Getting Started With AutoCAD

Suitable for Grades 6-12

In This Tutorial You Will Learn…

- What AutoCAD is and what it is used for
- How to download and install AutoCAD on your computer
- How to set up your workspace on AutoCAD
- The layout of the workspace and different features in it

What is AutoCAD?

AutoCAD is a digital drafting and design software. AutoCAD is used by many professionals such as Engineers (Civil, Geological, Mechanical) and Architects.

What can we create with AutoCAD?

AutoCAD can be used to create 2D or 3D designs and drafts. Engineers and Architects use AutoCAD to create floor plans for buildings, design mechanical components such as gears, design parking lots, highways, roundabouts and much more! When AutoCAD is combined with Civil3D, Engineers can also create 2D or 3D topographical maps using data points.

Example of an AutoCAD Drawing
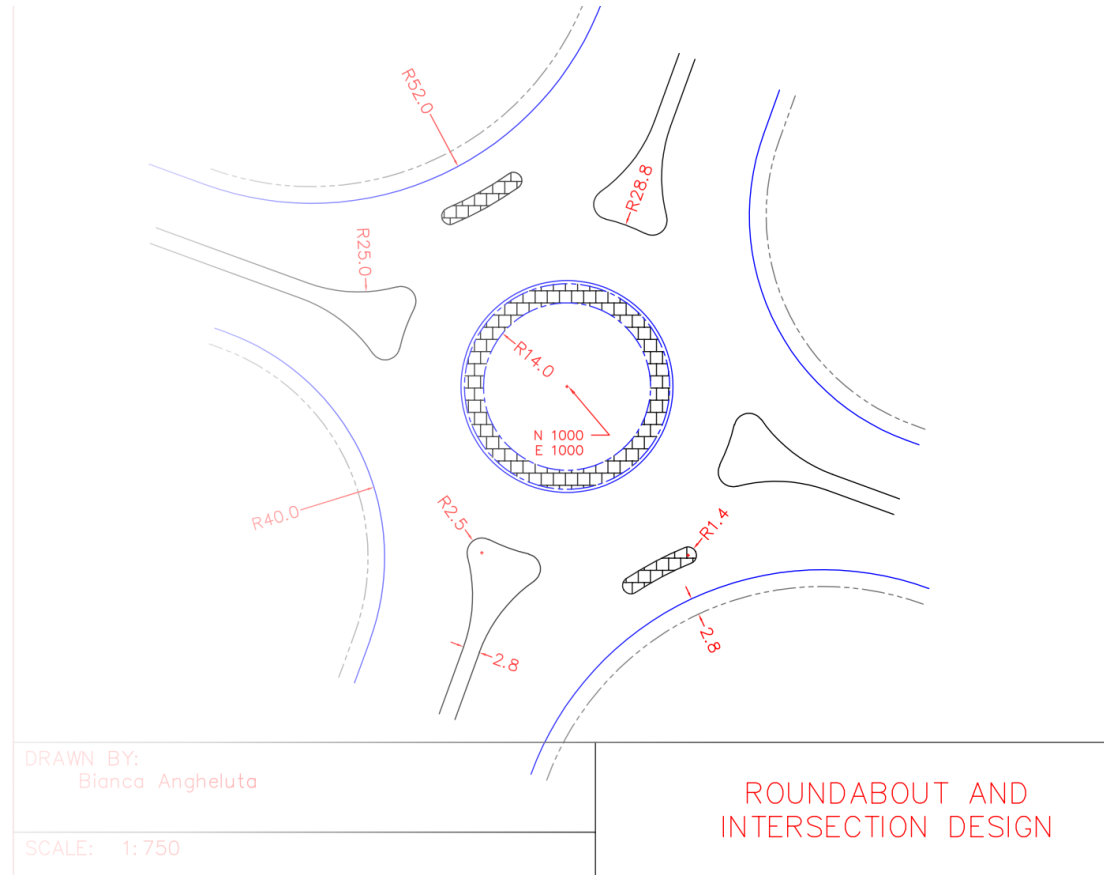
Downloading and Installing AutoCAD

- AutoCAD must be installed on a computer
- Go to the following website to download: https://www.autodesk.com/education/free-software/autocad
- AutoCAD is available for free download to students (high school and university) and educators
- Elementary students can try a free 30-day trial of AutoCAD or can use the account of an older sibling
- AutoCAD works best on Windows, but a version compatible with MacOS is also available

Downloading and Installing AutoCAD (Windows)

- Make sure you have 3.55 GB of available space on your computer to download AutoCAD
- Click on either "create account" or "get the free trial" to get started
- After creating an account, select AutoCAD 2020
- Click on DOWNLOAD
- Follow the prompts to download and install AutoCAD on your computer
- "AutoCAD 2020" and "Autodesk Desktop App" will appear on your desktop
- Open AutoCAD 2020 and proceed to Slide 11 to set up your workspace

Downloading and Installing AutoCAD (MAC OS)

- Make sure you have at least 2 GB of available space on your computer to download AutoCAD
- After creating an account, select the version (AutoCAD 2020) and click BROWSER DOWNLOAD to install the installer
- Open the installer and follow the prompts to download and install AutoCAD on your computer
- Make sure to download AutoCAD 2020
- Go to the next slide for further instructions on how to install AutoCAD on a Mac
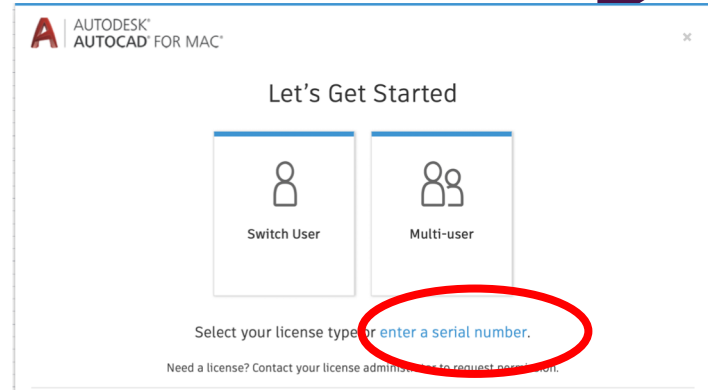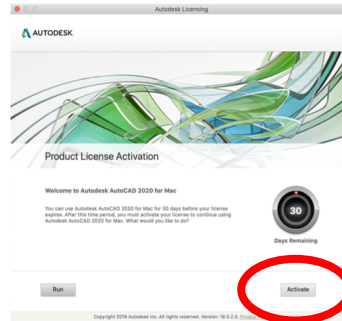
Activating License on MacOS

After installer has finished, the "Let's Get Started" screen will show up.

If you have a license:

1) Click "enter a serial number"
2) Click "Activate"
3) Enter the serial number for license, the serial number should be emailed to you by AutoCAD

If using the free-trial:

Go to next page.

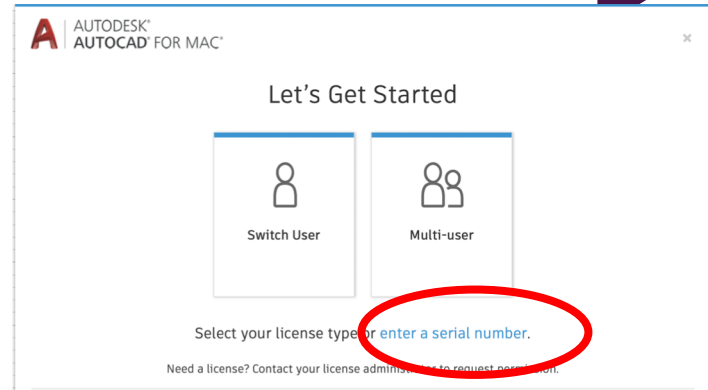# Activating Free Trial on MacOS + Creating a New Drawing

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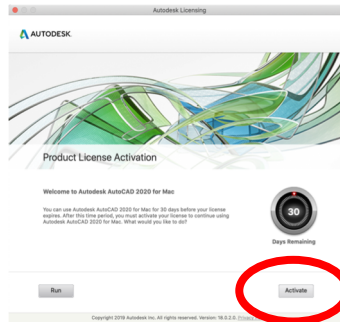# Activating Free Trial on MacOS + Creating a New Drawing

If using the 30-day free trial:

- Log into Single-User with your account.
- After logging in, the "Thank you for using your trial" screen will pop up. Simply exit out of it.

Create New Drawing

After exiting, this window should pop up. This is the window that opens at startup of AutoCAD on Mac OS. To get started on a new drawing:

1. Ensure you're in the 'Create' Tab
2. Uncheck 'display at startup'
3. Press 'Open' at bottom of window
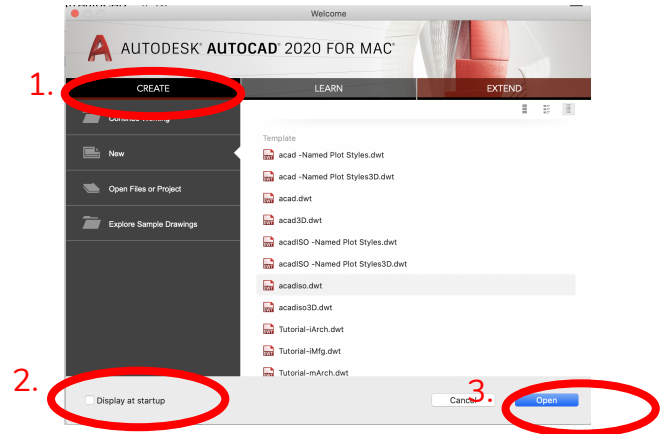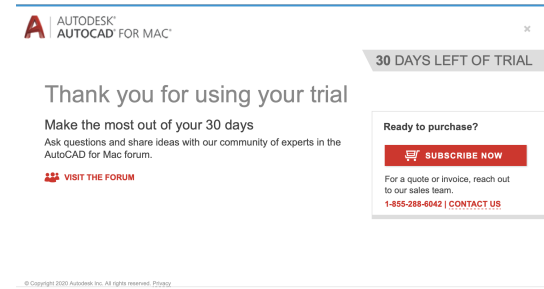
Setting Up Your Workspace

- AutoCAD is a complex software application that can be used for many different types of projects

- For a beginner, some of these features can be confusing, so we want to change a few of the settings in our workspace to make it easier to use

- **Please note** that if you are using a Mac computer AutoCAD might look a little different to the slides you are about to see, but all functions remain the same

- Purple text boxes will highlight the differences when using Mac

Opening a New Drawing
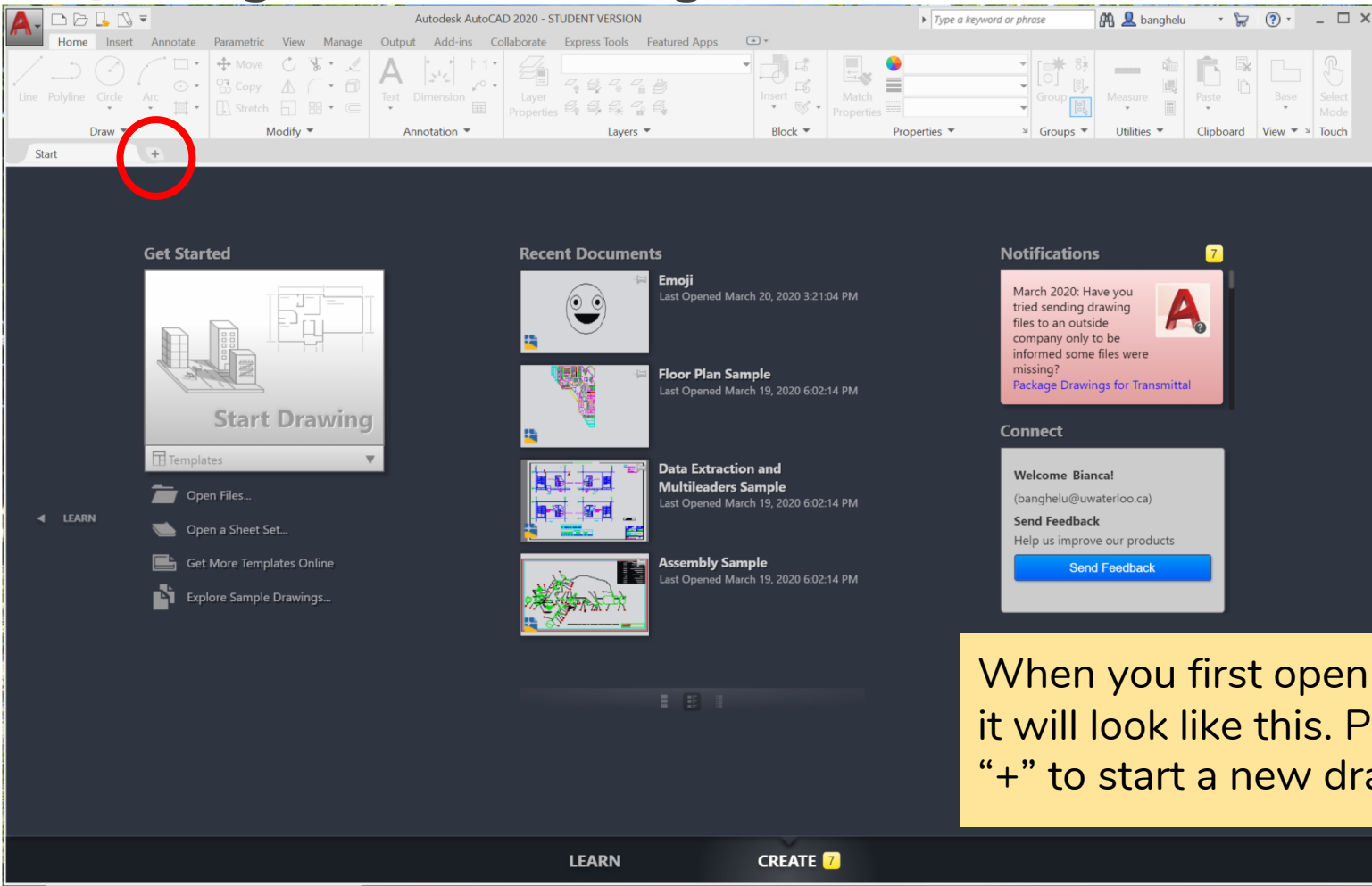
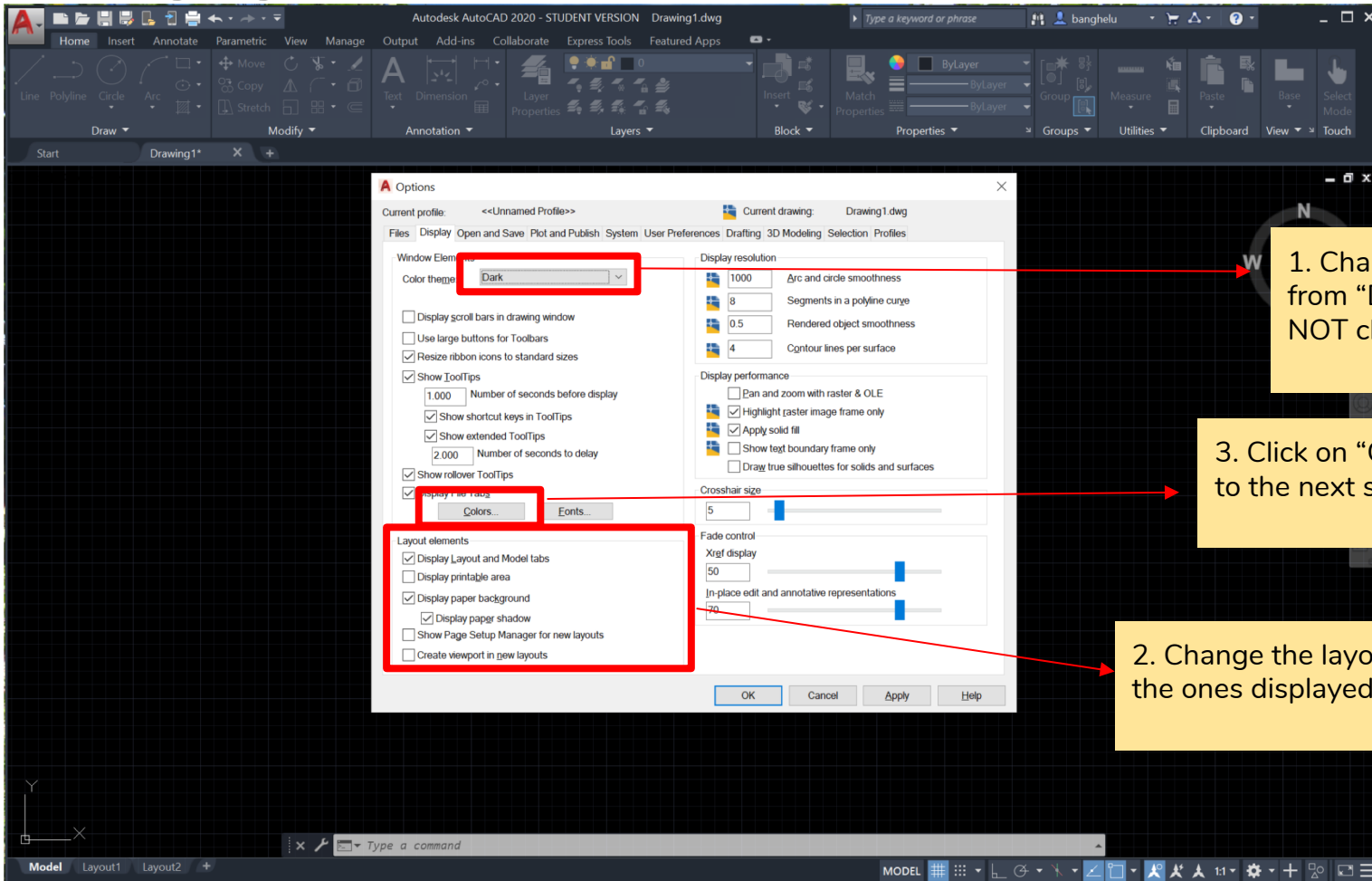When you first open AutoCAD it will look like this. Press on the "+" to start a new drawing.
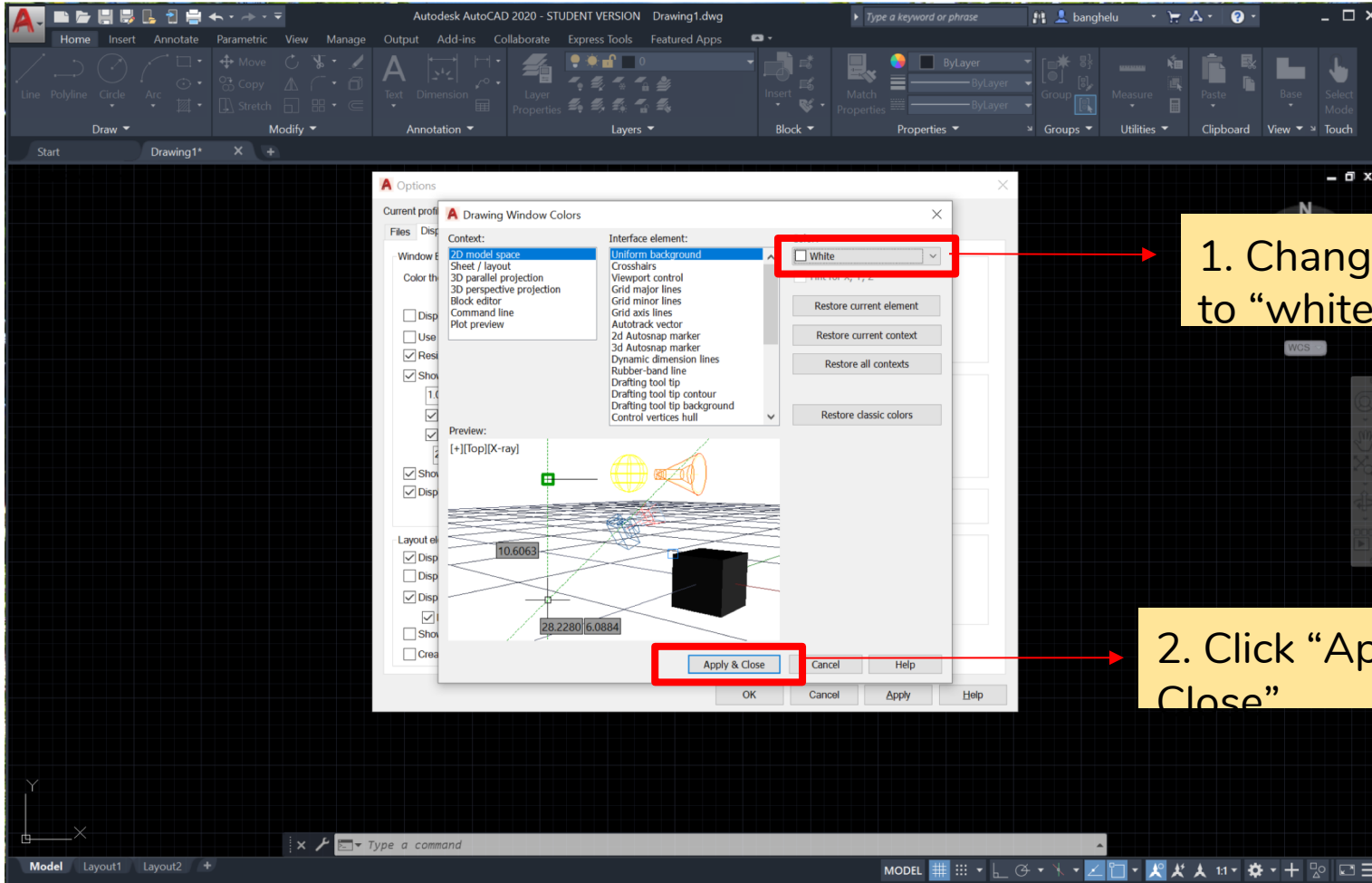
Changing Display Options
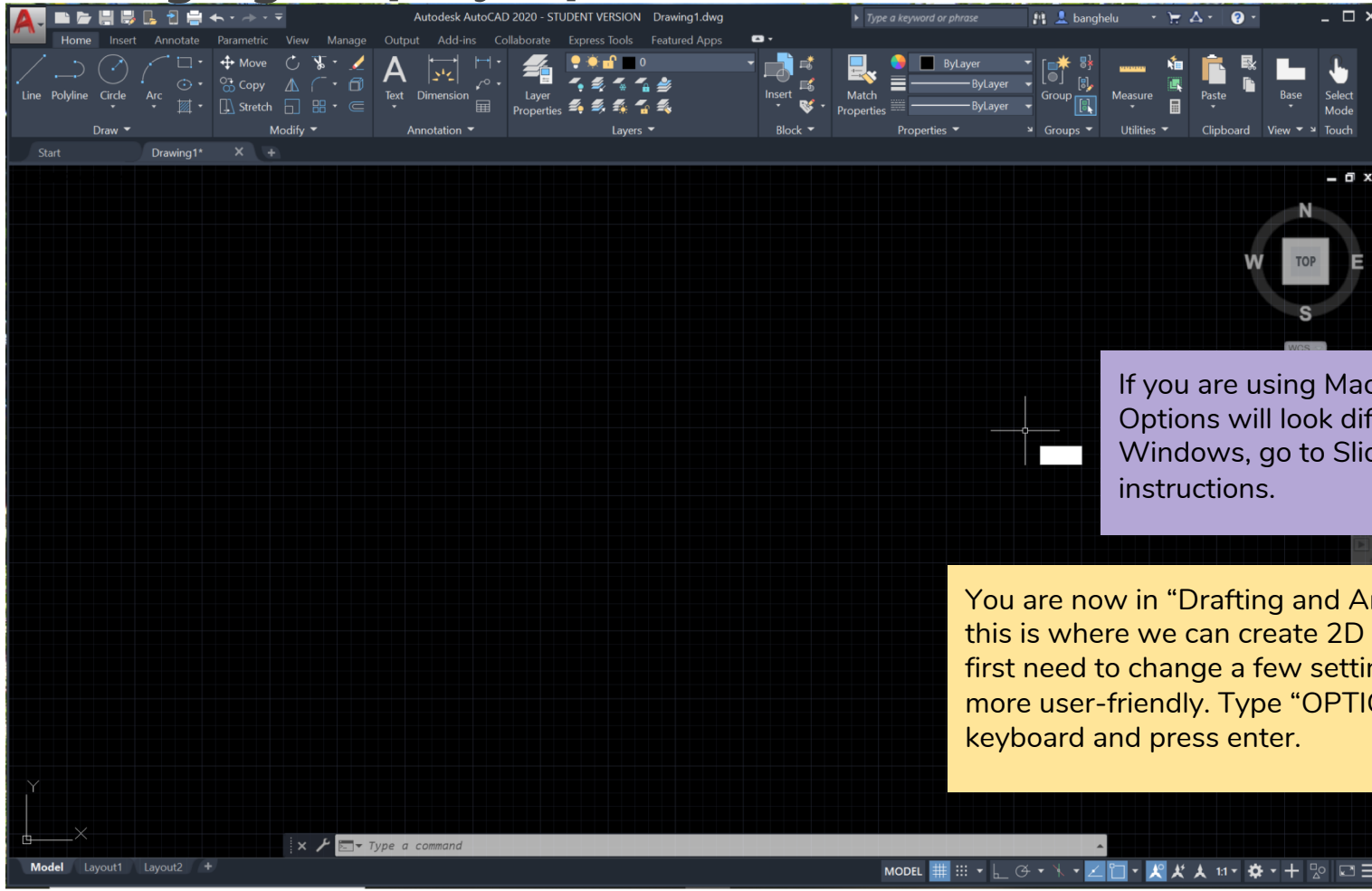
If you are using Mac, Display Options will look different than on Windows, go to Slide 17 for Mac instructions.

You are now in "Drafting and Annotations", this is where we can create 2D drawings. We first need to change a few settings to make it more user-friendly. Type "OPTIONS" into your keyboard and press enter.

Changing Display Options

1. Change colour theme from "Dark" to "Light". DO NOT click "OK" yet.

3. Click on "Colours" and go to the next slide

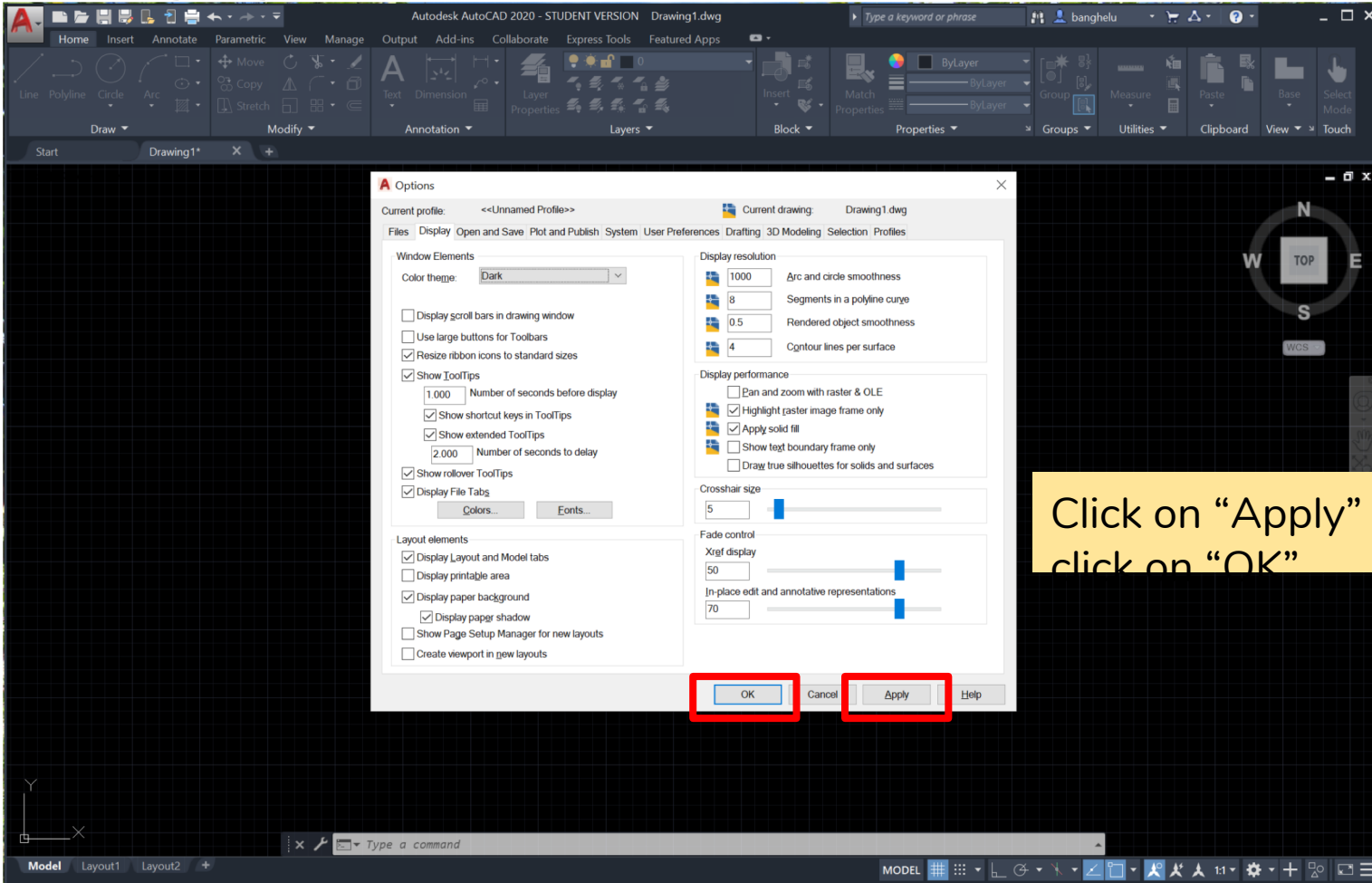2. Change the layout elements to match the ones displayed here.

Changing Display Options

1. Change colour to "white".

2. Click "Apply & Close"

Changing Display Options

Click on "Apply" then click on "OK"

# Display Options if You are Using Mac…

- Display options may look a little different if you are using a Mac computer
- Follow the steps on the next two slide to set up your workspace
- If are not using Mac, skip to slide 20

Changing Display Options (MacOS)
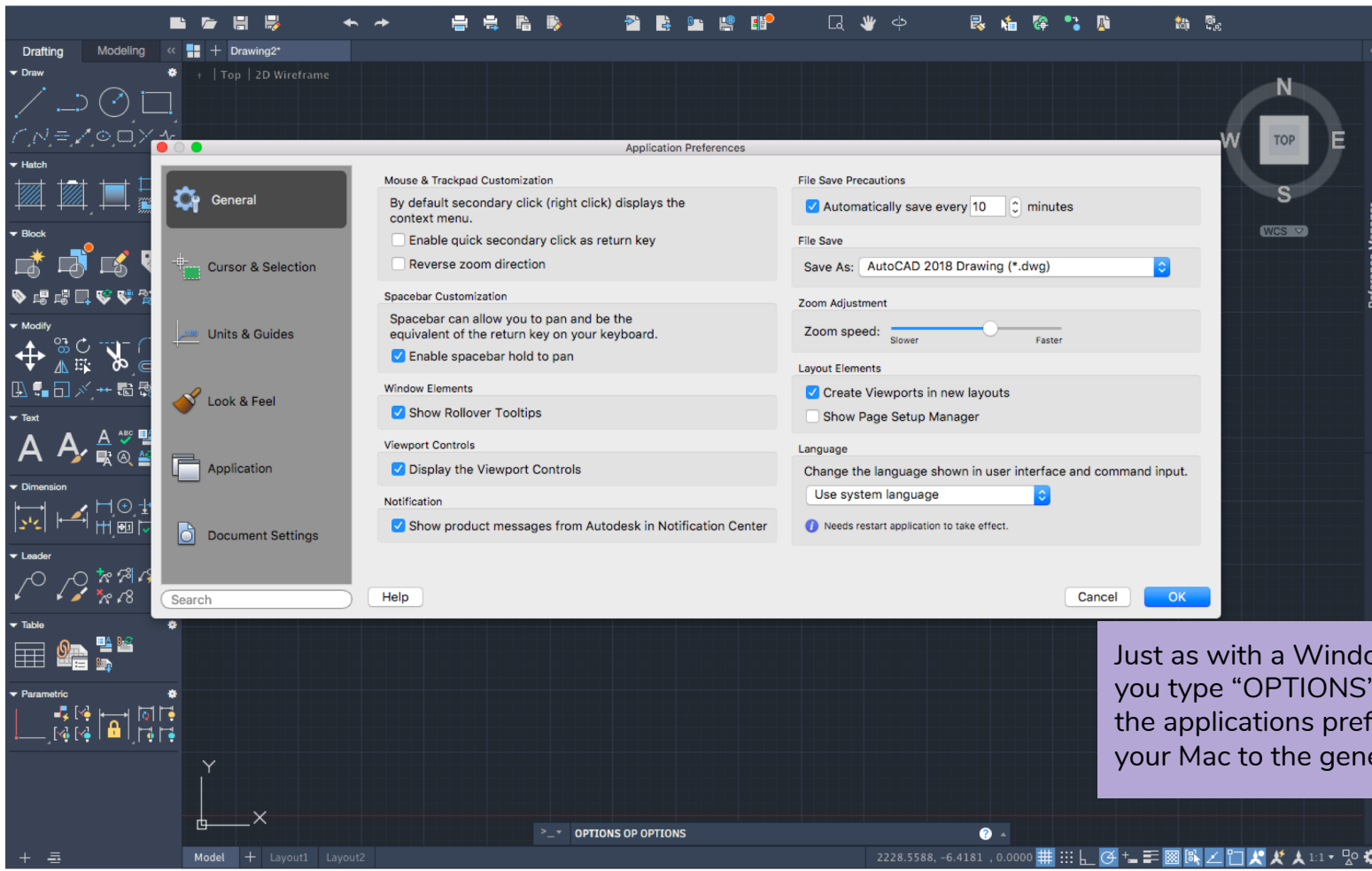
Just as with a Windows computer, when you type "OPTIONS" in the command bar, the applications preferences will open on your Mac to the general tab.

Changing Display Options (MacOS)
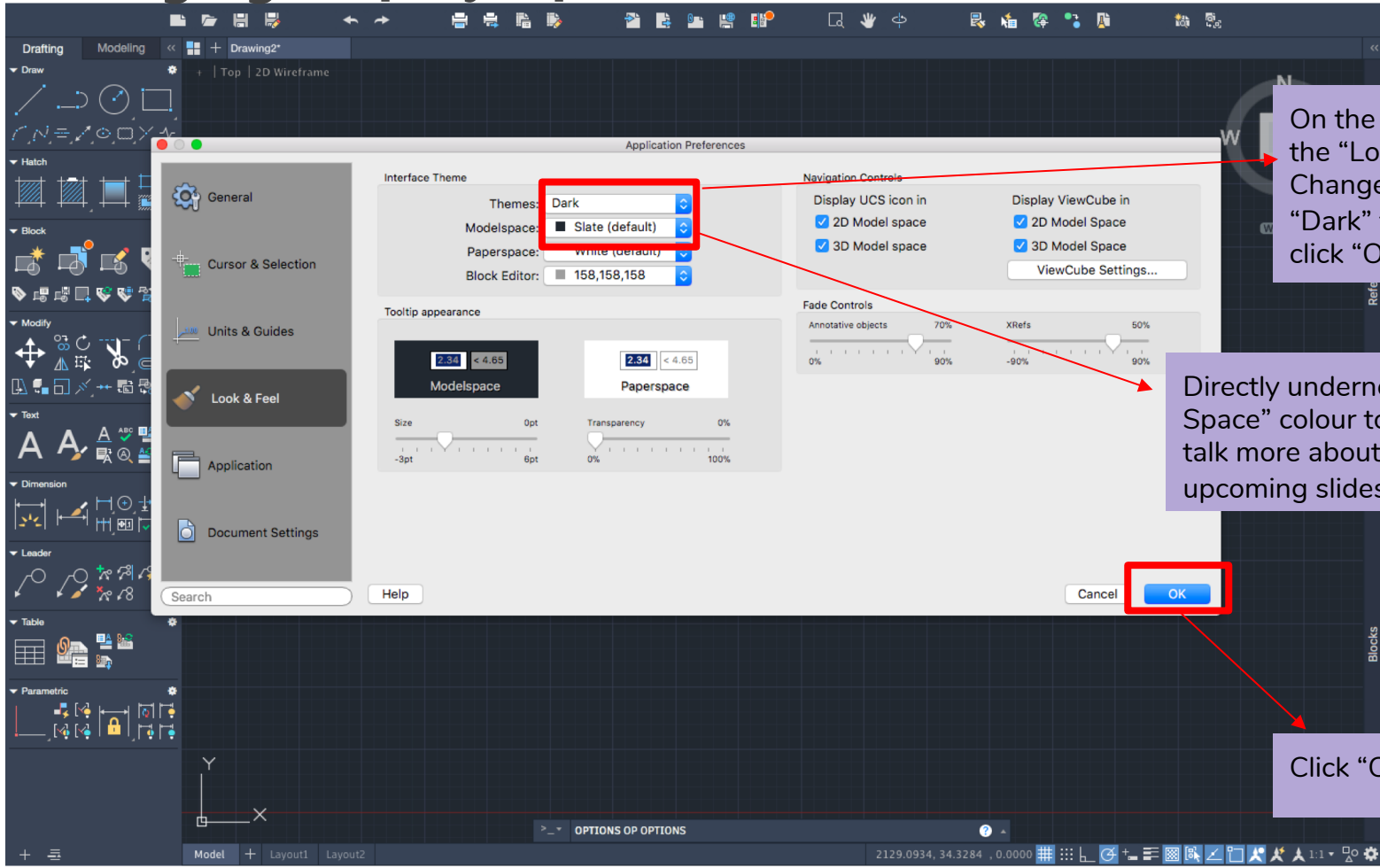
On the left side bar, click on the "Look & Feel" tab. Change "themes" from "Dark" to "Light". DO NOT click "OK" yet.

Directly underneath, change "Model Space" colour to "white". We will talk more about Model Space in the upcoming slides.

Click "OK" to save changes.

Turning Off the Grid Background
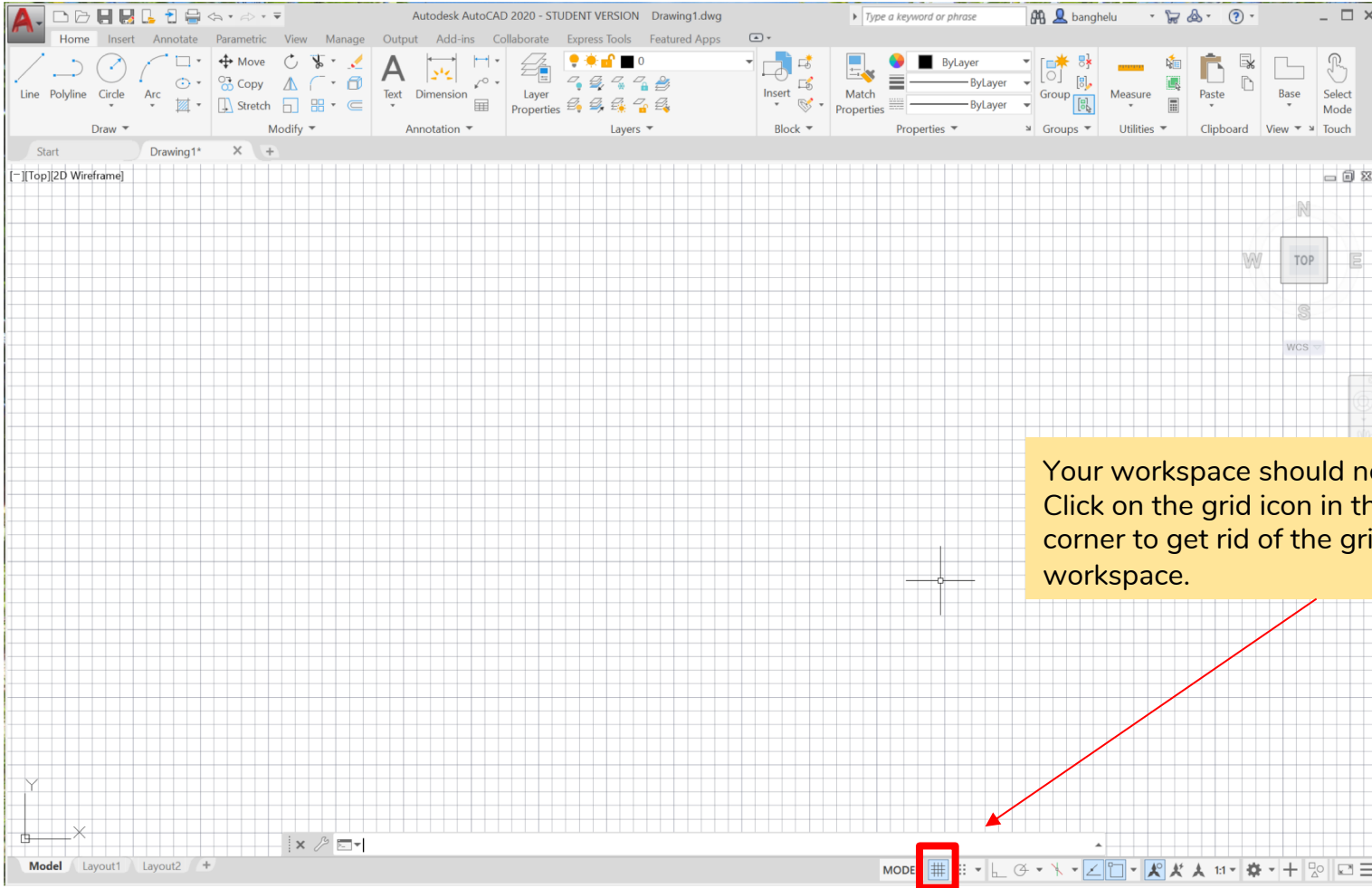
Your workspace should now look like this. Click on the grid icon in the bottom right corner to get rid of the grids on your workspace.

Turning Off Dynamic Inputs
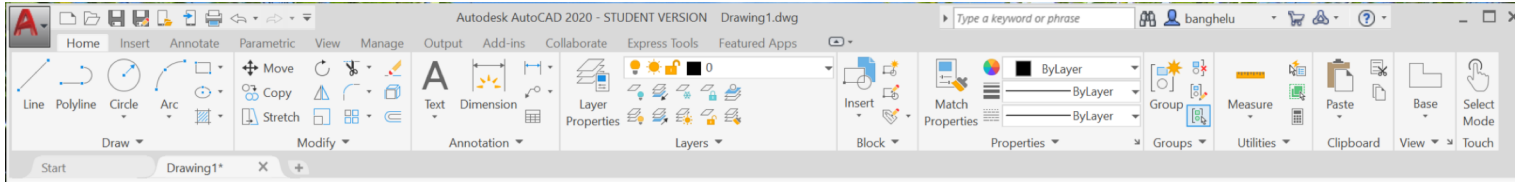
We will NOT be using Dynamic Inputs, this is for advanced users, so we must turn this feature off.

Type "DYNMODE" on your keyboard and click enter. Set the numeric value to zero by typing in "0" and click enter. You have now turned off Dynamic Inputs.

Enter new value for DYNMODE <3>: 0

Command: DYNMODE

DYNMODE Enter new value for DYNMODE <3>:
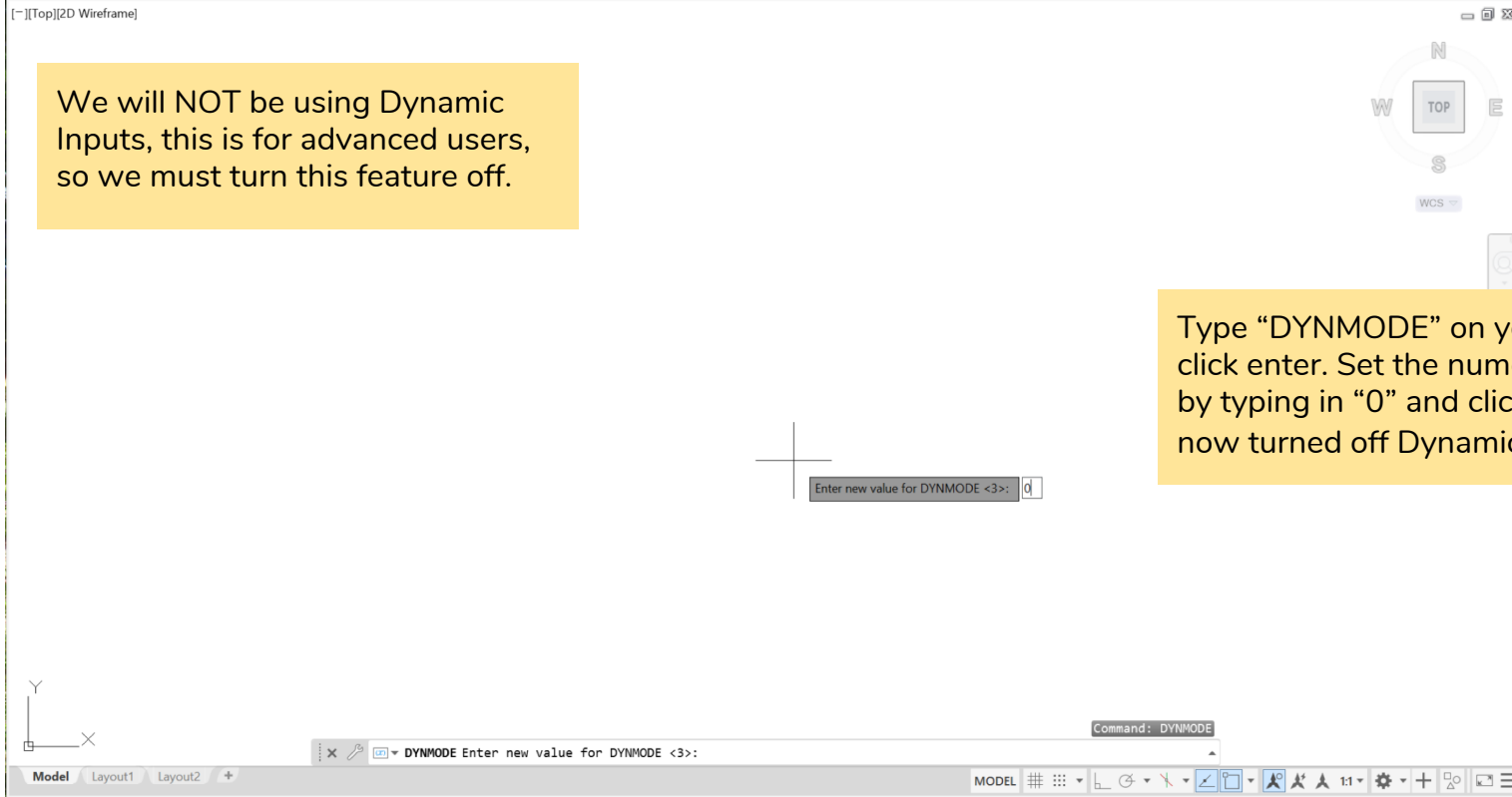
Turning Off View Cube, Turning On Coordinates
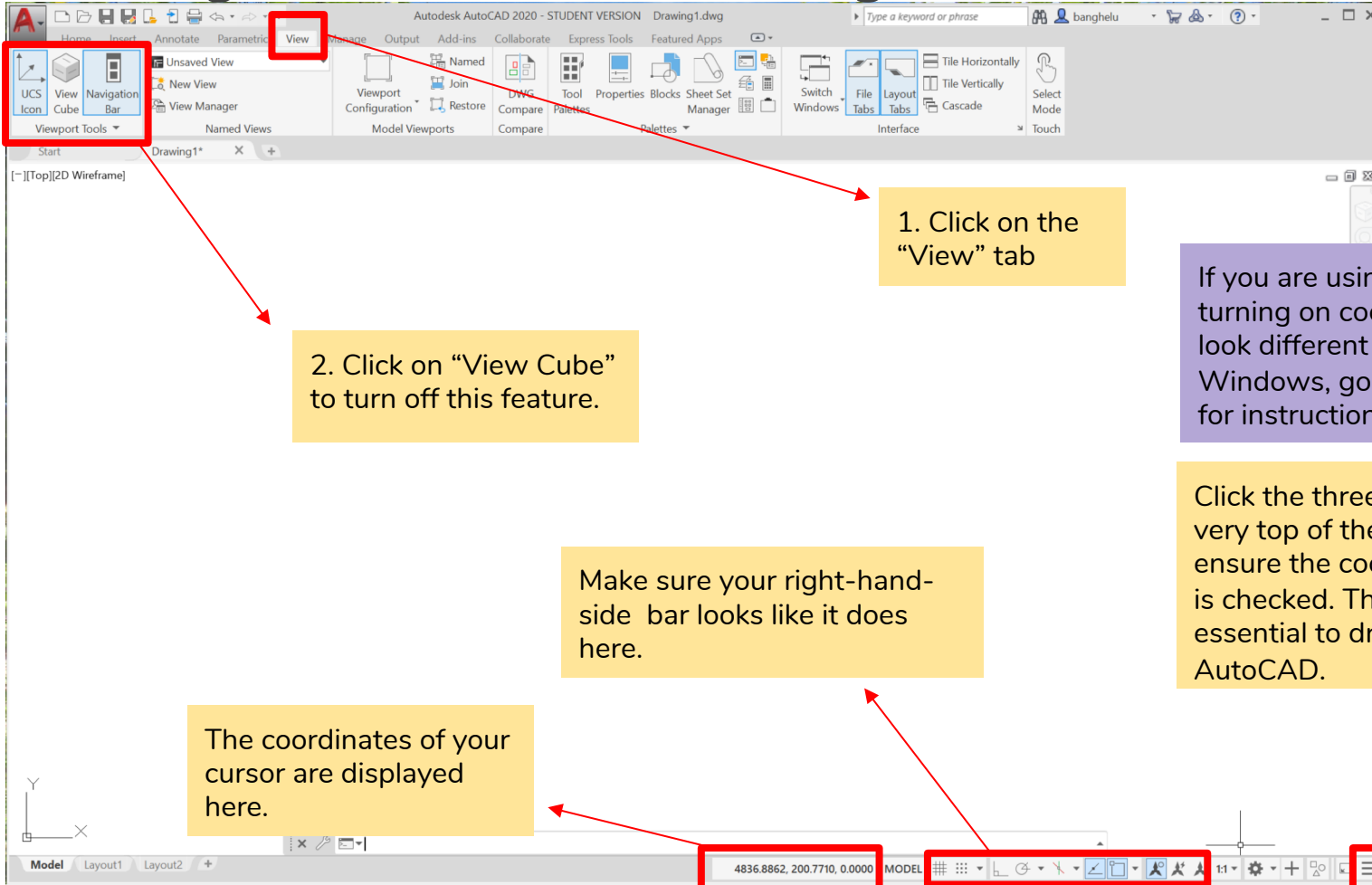
1. Click on the "View" tab

2. Click on "View Cube" to turn off this feature.

If you are using Mac, turning on coordinates will look different then on Windows, go to Slide 23 for instructions.

Click the three lines, at the very top of the menu, ensure the coordinates box is checked. They are essential to drawing in AutoCAD.

Make sure your right-hand-side bar looks like it does here.

The coordinates of your cursor are displayed here.

Turning on Coordinates (MacOS)
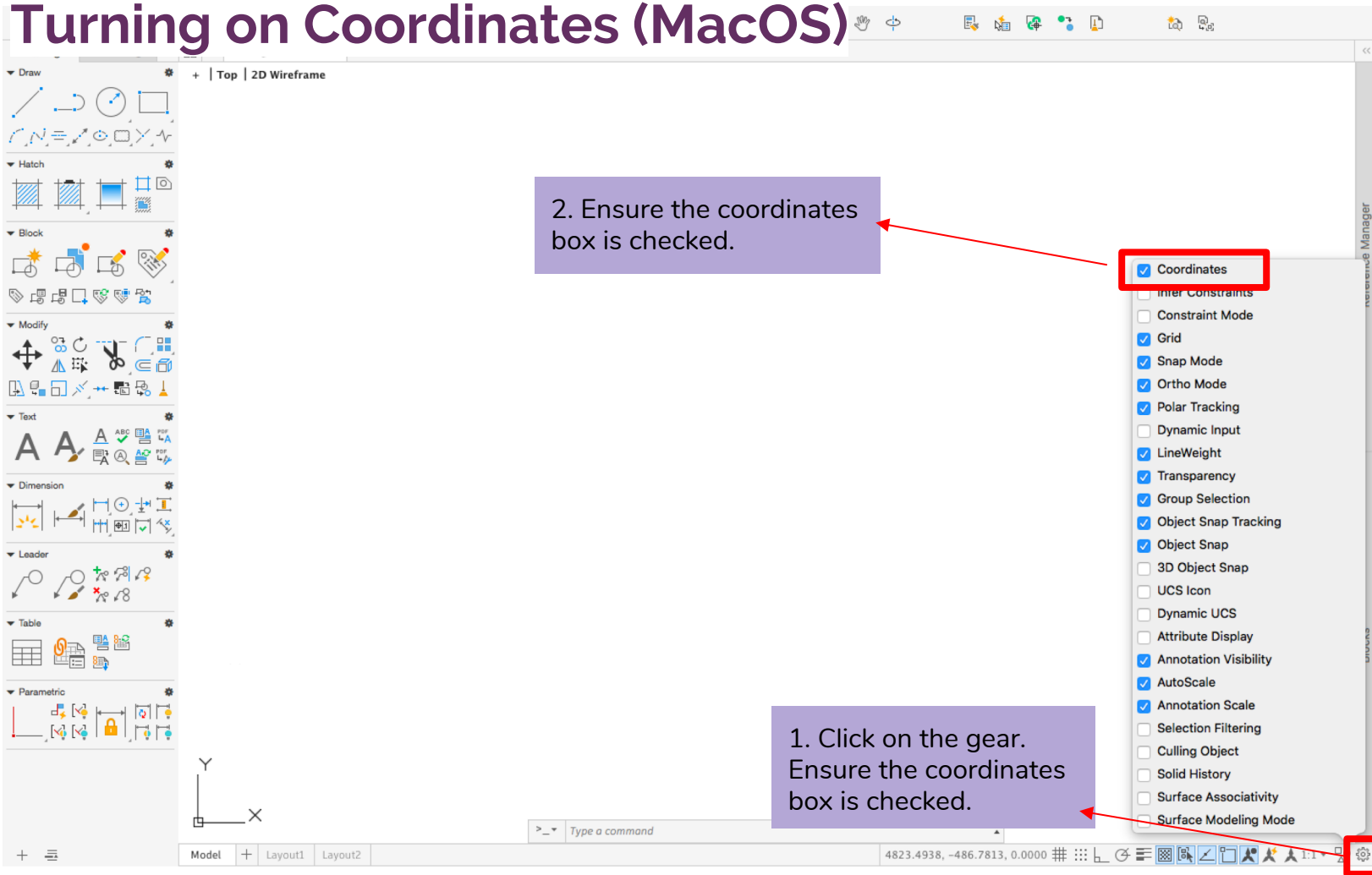
2. Ensure the coordinates box is checked.

1. Click on the gear. Ensure the coordinates box is checked.

✅	Coordinates
☐	Infer Constraints
☐	Constraint Mode
✅	Grid
✅	Snap Mode
✅	Ortho Mode
✅	Polar Tracking
☐	Dynamic Input
✅	LineWeight
✅	Transparency
✅	Group Selection
✅	Object Snap Tracking
✅	Object Snap
☐	3D Object Snap
☐	UCS Icon
☐	Dynamic UCS
☐	Attribute Display
✅	Annotation Visibility
✅	AutoScale
✅	Annotation Scale
☐	Selection Filtering
☐	Culling Object
☐	Solid History
☐	Surface Associativity
☐	Surface Modeling Mode

Top | 2D Wireframe

4823.4938, -486.7813, 0.0000

Type a command

Model Layout1 Layout2

Getting to Know Your Workspace

- Now that we have set up our workspace, we can start becoming familiar with the different functions and features of AutoCAD

- We will learn the layout of our workspace before we start learning any commands

- We will then learn a few basic commands which will help you navigate your workspace

- Commands are in all capital letters

Getting to Know Your Workspace

Undo
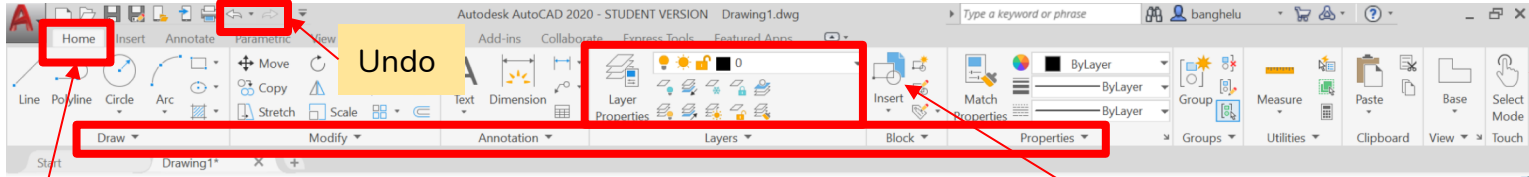
The workspace for Mac is the same as Windows, the panels are just on the left side rather than the top

We will be on the "Home" tab during most of our tutorials and will learn about the function of the other panels.

AutoCAD lets you create different layers in your drawing, like Photoshop. It is important to keep your layers organized.
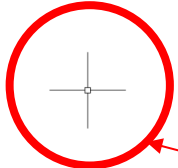
This is your cursor/ pointer, it allows you to grip onto lines that you have drawn and move around the workspace.

This is the navigation bar. Use this to navigate and move around your drawing. More on this on the next slide!

This is the command bar. Here you can type out commands you want AutoCAD to perform.

The scale of your drawing.

Navigation Bar and Commands

PAN allows you to move around your drawing. Click on PAN on the navigation bar or type "PAN" into the command bar to use this function. Left click on your mouse, hold and drag to move around your drawing.

ZOOMEXTENTS zooms your workspace in or out so that you can see the entire drawing. Click this icon on the navigation bar or type "ZOOMEXTENTS" on the command bar to use this feature. If you just want to zoom, use the scrolling wheel on your mouse or use two fingers on a trackpad.
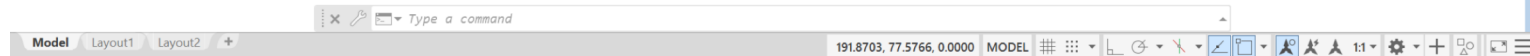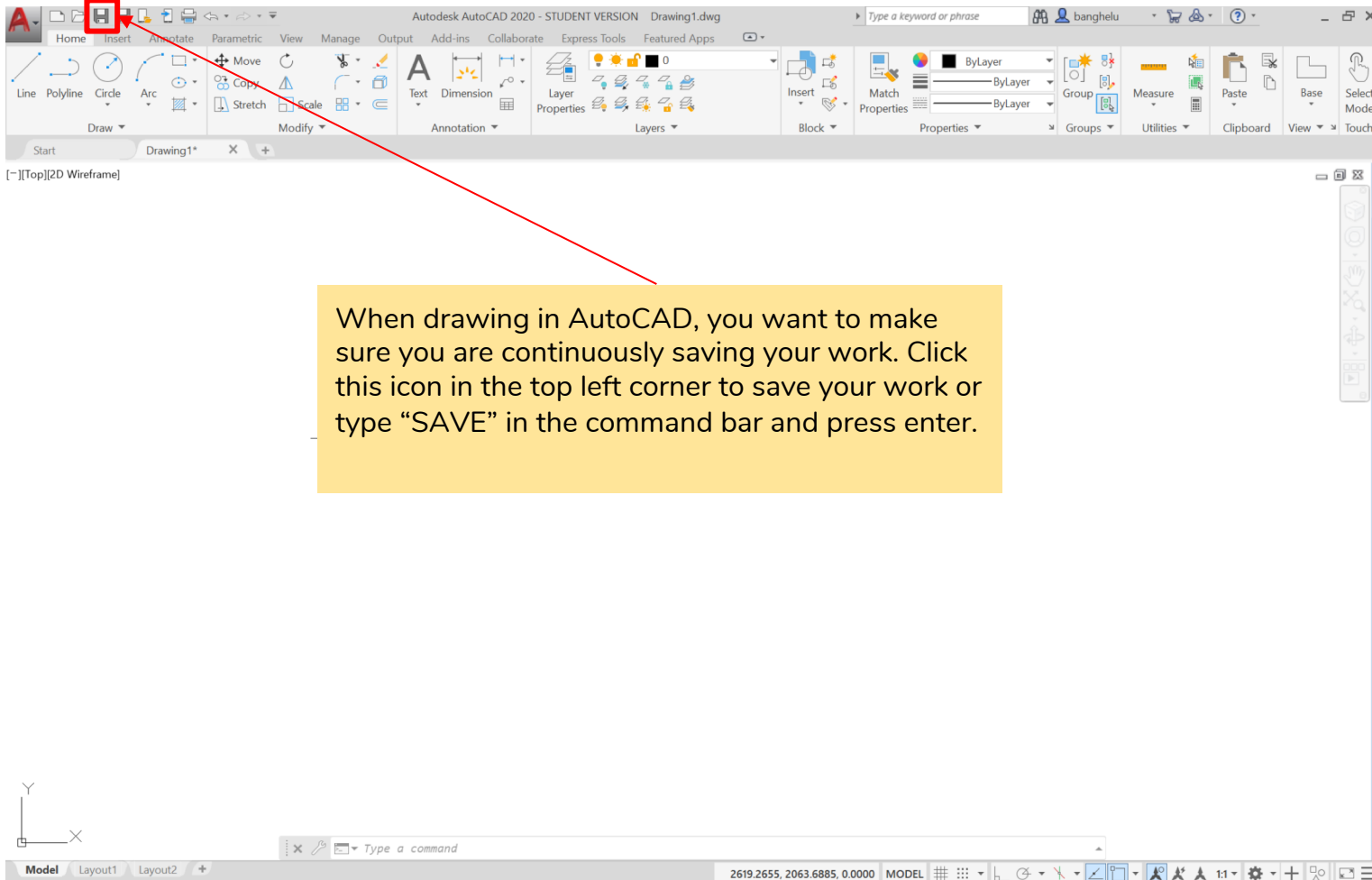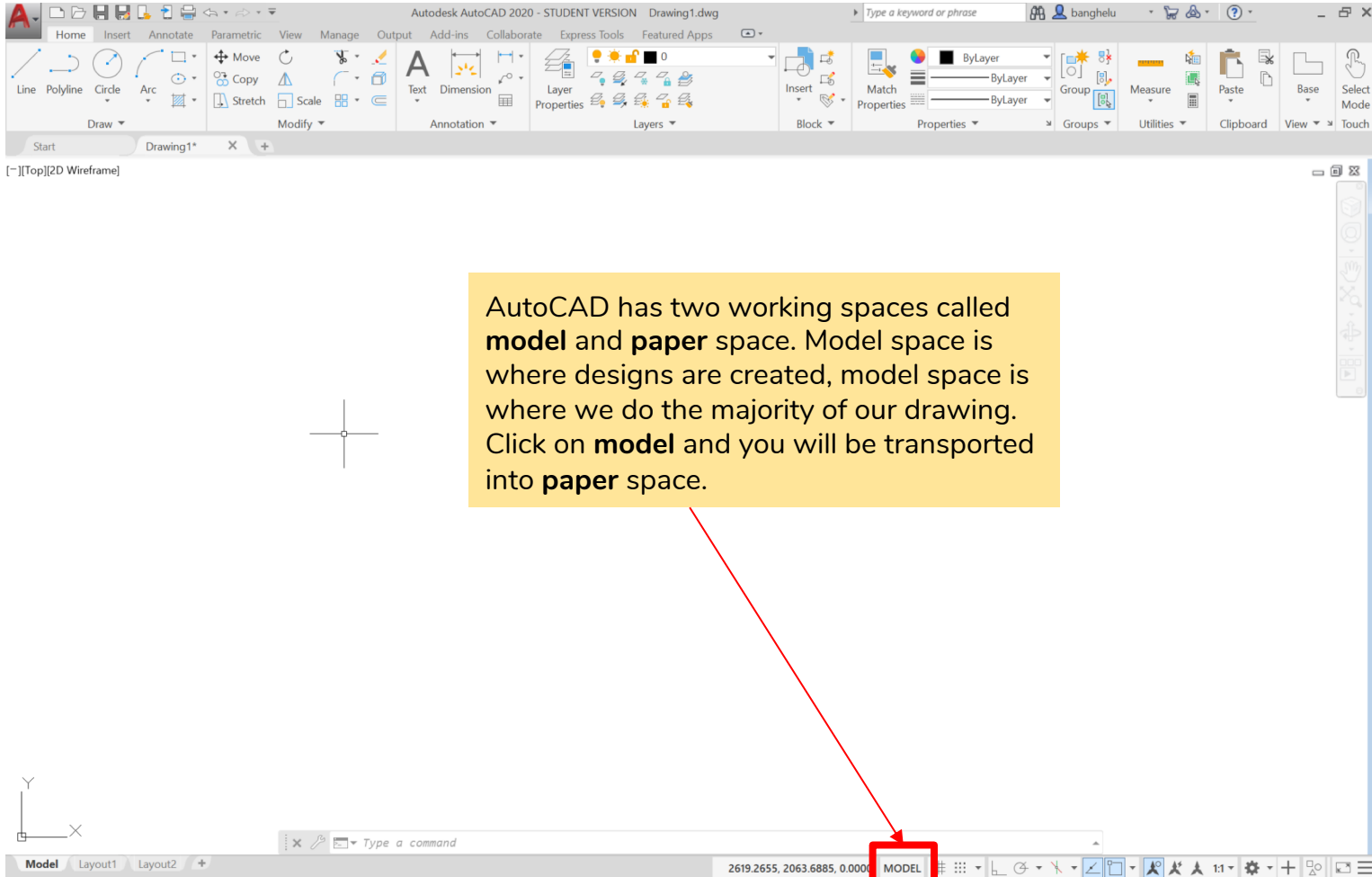
Saving Your Drawings
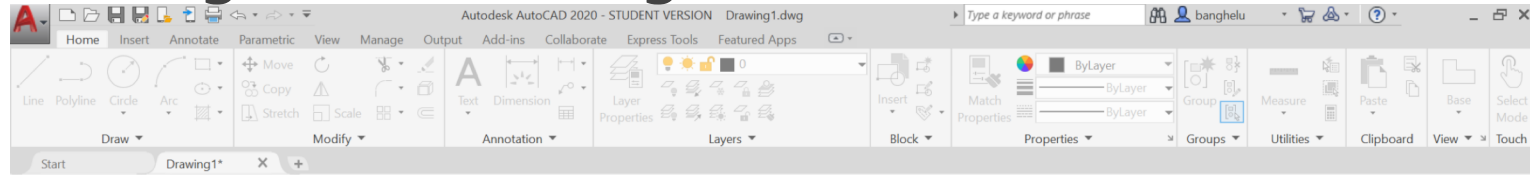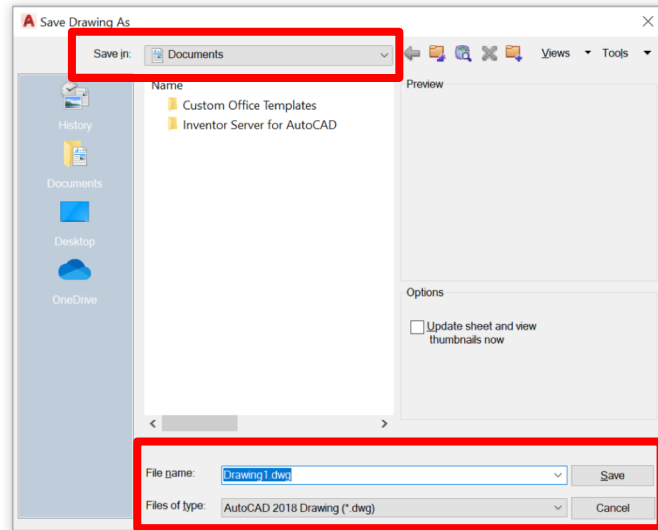
To save a drawing, first type "SAVEAS" on your command bar and press enter. This screen will pop up. Decide where you want to save your drawing and name your drawing. AutoCAD drawings save as .dwg files which can only be opened in AutoCAD. Tutorial 2 will show you how to save your drawing as a .pdf so you can print it.

Saving Your Drawings

When drawing in AutoCAD, you want to make sure you are continuously saving your work. Click this icon in the top left corner to save your work or type "SAVE" in the command bar and press enter.

Model v.s. Paper Space

AutoCAD has two working spaces called **model** and **paper** space. Model space is where designs are created, model space is where we do the majority of our drawing. Click on **model** and you will be transported into **paper** space.

Model v.s. Paper Space

Paper space is where we can create borders, descriptions, or titles for our designs. Click on **paper** and you will be transported to **model** space.
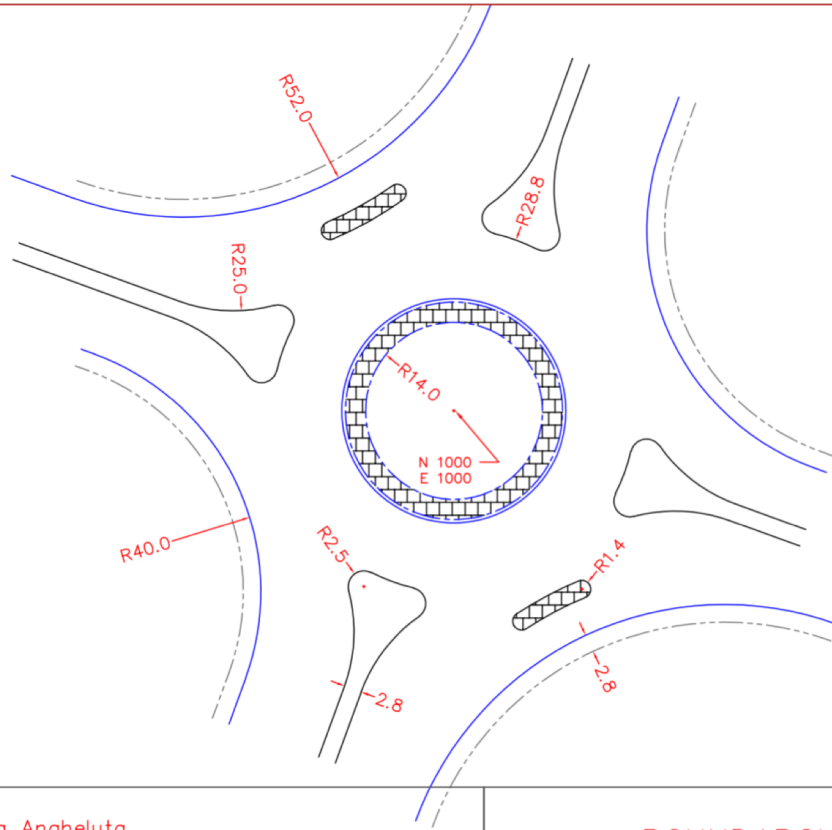
Model v.s. Paper Space

The roundabout and intersection design was created in **model** space. The border and description was created in **paper** space. The design was imported into paper space using the "MVIEW" command (we will learn how to do this in a later tutorial).

DRAWN BY:
    Bianca Angheluta

SCALE: 1: 750

ROUNDABOUT AND
INTERSECTION DESIGN

Getting to Know Your Workspace

- Now that we have gotten to know our workspace, we can start learning how to draw in AutoCAD!
- Check out Tutorial 2 to start drawing
- Also check out the "AutoCAD Commands Cheat-Sheet" for a helpful list of commands