LaTeX 2ε Problems for CSW

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1 Problems

These exercises are designed to be run using the TeXlive distribution. It is best to use pdflatex (rather than latex), and view the output using a PDF viewer.

1. Create an A4 document of the class article whose title is 'Greetings', that has you as the author and today's date. The body should have two sections, titled 'Welcome' and 'Farewell', in that order. Each section should have two sentences. The first should be one of 'Hello world' or 'Goodbye world' as appropriate. The second should be a sentence of the shape 'See also Section n', where 'n' is the number of the other section. The numbers should not appear in your source [hint: use symbolic labels and references].

2. Create an identical document, but make it of class scrartcl. Do you notice a difference in the output? Which do you prefer?

3. In the document you have created so far, you should have typed 'See also' twice. Introduce a macro, \sa, to typeset 'See also', and use it in both places (do not forget to protect the following space).

4. In the document you have created so far, you should have typed the structure '<salute>world.' twice, once for salutation 'Hello' and once for salutation 'Goodbye'. Introduce a macro, \sw, with one parameter that is the salutation, and use it in both places.

5. If the package hyperref is loaded[1] then, as well as automatically generating bookmarks and internal links, the macro \autoref{label} is available. This macro knows the kind of reference that a label refers to, so you do not have to type 'Section~', and so on. Make your document load the package, and modify your document to use \autoref rather than **ref**.

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[1] As UoYCSproject does.

6. Your document consists of one structure repeated twice. The structure has three variables. In the first instance it is instantiated with Welcome, Hello and Farewell; in the second it is instantiated with Farewell, Goodbye and Welcome. Create a 3-parameter macro, \st, that captures this structure and use it. The body of your document should be \maketitle followed by two calls to your new macro, and nothing else.[2]

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[2]If you wish you can add a package to change fonts from the default set; to create a good PDF document this should always be done. Suitable packages are mathpazo (Palatino) and mathptmx (Times Roman), both combined with helvet,courier. The package microtype is also recommended.

2 Possible solutions

1. This assumes I wrote it today. Your answer should have a different name and date... It may also have different labels.

```
\documentclass[a4paper]{article}
\title{Greetings}
\author{Jeremy Jacob}
\begin{document}
\maketitle
\section{Welcome}\label{sec:Welcome}
Hello world.  See also Section~\ref{sec:Farewell}.
\section{Farewell}\label{sec:Farewell}
Goodbye world.  See also Section~\ref{sec:Welcome}.
\end{document}
```

2. For completeness:

```
\documentclass[a4paper]{scrartcl}
\title{Greetings}
\author{Jeremy Jacob}
\begin{document}
\maketitle
\section{Welcome}\label{sec:Welcome}
Hello world.  See also Section~\ref{sec:Farewell}.
\section{Farewell}\label{sec:Farewell}
Goodbye world.  See also Section~\ref{sec:Welcome}.
\end{document}
```

3.

```
\documentclass[a4paper]{article}
\title{Greetings}
\author{Jeremy Jacob}
\newcommand{\sa}{See also}
\maketitle
\begin{document}
\section{Welcome}\label{sec:Welcome}
Hello world.  \sa\ Section~\ref{sec:Farewell}.
\section{Farewell}\label{sec:Farewell}
Goodbye world.  \sa\ Section~\ref{sec:Welcome}.
\end{document}
```

4.

```
\documentclass[a4paper]{article}
\title{Greetings}
\author{Jeremy Jacob}
\newcommand{\sa}{See also}
\newcommand{\sw}[1]{#1 world.}
\begin{document}
\maketitle
\section{Welcome}\label{sec:Welcome}
\sw{Hello} \sa\ Section~\ref{sec:Farewell}.
\section{Farewell}\label{sec:Farewell}
\sw{Goodbye} \sa\ Section~\ref{sec:Welcome}.
\end{document}
```

5.

```
\documentclass[a4paper]{article}
\usepackage{hyperref}
\title{Greetings}
\author{Jeremy Jacob}
\newcommand{\sa}{See also}
\newcommand{\sw}[1]{#1 world.}
\begin{document}
\maketitle
\section{Welcome}\label{sec:Welcome}
\sw{Hello} \sa\ \autoref{sec:Farewell}.
\section{Farewell}\label{sec:Farewell}
\sw{Goodbye} \sa\ \autoref{sec:Welcome}.
\end{document}
```

6.

```latex
\documentclass[a4paper]{article}
\usepackage{hyperref}
\title{Greetings}
\author{Jeremy Jacob}
\newcommand{\sa}{See also}
\newcommand{\sw}[1]{#1 world.}
\newcommand{\st}[3]{%
  \section{#1}\label{sec:#1}\sw{#2} \sa\ \autoref{sec:#3}.%
}
\begin{document}
\maketitle
\st{Welcome}{Hello}{Farewell}
\st{Farewell}{Goodbye}{Welcome}
\end{document}
```