\documentclass{article}
\usepackage{hyperref}

\begin{document}
\title{LaTeX: A Short Introduction}
\author{Jesse Knight}
\date{2019 Feb 28}

\maketitle

Jesse Knight

MAP Centre for Urban Health Solutions

\end{document}
Overview

Introduction

Getting Started
INTRODUCTION
What is \LaTeX? 

A typesetting program: \textit{content} $\rightarrow$ \textit{a document}
What is LaTeX?

A typesetting program: content → a document
What is \LaTeX? 

A typesetting program: *content* $\rightarrow$ *a document*
input: filename.tex

```latex
\begin{document}
\maketitle
\tableofcontents
\cleardoublepage
\setlength{\parskip}{6pt}

\section{Scenarios}
For model checks, we explore 3 simulation scenarios:
\begin{enumerate}
\item susceptible groups; for verifying demographic outputs
\item undiagnosed groups; for verifying transmission dynamics
\item all population groups; for verifying intervention dynamics
\end{enumerate}

\section{Equilibrium}
l\label{sec: equilibrium}
\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure1.png}
\caption{Equilibrium proportions of activity groups and sex}
\end{figure}
\end{em}

\section{Epidemic}
l\label{sec: epidemic}
\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure2.png}
\caption{Total population during equilibrium, adjusted to reach SN_0S at the point}
\end{figure}
\end{em}

\section{Population Proportions}
\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure3.png}
\caption{Activity groups}
\end{figure}
\end{em}
\end{document}
```

output: filename.pdf

Model Checks:
Dynamic Model of HIV Transmission
in eSwatini with focus on Female Sex Workers
Jesse Knight, Hui Ting Ma, Linwei Wang, Sharminith Misra
October 9, 2018

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Advantages of \LaTeX

- separate content and formatting
- automate numbers and cross-references
- beautiful math
- comments and version control
- split-up large documents into parts
- it's free!
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How does \LaTeX Work?

Three layers:

1. “primitives” – e.g. \texttt{\textbackslash def\pi\{3.14\}} defines a macro \texttt{\pi} to contain “3.14”
   + “kernel” – e.g. tools to combine primitives
2. “classes” – e.g. an article, which should have: title, author, sections, etc.
   + “packages” – e.g. modify or extend a basic class
3. “document” – e.g. this specific article (including content!)
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GETTING STARTED
Your First Document

\documentclass{article}
\begin{document}
  \begin{document}
    Hello World
  \end{document}
\end{document}
\documentclass{article}
% document header
\begin{document}
% document content
Hello World
\end{document}

But first: Overleaf → “New Project”
Your First Document

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  % document content
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\end{document}

But first: Overleaf → “New Project”
Document Elements

- Title, author, date
- Sections
- Math
- Cross-references & table of contents
- Citations & bibliography
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Helpful Resources

- Overleaf – Online \LaTeX{} writing application
- \LaTeX{} Install Guide – To install \LaTeX{} on your computer (offline)
- TeXstudio – Great editor for composing \LaTeX{} “code” (offline)
- TeX Stack Exchange – Q & A style how-to and debugging help