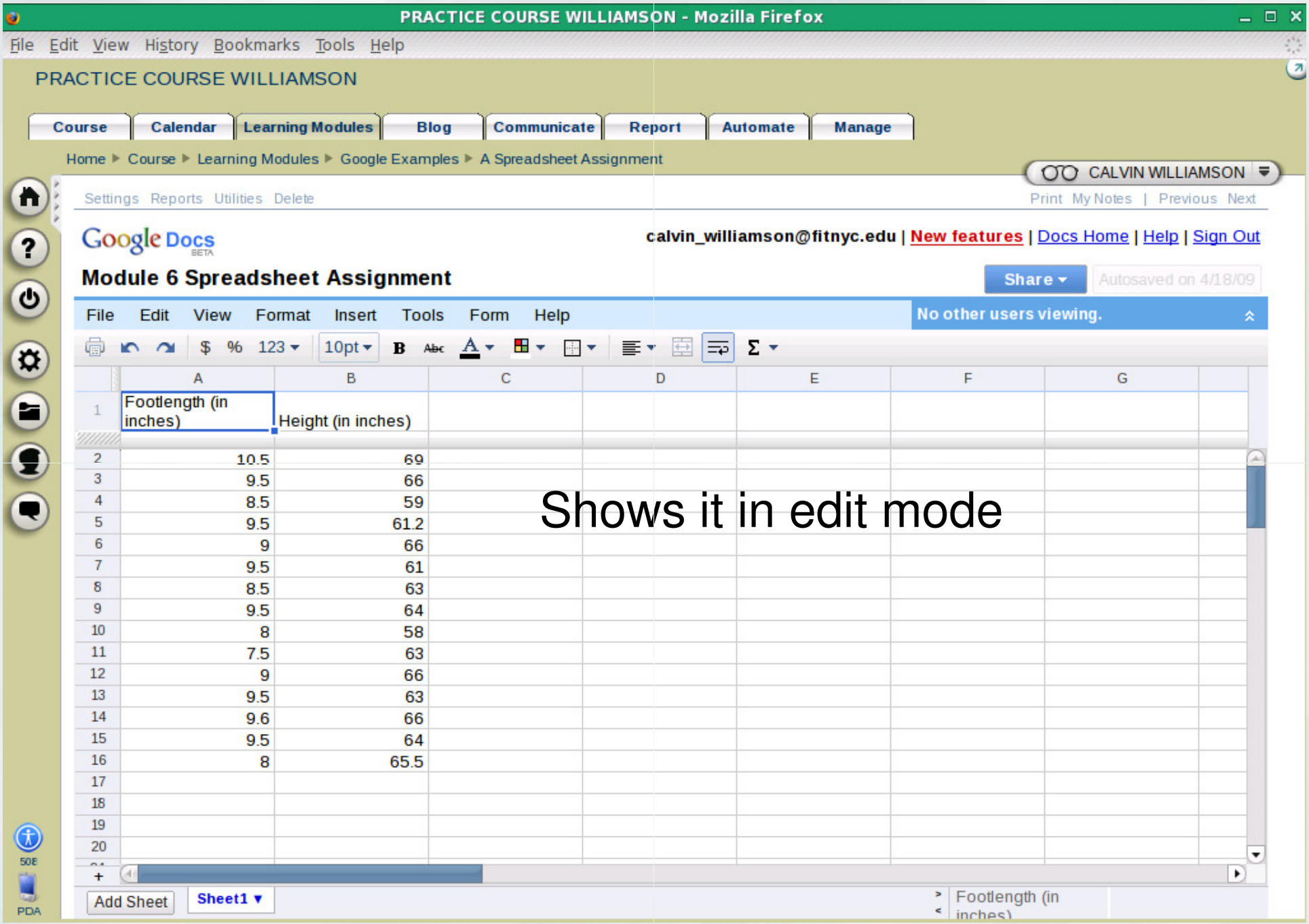
anna_alfone is viewing
Footlength (in inches)
Height (in inches)
10.5 69
9.5 66
8.5 59
9.5 61.2
9 66
9.5 61
8.5 63
9.5 64
8 58
7.5 63
9 66
9.5 63
9.6 66
9.5 64
8 65.5
Sheet1
Footlength (in inches)
Shows it as a view only Google spreadsheet
Student makes a copy and shares with you



Spreadsheet(as Instructor)



	A	B
1	Footlength (in inches)	Height (in inches)
2	10.5	69
3	9.5	66
4	8.5	59
5	9.5	61.2
6	9	66
7	9.5	61
8	8.5	63
9	9.5	64
10	8	58
11	7.5	63
12	9	66
13	9.5	63
14	9.6	66
15	9.5	64
16	8	65.5
17		
18		
19		
20		

Group Assignments and Google

You create the document and make the group members collaborators

- students can edit the document together
- you can see the group work at any stage
- in case a student deletes everything there is a revision history

Group1 Discussion - Mod 5 - Google Docs - Mozilla Firefox

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Group4 A... | Group4 Di... | Group5 A... | Group5 Di... | LaTeX Ima...

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Group1 Discussion - Mod 5 saved on 4/17/09 7:08 AM by beth stokes

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Styles | Verdana | B I U A | Link

Activity 16-6 Discussion --- Presidential Votes (Owner: Beth Stokes)

April 2, 2009 9:30 AM by Beth Stokes

I'm not quite sure if I did the standard of deviation right, so if it's wrong please let me know so I can fix it. Thanks!

4/5/09 12:04 AM by Calvin Williamson

The standard deviations do look okay... can we see the calculations? For example:
Here is Clintons:

$$\text{std dev} = \sqrt{\frac{\theta(1-\theta)}{n}} = \sqrt{\frac{.49(1-.49)}{100}} = .04999$$

Use the equation editor given in Angel.

Now for part d) there is something wrong.... 95% of the data is between plus and minus 2 standard deviations.

April 8, 2009 7:58 AM by Beth Stokes

Thanks for the help Prof!

Also editing now: **amanda shay**

Activity 16-6 --- Presidential Votes (Owner: Beth Stokes)

This is from the textbook, Workshop Statistics p 350

You will need the textbook to do it.

Activity 16-6 Answers:

---

a) No, it would not necessarily be the case due to sampling variability.

---

b) No, you would not find the same sample proportion of Clinton supporters each time, again due to variability.

---

c) $$\text{std dev} = \sqrt{\frac{\theta(1-\theta)}{n}} = \sqrt{\frac{.49(1-.49)}{100}} = .0499$$

The standard of deviation would be .0499

---

d) About 95% of the samples would be found between plus and minus 2 standard deviations (.3902 to .5898)

---

e) $$\text{std dev} = \sqrt{\frac{\theta(1-\theta)}{n}} = \sqrt{\frac{.41(1-.41)}{100}} = .0492$$

Google Docs and Equations

- Equation Editor uses Latex expressions
- Provide simple examples students can use
- Students copy-and-paste and edit further to customize
- Students can copy-and-paste from other students examples as well
- Uses Google Chart API for producing equation images

MA222 OL1 STATISTICAL ANALYSIS FALL2010

Course | Course Schedule | Learning Modules | Equation Examples | Ask A Question | Blog | Automate | Manage

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- Select the equation that is closest you what you want (mousedown on one side of it and drag across it)
- Then copy it using the keyboard (CTL-C on a pc)
- Go to the google document where you want your equation that pasted in (CTL-V on the pc)
- Once it is in that document, select it and choose Edit to make changes

OR

- Drag and drop it to the tab (in Firefox) where your google document is open.
- Once it is in that document, select it and choose Edit to make changes

Examples (Choose the one that is closest to what you want):

Module 5 examples (Confidence Intervals and Sample Proportions):

$\widehat{p}$	θ	$z = \frac{\text{data value} - \text{mean}}{\text{std dev}}$
$\widehat{p} = .22$	$\theta = .2$	$\text{std dev} = \sqrt{\frac{\theta(1-\theta)}{n}} = \sqrt{\frac{.2(1-.2)}{100}} = .04$
$\widehat{p} = \frac{45}{65}$	$\theta = .75$	$z = \frac{\text{data value} - \text{mean}}{\text{std dev}} = \frac{\widehat{p} - \theta}{\text{std dev}} = \frac{.22 - .2}{.04} = .5$
$\widehat{p} \pm E$	$\widehat{p} - E$	$\sqrt{\widehat{p}(1-\widehat{p})}$

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PDA

Provide examples students can choose from

They copy it

Google docs Group1 Activities - Mod 5 Private to me + 4 more Saved 11/10/10 12:20 PM by Calvin Williamson Saved Share

File Edit View Insert Format Table Tools Help

Styles Verdana 10pt **B** *I* U Link

This is from the textbook, Workshop Statistics p 386

You will need the textbook to do it.

YOU ONLY NEED TO DO parts a, b, c, and d

Activity 18-6 Answers:

(grade: /2 points)

Paste it somewhere in the assignment

---

a) According to the CLT, the sample proportion should have a normal distribution with a mean equal to .45 and a standard of deviation equal to .06

$$z = \frac{\text{data value} - \text{mean}}{\text{std dev}} = \frac{\widehat{p} - \theta}{\text{std dev}} = \frac{.22 - .2}{.04} = .5$$

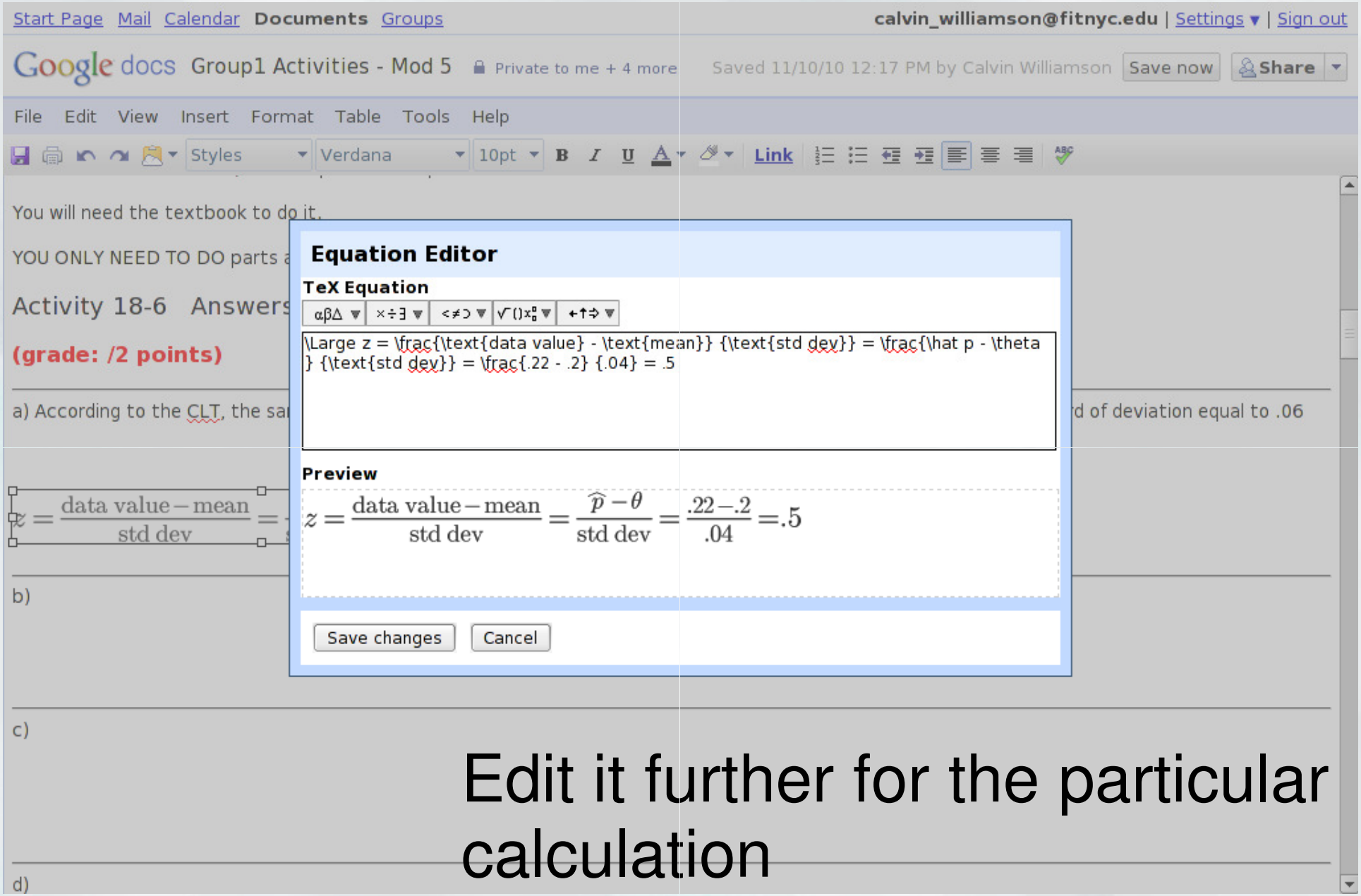
Equation: Edit - Remove

---

b)

---

c)



Edit it further for the particular calculation

Links for Group Assignments:

Group1 Activities - Mod 5 - Google Docs
Group1 Discussion - Mod 5 - Google Docs
Group2 Activities - Mod 5 - Google Docs
Group2 Discussion - Mod 5 - Google Docs
Group Solution - Mod 5 - Google Docs

Link for Equation Examples:
Equation Examples

Link for Mathplosion:
http://mathplosion.com