



LaTeXの基礎

情報リテラシー第2
FY2020 ・ 2Q ・ session 4

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LaTeXって何？

▶ TeX (テック・テフ)

- ▶ テキストベースの組版処理システム
- ▶ 開発者：Donald Knuth博士

▶ LaTeX (ラテック・ラテフ)

- ▶ TeXの拡張システム
- ▶ 開発者：Leslie Lamport

▶ ソフトウェア

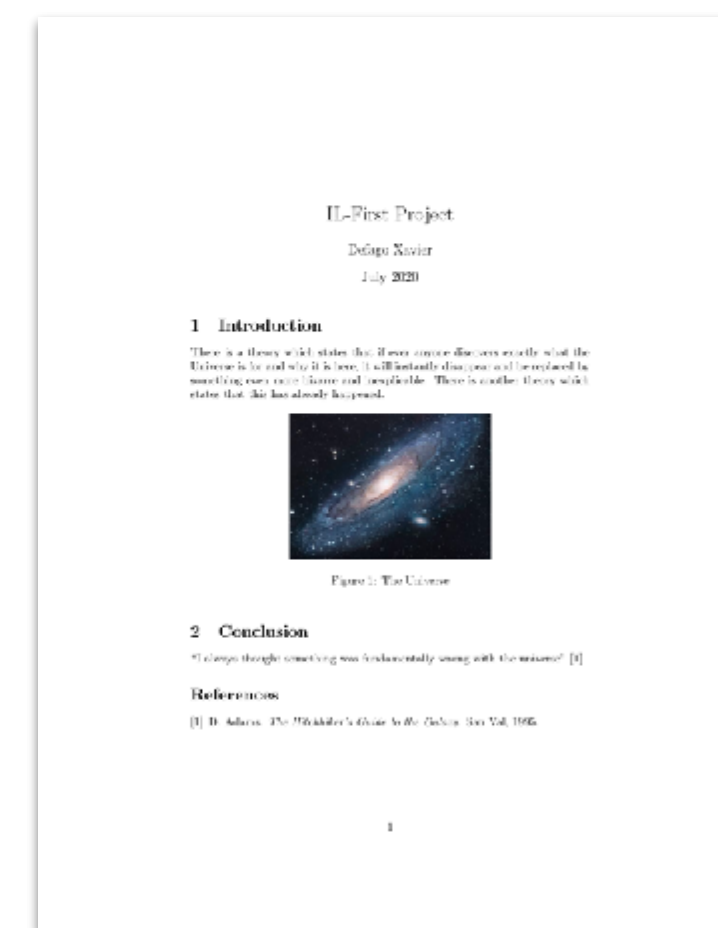
- ▶ 無料，テキスト

```

1 \documentclass{article}
2 \usepackage{utf8}[inputenc]
3
4 \title{IL-First Project}
5 \author{Défago Xavier}
6 \date{July 2020}
7
8 \usepackage{natbib}
9 \usepackage{graphicx}
10
11 \begin{document}
12
13 \maketitle
14
15 \section{Introduction}
16 There is a theory which states that if ever anyone discovers
17 exactly what the Universe is for and why it is here, it will
18 instantly disappear and be replaced by something even more
19 bizarre and inexplicable.
20 There is another theory which states that this has already
21 happened.
22
23 \begin{figure}[h]
24 \centering
25 \includegraphics[width=1.7\textwidth]{universe}
26 \caption{The Universe}
27 \end{figure}
28
29 \section{Conclusion}
30 "Always thought something was fundamentally wrong with the universe!" [1]
31
32 \begin{References}
33 [1] D. Adams, "The Mind-blowing Science of the Universe", New York, 1996.
34
35 \end{References}

```

report.tex



report.pdf

なぜLaTeX?

▶ Powerful

- ▶ 数式，引用，図，footnote，参考書など
- ▶ 専門的な拡張が多い

▶ Commonly used

- ▶ 図書の作成，学術論文
- ▶ 卒論，修論，博士論

▶ Flexible, extensible

- ▶ 独自の新しい命令，環境，パッケージが作れる

LaTeXの利用

▶ メインサイト

- ▶ <https://www.latex-project.org>

▶ 独自のコンピュータ

- ▶ MacOS: MacTeX <https://tug.org/mactex/>
- ▶ Windows: MiKTeX <https://miktex.org/>

▶ ウェブアップ

- ▶ **Overleaf:** <https://ja.overleaf.com/>
- ▶ **CloudLatex:** <https://cloudlatex.io/>

LaTeX 対 Word

▶ LaTeXのメリット

- ▶ 安定をした
- ▶ 学界で一般に使っている
特に：数学，統計学，物理
- ▶ 慣れた後，楽に使える
- ▶ 長所：
数式が多い，引用が多い

▶ Wordのメリット

- ▶ WYSIWYG (見た形をそのまま)
- ▶ 大学や研究所以外は使われている
- ▶ はじめに習い易い
- ▶ 長所：
テーブル（表）が多い

LaTeXの考え方

▶ 基本

- ▶ **内応に集中**して，デザインなどをLaTeXに任せる．
- ▶ 最初は内応だけを書いて，最後にデザインを調整する．
- ▶ 基本的に**形をLaTeXに任せる**．

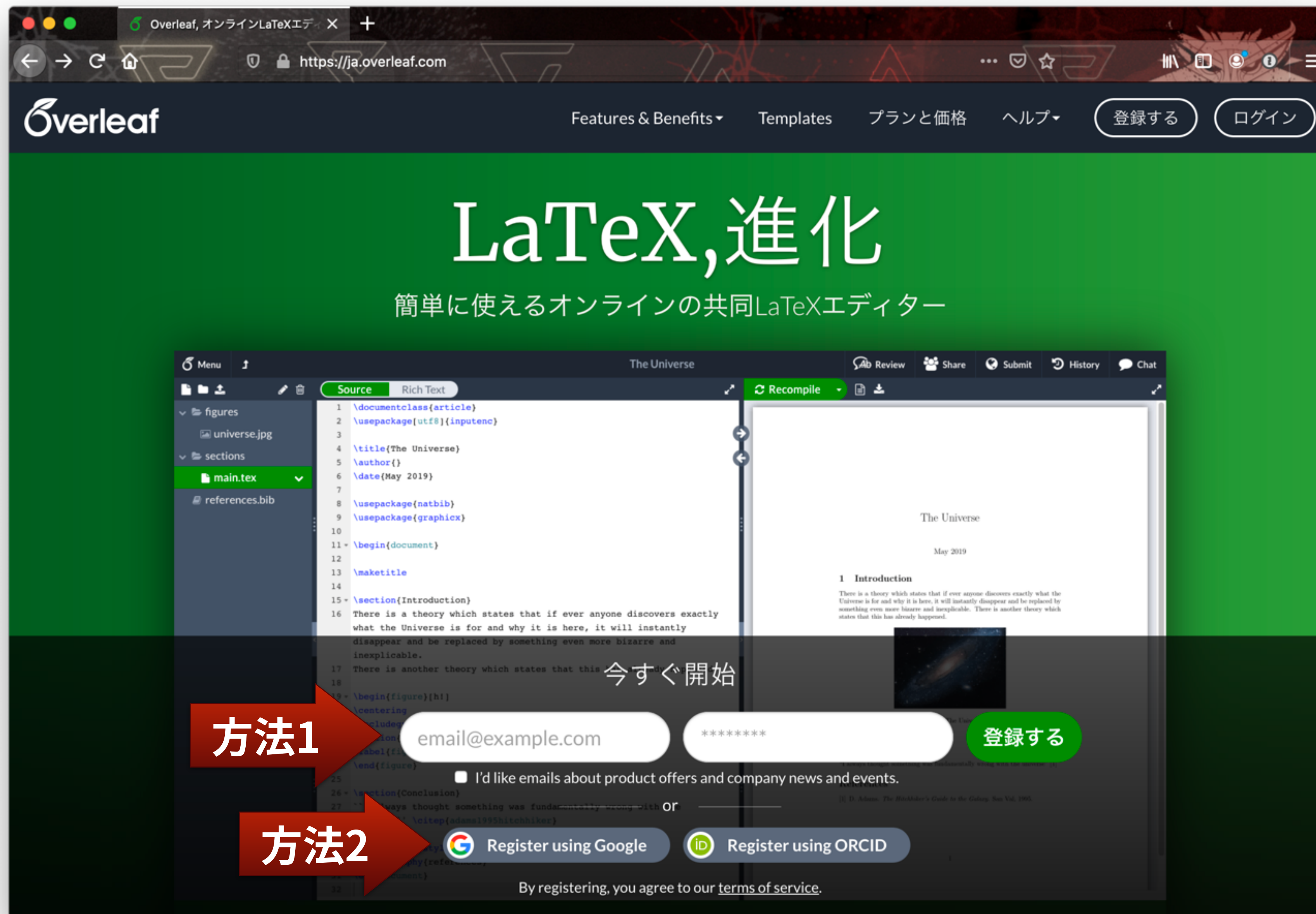
▶ 使い方

- ▶ 1. 「report.tex」などのソースファイルを作成
- ▶ 2. LaTeXでコンパイルする（処理させる）
- ▶ 3. エラーがあれば，直して，2.に戻る
- ▶ 4. 結果ファイルを見る，例：report.pdf

Let's turn a new...

Overleaf

Overleaf — 登録



Overleaf, オンラインLaTeXエディター

https://ja.overleaf.com

Overleaf

Features & Benefits ▾ Templates プランと価格 ヘルプ ▾ 登録する ログイン

LaTeX,進化

簡単に使えるオンラインの共同LaTeXエディター

Menu ↑ The Universe Review Share Submit History Chat

Source Rich Text Recompile

figures
universe.jpg
sections
main.tex
references.bib

```

1 \documentclass{article}
2 \usepackage[utf8]{inputenc}
3
4 \title{The Universe}
5 \author{}
6 \date{May 2019}
7
8 \usepackage{natbib}
9 \usepackage{graphicx}
10
11 \begin{document}
12
13 \maketitle
14
15 \section{Introduction}
16 There is a theory which states that if ever anyone discovers exactly
17 what the Universe is for and why it is here, it will instantly
18 disappear and be replaced by something even more bizarre and
19 inexplicable.
20 There is another theory which states that this
21
22 \begin{figure}[h!]
23 \centering
24 \includegraphics[width=10cm]{universe.jpg}
25 \caption{The Universe}
26 \end{figure}
27
28 \section{Conclusion}
29 Adams thought something was fundamentally wrong with our
30 \citet{adams1985hitchhiker}
31
32 \end{document}

```

The Universe

May 2019

1 Introduction

There is a theory which states that if ever anyone discovers exactly what the Universe is for and why it is here, it will instantly disappear and be replaced by something even more bizarre and inexplicable. There is another theory which states that this has already happened.

universe.jpg

今すぐ開始

方法1

email@example.com ***** 登録する

☐ I'd like emails about product offers and company news and events.

方法2

Register using Google Register using ORCID

By registering, you agree to our [terms of service](#).

Overleaf – プロジェクト作成



Overleaf によろこ!

LaTeXは初めてですか? まずは次のことから始めてください [テンプレート](#) または [LaTeXヘルプガイド](#)

1 Create First Project

- 空のプロジェクト
- プロジェクト例
- プロジェクトのアップロード
- GitHubからインポート

テンプレート

- Academic Journal
- Book
- Formal Letter
- Homework Assignment
- Poster
- Presentation
- Project / Lab Report
- Résumé / CV
- Thesis
- すべて表示

3: プロジェクト名を「First Project」

4: 「作成」をクリック

Overleaf – インターフェイス

設定・
ファイルを
ダウンロード

プロジェクト一覧へ戻る

見本を再生

ダウンロード


 ソース


 PDF

操作

プロジェクトのコピー

文字数

同期

Dropbox

Git

GitHub

設定

コンパイラ pdfLaTeX

TeX Live version 2019

主要文書 main.tex

スペルチェック English

メニュー








main.tex

references.bib

universe.jpg

Source

Rich Text

1 `\documentclass{article}`
 2 `\usepackage[utf8]{inputenc}`
 3
 4 `\title{IL-First Project}`
 5 `\author{Defago Xavier}`
 6 `\date{July 2020}`
 7
 8 `\usepackage{natbib}`
 9 `\usepackage{graphicx}`
 10
 11 `\begin{document}`
 12
 13 `\maketitle`
 14
 15 `\section{Introduction}`
 16 There is a theory which states that if ever anyone discovers
 exactly what the Universe is for and why it is here, it will
 instantly disappear and be replaced by something even more
 bizarre and inexplicable.
 17 There is another theory which states that this has already
 happened.
 18
 19 `\begin{figure}[h!]`
 20 `\centering`
 21 `\includegraphics[scale=1.7]{universe}`
 22 `\caption{The Universe}`
 23 `\label{fig:universe}`
 24 `\end{figure}`
 25
 26 `\section{Conclusion}`
 27 ``I always thought something was fundamentally wrong with the
 universe" `\citep{adams1995hitchhiker}`
 28
 29 `\bibliographystyle{plain}`
 30 `\bibliography{references}`
 31 `\end{document}`
 32

リコンパイル




IL-First Project
 Defago Xavier
 July 2020

1 Introduction

There is a theory which states that if ever anyone discovers exactly what the Universe is for and why it is here, it will instantly disappear and be replaced by something even more bizarre and inexplicable. There is another theory which states that this has already happened.



Figure 1: The Universe

2 Conclusion

"I always thought something was fundamentally wrong with the universe" [1]

References

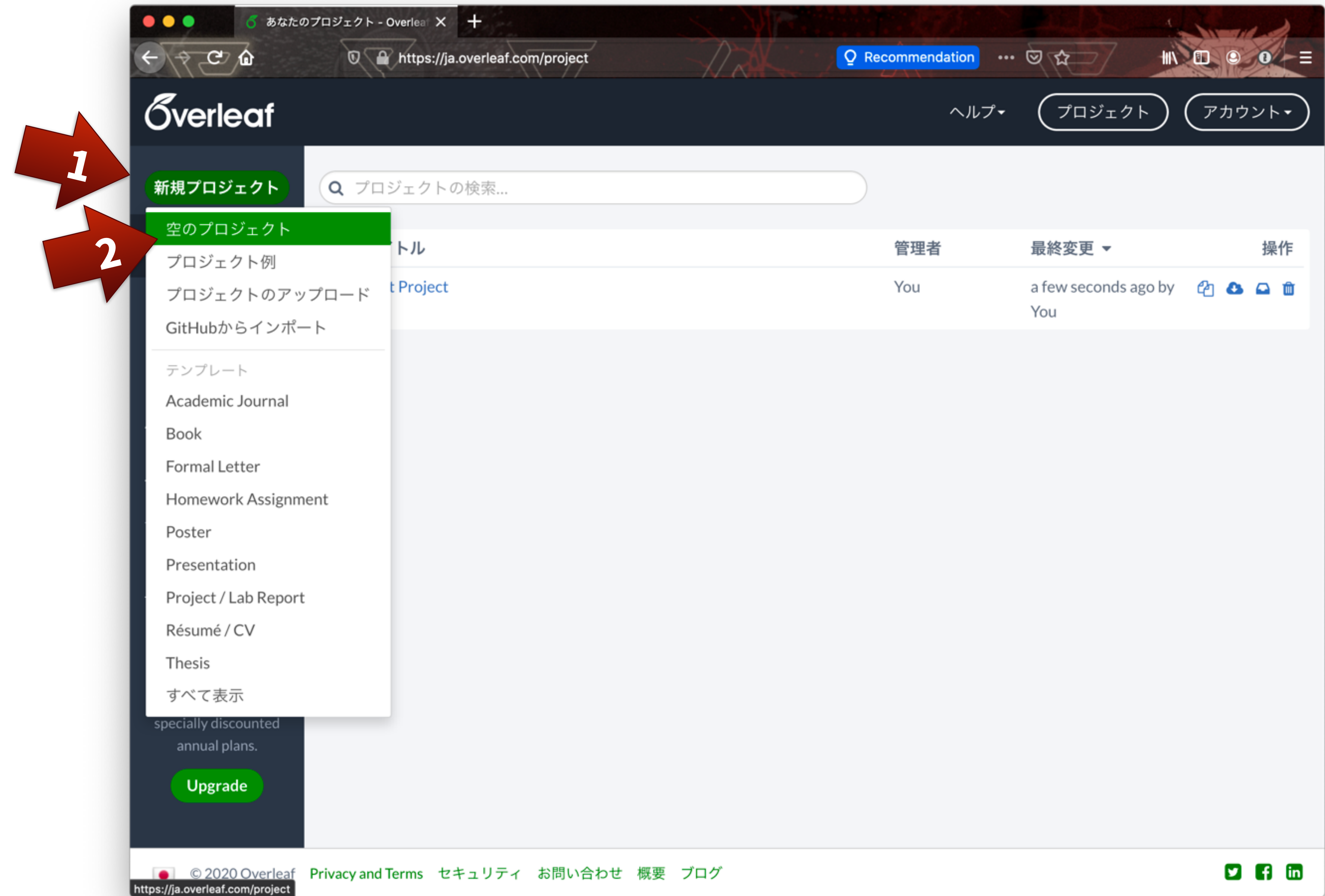
[1] D. Adams. *The Hitchhiker's Guide to the Galaxy*. San Val, 1995.

1

Source File

Output File

Overleaf — 空のプロジェクト



The screenshot shows the Overleaf website interface. At the top, there's a navigation bar with the Overleaf logo, a search bar, and buttons for 'Recommendation', 'ヘルプ' (Help), 'プロジェクト' (Project), and 'アカウント' (Account). Below the navigation bar, there's a section for '新規プロジェクト' (New Project) with a search bar and a dropdown menu. The dropdown menu is open, showing various project templates. A red arrow labeled '1' points to the '新規プロジェクト' button, and another red arrow labeled '2' points to the '空のプロジェクト' (Empty Project) option in the dropdown menu. The main content area shows a table with project details, including a table header with '管理者' (Manager) and '最終変更' (Last Modified).

プロジェクト	管理者	最終変更	操作
Project	You	a few seconds ago by You	複製 ダウンロード 共有 削除

LaTeX入門の演習

単純例

▶ 命令は\ から始まる

\commandname

{...}は必須な引数

[...]は任意の引数

▶ \documentclass{...}

defines the document style

▶ \title, \author, \date

タイトル名, 作家名の設定

▶ \begin{document} ... \end{}

その間が内応となる

▶ \maketitle

設定したタイトル名などで, タイトルの部分を作る

```
\documentclass{article}
```

```
\title{My first LaTeX document}
```

```
\author{Xavier Defago}
```

```
\begin{document}
```

```
\maketitle
```

```
This is my first document written in LaTeX.
```

```
It looks complex but as we will see, it is not so
difficult to write good documents using LaTeX!
```

```
\end{document}
```

単純例

```
\documentclass{article}
```

```
\title{My first LaTeX document}
```

```
\author{Xavier Defago}
```

```
\begin{document}
```

```
\maketitle
```

```
This is my first document written in LaTeX.  
It looks complex but as we will see, it is not so  
difficult to write good documents using LaTeX!
```

```
\end{document}
```

My first LaTeX document

Xavier Defago

July 15, 2020

This is my first document written in LaTeX. It looks complex but as we will see, it is not so difficult to write good documents using LaTeX!

LaTeX

宿題3