Edge Hill University

CIS9999 – Example Module

BSc Web Design & Development

WebDev Report Template

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Abstract

Your abstract must be placed between the `\begin{abstract}` and `\end{abstract}` tags. The abstract is a 200 - 300 word concise and clear summary of:

1. What you set out to do and why,

2. How you did it,

3. What you found,

4. (Optionally any recommendations).

A reader should be able to read your abstract and get a good understanding of what the report covers, without having to read the whole report.

1 Introduction

Your report must always start with an introduction that identifies and defines the topic, issue, or area of concern for the report.

1.1 What goes in it?

- Description of your area of investigation and theoretical perspective, which may include why the topic is important, interesting, problematic or relevant to you/the assignment.

- The scope and parameters of your topic – what does your report include and exclude?

- An explanation of the approach you intend to take and how you intend to accomplish this – the basis for your selection of the literature

- an outline of your topic

1.2 How long should it be?

Long enough so that the reader has a sufficient understanding of the topic to understand the rest of your report. At the same time it should not go into excessive detail. In general, probably between one and two pages.

1.3   When to write it?

It is generally best to create a draft statement at the beginning so that you know what you are planning to do. Then write the final version at the end, after writing the main body and discussion. This ensures that you do not have to constantly rewrite it as you write your main body text and also that the two fit together better.

2 Some LaTeX Examples

LaTeX is a powerful type-setting and layouting software and covering all of its functionality is beyond the scope of this document. However, some examples of commonly used commands and features are listed below, to help you get started.

2.1 Sections

Use `\section{Your Section Title}` and `\subsection{Your subsection title}` commands to organize your document. LaTeX handles all the formatting and numbering automatically.

If you place a `\label{label-name}` after a `\section{}` or `\subsection{}`, then you can use `\ref{label-name}` to create a reference to it. This is often useful in the introduction (section 1) to refer to parts of the report.

2.2 Comments

Comments can be added to the margins of the document using the todo command, as shown in the example on the right. You can also add inline comments too:

> This is an inline comment.

Here's a comment in the margin!

2.3 Tables and Figures

LaTeX provides functionality for inserting both tables and images into your report.

2.3.1 Tables

Use the `\begin{table}` and `\begin{tabular}` commands to create basic tables. See Table 1, for an example.

The table definition defines the actual table container. It is important to remember that LaTeX was design to create readable layouts. This means that while you can control what your table looks like, you cannot control where in the document the table is placed. That is why you must always use the `\caption{Table caption}` command to give the table a brief summary

3

Table 1: An example table.

Item	Quantity
Widgets	42
Gadgets	13

Table 2: A larger example table with centered.

Item	Quantity	third	Forth
Widgets	42	?	?
Gadgets	13	?	?
Thingymabobs	13	?	?

that explains what it shows. After the `\caption{}` command you can use the same `\label{table-label}` command to give the table a unique label. As with any other `\label{}`, you can then use `\ref{table-label}` to add a reference from the text to the actual table, as is done above.

The table content is defined in the `\begin{tabular}` `{column definition}`. The column definition specifies how many columns your table has and how text in each column is aligned. Columns can be (l)eft aligned, (c)entered, (r)ight-aligned using the three letters `l`, `c`, or `r`. The number of these alignment letters in the column definition defines how many columns the table has (see Table 2). You can also create vertical separator lines by adding | characters.

Finally in the actual table definition itself, the individual columns in each row are separated using the `&` character. You must make sure that you define exactly as many columns in each row as you did in the column definition, otherwise LaTeX will throw an error. Each line must be ended by a double backslash `\\`, which is the LaTeX definition for a new line.

Horizontal lines are defined using the `\toprule{}`, `\midrule{}`, and `\bottomrule{}` commands. `\toprule{}` should be used at the top of the table and `\bottomrule{}` at the bottom. The `\midrule{}` should be used for all other horizontal lines, although you should generally try to keep these to a minimum.

Figure 1: This is a figure caption.

2.3.2 Images

LaTeX can handle JPEG, PNG, or PDF images. They are generally used in a similar way to tables, but are somewhat simpler. The image with its caption (see Figure 1) are defined using the `\begin{figure}` command. As with tables, the image will be placed by LaTeX and thus you should use the `\caption{The figure's caption}` command to include a brief description of the image's content. The `\label{figure-label}` works as for tables.

The image itself is loaded using the `\includegraphics[options]{filename}` command. The filename is the path from where the `.tex` file is, to the location of the image file. The options parameter allows you to modify how the image is displayed. Common parameters are the `width` parameter, which lets you specify how wide the image should be and the `scale` parameter, which lets you scale the image up (values > 1) or down (values < 1).

2.4 Mathematics

LaTeX is great at typesetting mathematics. Let $X_1, X_2, \ldots, X_n$ be a sequence of independent and identically distributed random variables with $E[X_i] = \mu$

and $\text{Var}[X_i] = \sigma^2 < \infty$, and let

$$S_n = \frac{X_1 + X_2 + \cdots + X_n}{n} = \frac{1}{n} \sum_i^n X_i$$

denote their mean. Then as n approaches infinity, the random variables $\sqrt{n}(S_n - \mu)$ converge in distribution to a normal $\mathcal{N}(0, \sigma^2)$.

2.5 Lists

LaTeX provides both enumerated lists using the `\begin{enumerate}` command and bullet lists using `\begin{itemize}`. Individual items in both types of lists are defined using the `\item` command.

1. Like this,

2. and like this.

- Like this,

- and like this.

3 Code inclusion

In general you should not include major amounts of code in your report, as the code is generally submitted separately. However, if you need to show some specific code that shows how you solved a very specific problem or overcame a coding issue, then you should include a code sample.

Code samples are included using the `\begin{lstlisting}` [options] command. In general the `options` are used to define the language for syntax highlighting using `language=language_name`.

3.1 PHP

PHP code is highlighted by setting `language=php`

```php
1  <?php
2  /* this is a php comment */
3  $username = $_POST["username"];
```

```
 4  $password = $_POST["password"];
 5
 6  $pass = md5($password);
 7
 8  // another comment
 9  if($username=="dave" and
10      $pass=="5f4dcc3b5aa765d61d8327deb882cf99")
11  {
12      echo "Hello␣David␣Walsh";
13  }
14  else
15  {
16      echo "Login␣now";
17  }
18  ?>
```

3.2 HTML, CSS, & JavaScript

Including mixed HTML, CSS, & JavaScript code samples is done by setting
style=htmlcssjs.

```
 1  <!DOCTYPE html>
 2  <html>
 3    <head>
 4      <title>Listings Style Test</title>
 5      <meta charset="UTF-8">
 6      <style>
 7        /* CSS Test */
 8        * {
 9          padding: 0;
10          border: 0;
11          margin: 0;
12        }
13      </style>
14      <link rel="stylesheet" href="css/style.css" />
15    </head>
16    <header> hey </header>
17    <article> this is a article </article>
18    <body>
19      <!-- Paragraphs are fine -->
```

```
20      <div id="box">
21        <p>Hello World</p>
22        <p>Hello World</p>
23        <p id="test">Hello World</p>
24        <p></p>
25      </div>
26      <div>Test</div>
27      <!-- HTML script is not consistent -->
28      <script src="js/benchmark.js"></script>
29      <script>
30        function createSquare(x, y) {
31          // This is a comment.
32          var square = document.createElement('div');
33          square.style.width = square.style.height = '
              50px';
34          square.style.backgroundColor = 'blue';
35
36          /*
37           * This is another comment.
38           */
39          square.style.position = 'absolute';
40          square.style.left = x + 'px';
41          square.style.top = y + 'px';
42
43          var body = document.getElementsByTagName('
              body')[0];
44          body.appendChild(square);
45        };
46
47        // Please take a look at +=
48        window.addEventListener('mousedown', function(
              event) {
49          var x = event.touches[0].pageX;
50          var y = event.touches[0].pageY;
51          var lookAtThis += 1;
52        });
53      </script>
54    </body>
55 </html>
```

3.3   JavaScript

JavaScript code is highlighted by setting `language=javascript`

```
1  function hello(name) {
2      alert('Hello␣' + name);
3  }
4
5  hello('Mark␣&␣Dave');
```

3.4   Python

Python code is highlighted by setting `language=python`

```
1  def hello(name) {
2      alert('Hello␣' + name);
3  }
4
5  hello('Mark␣&␣Dave');
```

4 Clean document writing - external sections

You do not have to have all of your content in one file, you can create each section/chapter of your document in its own separate tex file and then simply include it where you wish it to be situated in the main document. This allows for your writing to be easier to locate and error correct, plus it makes your typing/coding much cleaner and it also feels a little object oriented.

The section command needs to be in the separate document or else you will force the new section to be a page-break after the title.

To then include the new file in your main `.tex` file, use the `\include{filename without extension}` command.

5 Citations and References

LaTeX makes working with citations and references very easy. You define all your references in a file with the extension `.bib`. You can either create this bibtex file by hand or you can use an online tool like "Cite this For Me.com" (Me, 2015) and use their handy export tool.

Each entry in the bibtex file has a unique identifier, which you can then use to reference that entry from your text. There are two ways to reference the entries. You can use the `\citet{identifier}` command if you want the reference to be included directly in the text. For example to indicate that Baeza-Yates et al. (1999) wrote one of the definitive books in this area. Alternatively, you can use the `\citep{identifier}` command to place the reference in parenthesis. This is useful if you want to refer to an idea that is mentioned in a source, such as the concept of the information journey (Bates, 1989) or query analysis (Belkin et al., 2003).

You load your bibtex file by adding the `\addbibresource{bibtext filename with extension}` command before the `\begin{document}` (in what is known as the preamble). To output the bibliography, use `\printbibliography{}` anywhere in the main text. It is important to note here that only those entries in the bibtex file that you actually refer to in the main text are included in the bibliography.

References

BAEZA-YATES, R.; RIBEIRO-NETO, B., et al., 1999. *Modern information retrieval*. ACM press New York.

BATES, M. J., 1989. The design of browsing and berrypicking techniques for the online search interface. *Online Information Review*. Vol. 13, no. 5, pp. 407–424.

BELKIN, N. J.; KELLY, D.; KIM, G.; KIM, J.-Y.; LEE, H.-J.; MURESAN, G.; TANG, M.-C.; YUAN, X.-J.; COOL, C., 2003. Query length in interactive information retrieval. In: *Query length in interactive information retrieval. Proceedings of the 26th annual international ACM SIGIR conference on Research and development in informaion retrieval*, pp. 205–212.

ME, C. T. F., 2015. *Cite This For Me: Harvard, APA, MLA Reference Generator*. **urlalso**: `https://www.citethisforme.com/cite/website`.