

L^AT_EX



LaTeX Lab 7: Figures

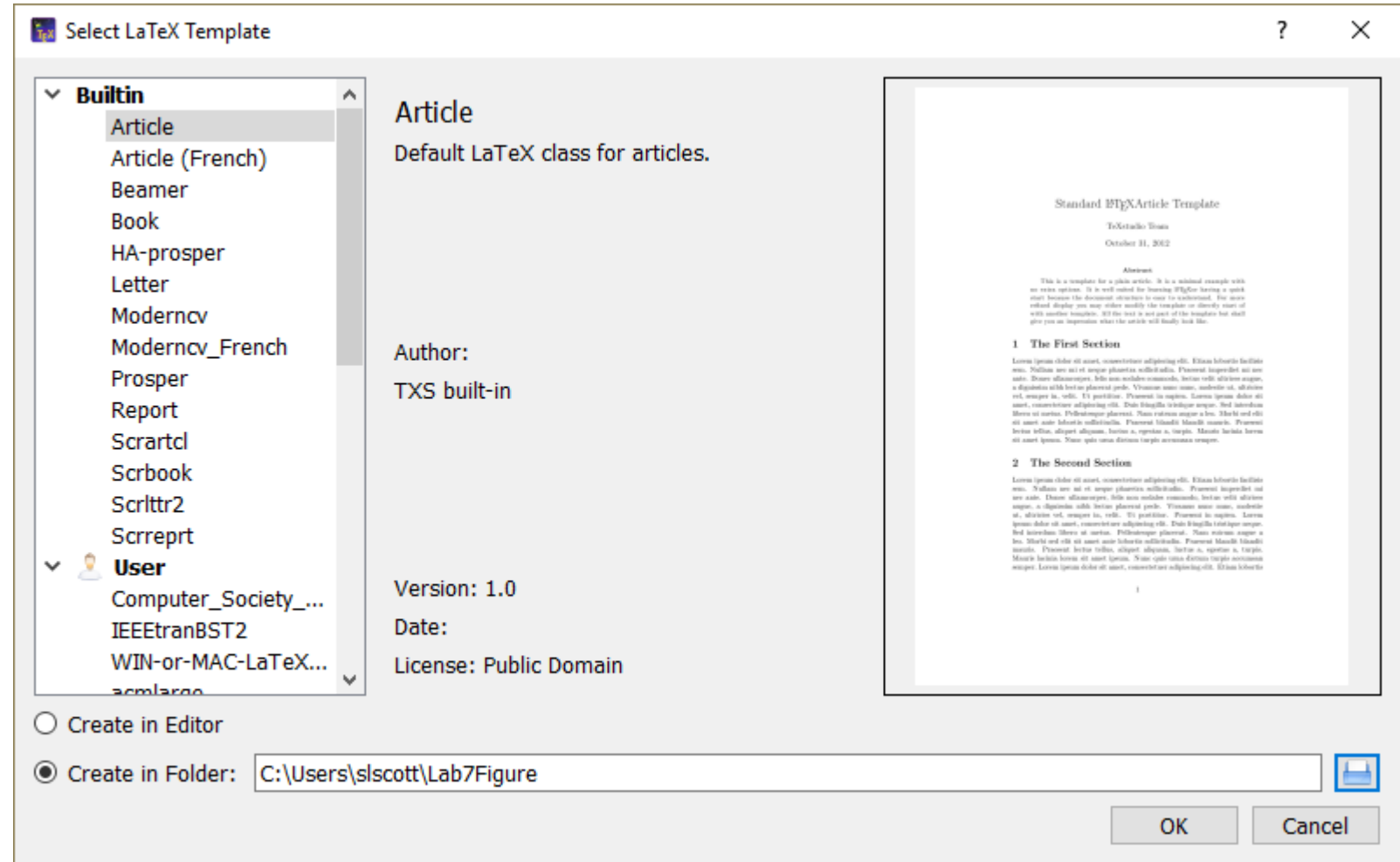
CSI 500

Course material derived from:


Lamport, L. (1994). *L^AT_EX: a document preparation system: user's guide and reference manual*. Addison-Wesley.

Article

- Let's make another LaTeX document
- Make a new folder called "Lab7Figure"
- In TexStudio, File, New From Template
- Select "Article"
- Select "Create in Folder", and navigate to your "Lab7Figure" folder.
- Press OK



LaTeX code

- Type in the following in the editor window.
 - Your additions are shown in **RED** font color
 - the "%" indicates comments
- Save the document
- Press the green arrowhead titled "Build and View" on the menu bar - it looks like this 
- At the dialog box, press F5 and OK

```
% LaTeX Image Example
\documentclass[11pt]{article}
\usepackage{fullpage}
\usepackage{graphicx}
```

```
%opening
\title{Lab 7 LaTeX Images}
\author{Your Name}
```

```
\begin{document}
```

```
\maketitle
```

```
\begin{abstract}
In this lab, we use LaTeX features
for importing and
displaying image files.
\end{abstract}
```

```
\section{Section One}
Here we will provide an image
for LaTeX to display.
```

```
\end{document}
```

 **put your cursor here**

What it should look like

Lab 7 LaTeX Images

Your Name

February 3, 2018

Abstract

In this lab, we use LaTeX features for importing and displaying image files.

1 Section One

Here we will provide an image for LaTeX to display.

Images in LaTeX

- You can use the IDE to insert an image
 - LaTeX supports the major graphics file formats, such as JPG,PNG,TIF
- Find a copyright-free public domain image for this lab
 - google search for "free images"
 - or go to https://commons.wikimedia.org/wiki/Main_Page
- Download and save to your working directory

A marmot seen on top of Mount Dana, Yosemite, CA, USA



Legal Stuff

By The Photographer - Own work, CC BY-SA 4.0,

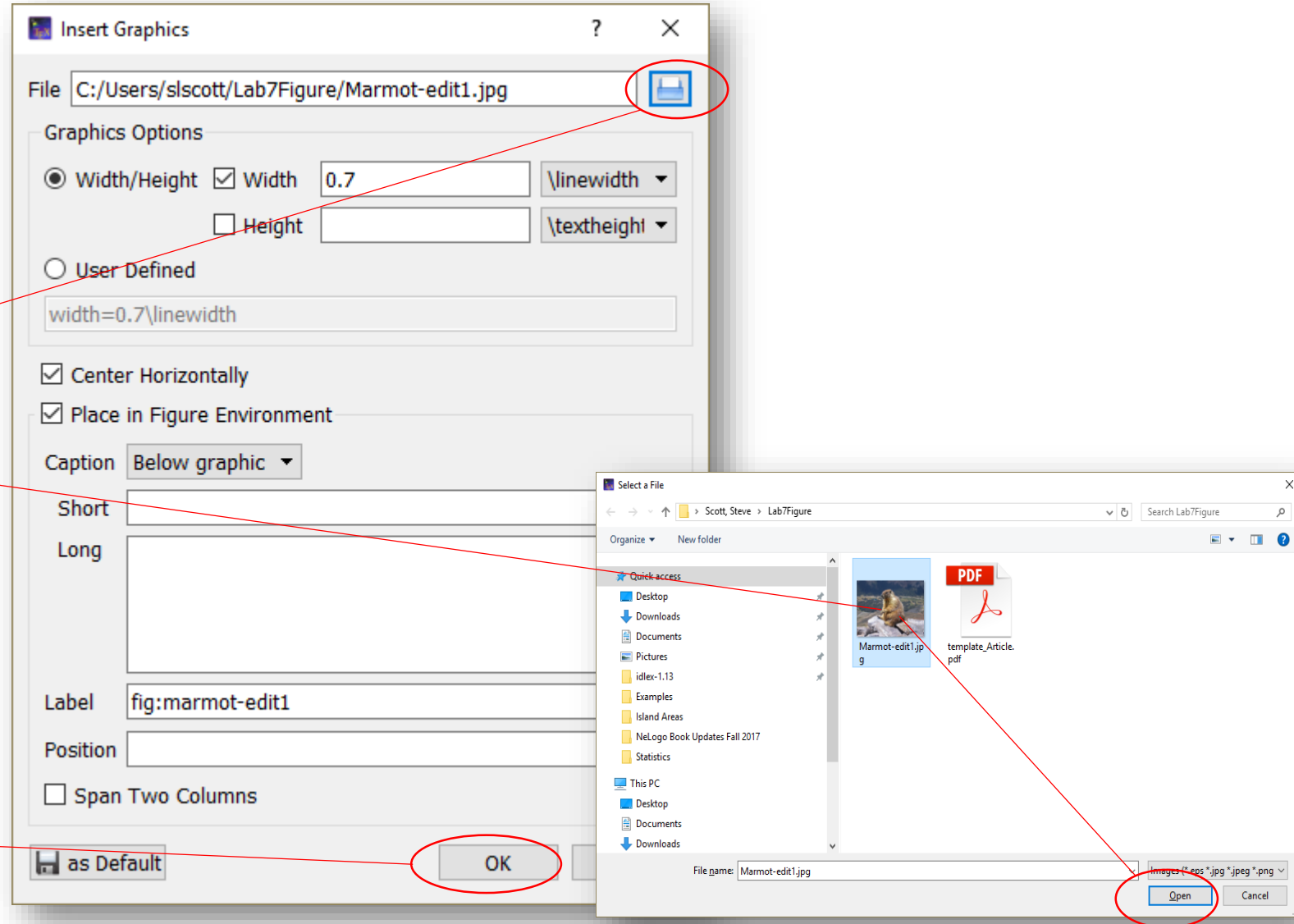
<https://commons.wikimedia.org/w/index.php?curid=54726518>

Licensed under Creative Commons Attribution-Share Alike 3.0 Unported
Attribution: Inklein at the English Language Wikipedia

<https://commons.wikimedia.org/wiki/File:Marmot-edit1.jpg>

Insert the image using TexStudio Image Wizard

- On the menu bar, select "Wizards"
- Select "Insert Graphics"
- At the dialog box, click on the little blue box in the "File" widget
- At the file selection dialog box, click on the thumbnail image of the file you want to insert
- press Open
- Review the default values on the Insert Graphics dialog box. Use the default values for now.
- Press OK



Recompile your document

- Press the green triangles to "Build and View"
- The wizard will automatically insert the image code into your document at the cursor position
- Add some text for the caption
- here's the wizard generated code

```
\section{Section One}
Here we will provide an image
for LaTeX to display.
\begin{figure}
    \centering
    \includegraphics[width=0.7\linewidth]{Marmot-edit1}
    \caption{A Marmot at Yosemite National Park}
    \label{fig:marmot-edit1}
\end{figure}

\end{document}
```


Here's what it should look like

CAUsers\siscott\Lab7Figure\template_Article.tex - TeXstudio

File Edit Idefix Tools LaTeX Math Wizards Bibliography Magros View Options Help

Structure

- template_Article.tex
 - LABELS
 - Section One
 - template_Article.tex
 - LABELS
 - National Parks of the Americ...
 - Yellowstone National Park
 - Yosemite National Park
 - Glacier national Park

template_Article.tex

```
\documentclass[11pt]{article}
\usepackage{fullpage}
\usepackage{graphicx}

%opening
\title{Lab 7 LaTeX Images}
\author{Your Name}

\begin{document}

\maketitle

\begin{abstract}
In this lab, we use LaTeX features
for importing and
displaying image files.
\end{abstract}

\section{Section One}
Here we will provide an image
for LaTeX to display.

\begin{figure}
\centering
\includegraphics[width=0.7\linewidth]{Marmot-edit1}
\caption{A Marmot at Yosemite National Park}
\label{fig:marmot-edit1}
\end{figure}

\end{document}
```

Line: 22 Column: 21 INSERT

Messages Log Preview Search Results

Process started: "C:/Program Files/MiKTeX 2.9/miktex/bin/x64/pdflatex.exe" -synctex=1 -interaction=nonstopmode "template_Article".tex

Process exited normally

Process started: "C:/Program Files/MiKTeX 2.9/miktex/bin/x64/pdflatex.exe" -synctex=1 -interaction=nonstopmode "template_Article".tex

Process exited normally

part label tiny

1 of 2




Figure 1: A Marmot at Yosemite National Park

Pages 1 to 2 of 2 57%

en_US UTF-8 Ready Automatic

8

Let's fix the pagination and add a reference

- The default placement has put the image on the next page - what if we want it to appear right in our text stream?
 - Add the optional placement instructions **[h!]** to the `\image` environment command
- Let's add a cross reference
 - when you typed in the new text, the **\ref** command automatically opened up a dialog box with available references
 - pick the one associated with your image, press OK
 - The reference is automatically filled in
- Press "Build and View"

type in the code in **red** font

```
\section{Section One}
Here we will provide an image
for LaTeX to display. Here is
a picture of a marmot, a small
mammal found in woodland realms
(see Figure \ref{fig:marmot-edit1}).

\begin{figure}[h!]
    \centering
    \includegraphics[width=0.7\linewidth]{Marmot-edit1}
    \caption{A Marmot at Yosemite National Park}
    \label{fig:marmot-edit1}
\end{figure}
```

Your document should now look like this

TeXstudio interface showing the LaTeX source code for a document titled "template_Article.tex". The source code includes package declarations, document class settings, and content for the abstract and section one. The preview window displays the rendered output, including the abstract and section one, with a photograph of a marmot.

Structure

- template_Article.tex
 - LABELS
 - Section One
 - template_Article.tex
 - LABELS
 - National Parks of the Americ...
 - Yellowstone National Park
 - Yosemite National Park
 - Glacier national Park

Source Code:

```
\documentclass[11pt]{article}
\usepackage{fullpage}
\usepackage{graphicx}
\usepackage{subcaption}

%opening
\title{Lab 7 LaTeX Images}
\author{Your Name}

\begin{document}

\maketitle

\begin{abstract}
In this lab, we use LaTeX features
for importing and
displaying image files.
\end{abstract}

\section{Section One}
Here we will provide an image
for LaTeX to display. Here is
a picture of a marmot, a small
mammal found in woodland realms
(see Figure \ref{fig:marmot-edit1}).

\begin{figure}[h!]
\centering
\includegraphics[width=0.7\linewidth]{Marmot-edit1}
\caption{A Marmot at Yosemite National Park}
\label{fig:marmot-edit1}
\end{figure}

\end{document}
```

Rendered Output:

Abstract

In this lab, we use LaTeX features for importing and displaying image files.

1 Section One

Here we will provide an image for LaTeX to display. Here is a picture of a marmot, a small mammal found in woodland realms (see Figure 1).




Figure 1: A Marmot at Yosemite National Park

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Figures summary

- LaTeX supports including graphics and images using the major image file formats (JPEG, PNG, TIF, others)
- You can use a TexStudio Image Wizard to add images to your document
 - The default image placement values are fine for simple graphics
- You can "hand code" image placement and features using the `\figure{}` environment and its parameters
 - You can have fine control over image placement, multiple images, etc
- Images can be captioned and labeled for cross reference using the `\ref` command