SIT774 Web Technologies and Development

Workshop Week 1

Presenter: Ran Zhang

Unit chair: Michael Hobbs

Instructor: Ran Zhang & Ruyi Li



Welcome to SIT774

- This unit is a part of the foundation units in the postgraduate IT courses at Deakin.
- This unit will focus on:
 - understanding latest web technologies
 - client-side and server-side programming
 - developing web applications.



Timetable

• Online Class (All): Mon 13:00-13: 50 (room: Teams, instructor: Michael Hobbs)

Burwood campus:

- Workshop 1: Tue 08:00-09:50 (room: LC4.101, instructor: Ran Zhang)
- Workshop 2: Wed 16:00-17:50 (room: B2.22, instructor: Ran Zhang)
- **Workshop 3**: Wed 10:00-11:50 (room: LC2.100, instructor: Ruyi Li)
- Online Workshop: Mon 20:00-21:50 (room: Teams, instructor: Ran Zhang)
- HelpHub Session: Wed 20:00-21:00

Type/Stream/Recor	ded	Day	Start/End	Campus	Location	Teaching weeks
Lecture 1 - Online	01	Mon	13:00-13:50			01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11
Workshop 1 - BYOD	01	Tue	08:00-09:50	Burwood - Elgar Road	LC4.101	01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11
Workshop 1 - BYOD	02	Tue	16:00-17:50	Burwood	B2.22	01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11
Workshop 1 - BYOD	03	Wed	10:00-11:50	Burwood - Elgar Road	LC2.100	01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11

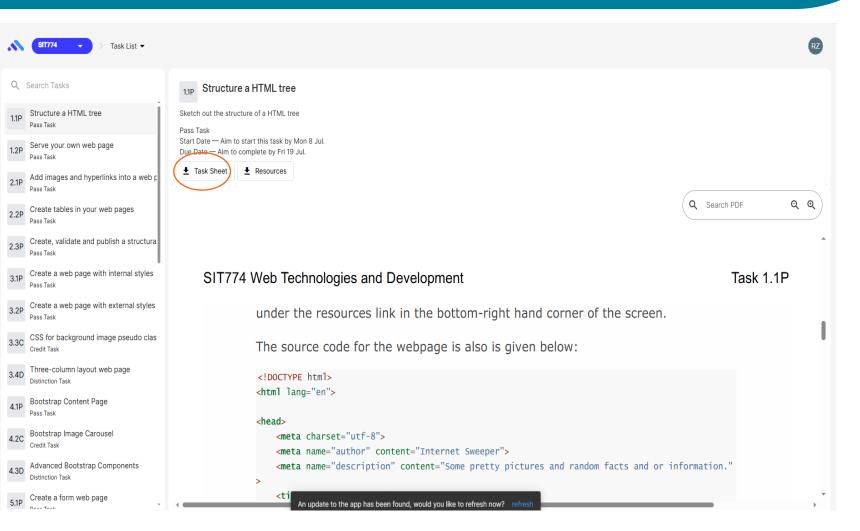
Geelong campus:

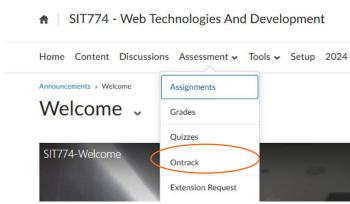
- Workshop: Tue 09:00-10:50 (room: KA4.413)
- Workshop: Tue 11:00-12:50 (room: KA4.412)

Workshop 1 - BYOD	01	Tue	09:00-10:50	Waurn Ponds	KA4.413	01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11
Workshop 1 - BYOD	02	Tue	11:00-12:50	Waurn Ponds	KA4.412	01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11



OnTrack

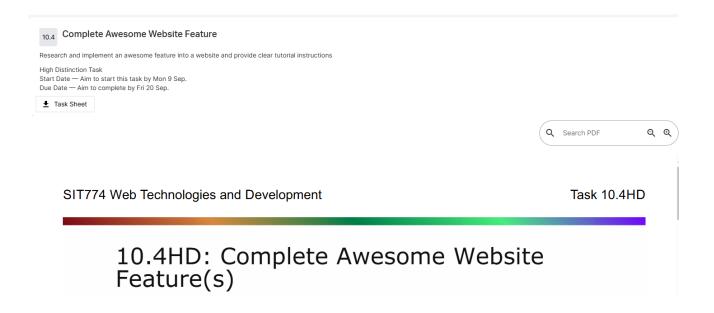




- Set your target grade
- Communicate only through OnTrack (submissions, discussions)
- Request extensions before deadlines

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Ontrack task-10.4HD



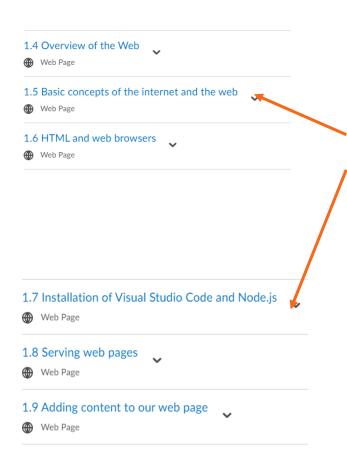
Please note:

In Ontrack tasks, we only have one HD task. This task is used to determine whether or not you can reach the HD level, and it does not allow for resubmission.

You will only have one chance to submit your assignment and receive the appropriate grade.



WEEK 1: BASICS OF THE WEB AND HTML



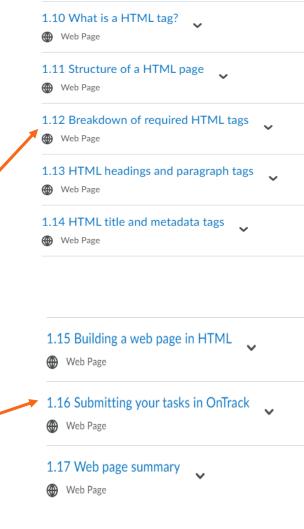
Introduction (1.1-1.3): Find out more about the course and its unit chair and learn how to use OnTrack to access and submit your assessment tasks.

Let's begin exploring the Web (1.4-1.6): Explore what the web is and how it works at a fundamental level.

Building a web page (1.7-1.9): Install the tools needed for creating and publishing your web pages and start creating your first web page.

HTML (1.10-1.14): Discover how we structure web pages semantically using the HyperText Markup Language (HTML) and the basic required tags for creating web pages.

Wrap up (1.15-1.17): Reflect on what you have learned this week and get started on your tasks.





Key concepts

1.4 – Overview of the Web

- Browser
- Website
- Server
- URL
- IP address

1.5 – Basic concepts of the Internet and the Web

- The Internet
- World Wide Web
- Client/Server architecture
- IP address
- DNS
- URL

1.6 – HTML and Web browsers

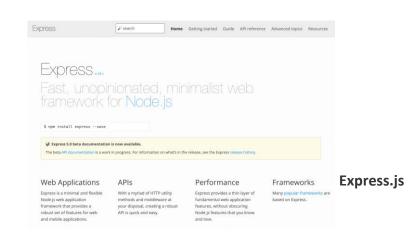
- HTML
- Web browsers
- How do HTML and web browsers relate?

1.7 – Installation of Visual Studio Code and Node.js

- Download Visual Studio Code
- Download Node.js

1.8 – Serving Web pages

Download the <u>Node.js starter template</u>





Front-end design (HTML, CSS)

Visual Studio Code



Back-end design (Javascript web server) Node.js



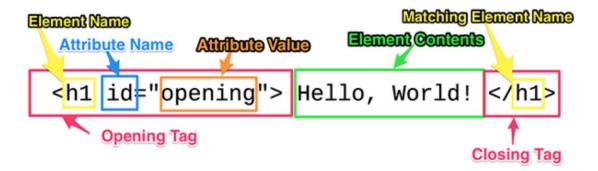
Key concepts

1.10 – What is a HTML tag?

HTML tag syntax

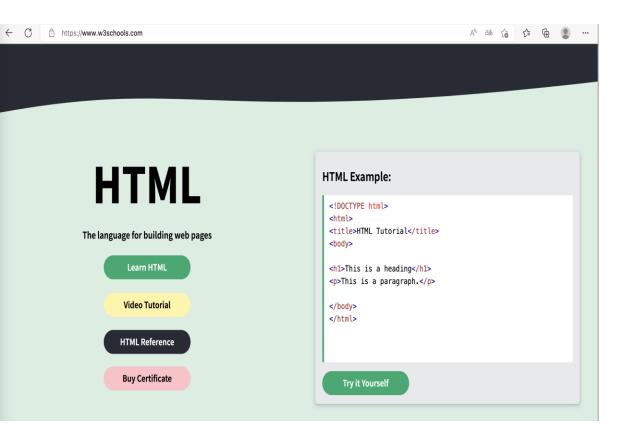
Tag	Description			
<html> </html>	Declares the Web page to be written in HTML			
<head> </head>	Delimits the page's head			
<title> </title>	Defines the title (not displayed on the page)			
<body> </body>	Delimits the page's body			
<h n=""> </h>	Delimits a level <i>n</i> heading			
 	Set in boldface			
<i> </i>	Set in italics			
<center> </center>	Center on the page horizontally			
	Brackets an unordered (bulleted) list Brackets a numbered list			
 				
 	Brackets an item in an ordered or numbered list			
 	Forces a line break here			
	Starts a paragraph			
<hr/>	Inserts a horizontal rule			
	Displays an image here			
 	Defines a hyperlink			

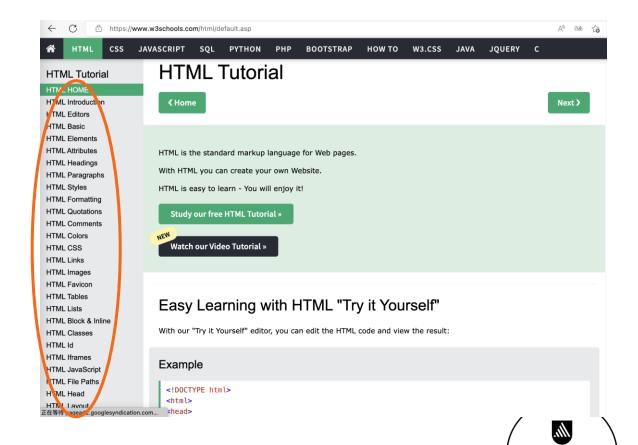
Elements, Attributes and Contents





W3schools.com (https://www.w3schools.com)





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1.11 HTML Structure

A simple HTML document example:

```
<!DOCTYPE html>
<html>
<head>
<title> Page title </title>
</head>
<body>
```



<!DOCTYPE html>

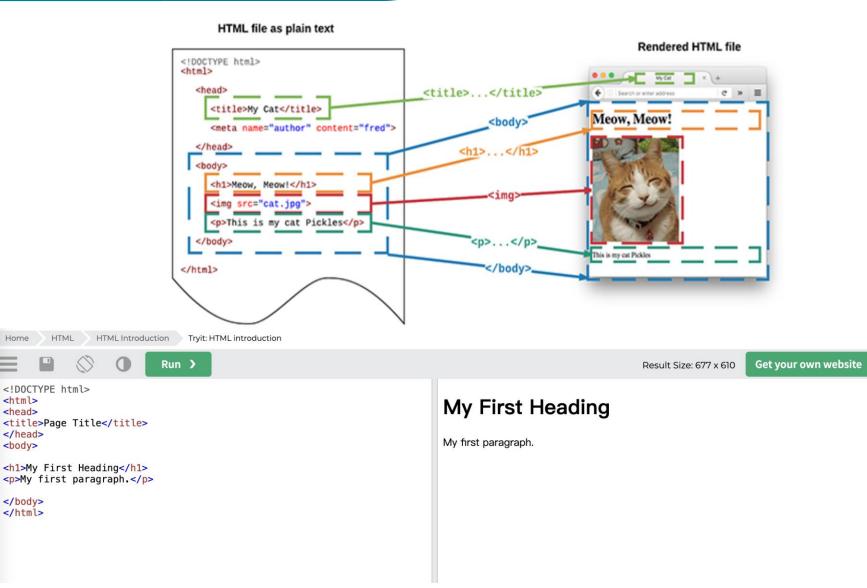
<html>

<head>

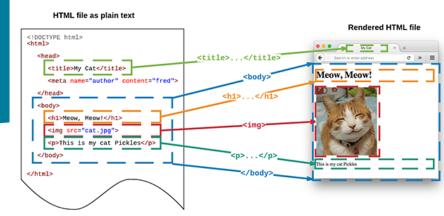
</head>

<body>

</body> </html>



The cat website visual representation

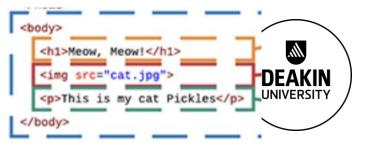


This image indicates the visual representation of a basic HTML as rendered by a web browser. We can see that the browser only renders:

•the <title> element, as the tab title



•everything between the start of the <body> element and end of the <body> element, which in the example below would be the <h1>, and <p> elements.



HTML is a tree of elements

In the tree below, which represents the cat HTML file we saw above, the required elements of a HTML page are highlighted in yellow.

The same goes for the <title> and <meta> tags inside the <head> (these are TABbed in twice) and likewise for the <h1>, and tags inside the <body> of our page.

When we close a tag on a new line, like </head> and </body>, we usually remove our tabbing to keep it in line with the tree above.

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1.12 HTML Breakdown

<!DOCTYPE html>

Declaring the document type as HTML (under HTML5)

<html>

Root of the HTML structure (rendering range)

<head>

Meta data

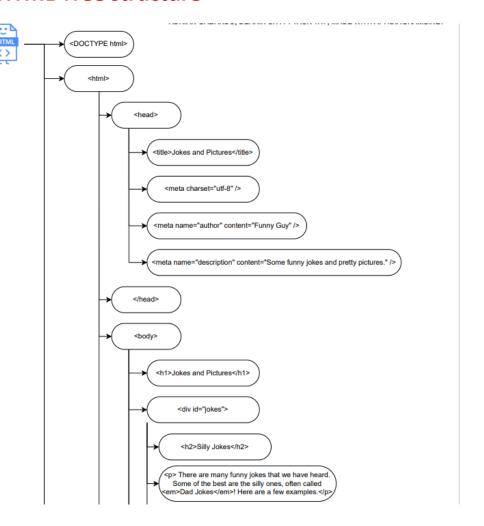
<body>

Content to be rendered

- headings <h1>...<h6>
- paragraphs
- linebreaks

- ...

HTML Tree structure





For Ontrack task 1.1P

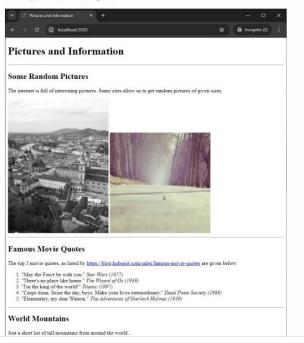
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Task 1.1P

1.1P: Structure a HTML tree

Tasks

A simple webpage is shown below that has two pretty pictures, along with some interesting/random facts from the internet. The page is constructed using a number of common HTML elements: headings, divs, paragraphs, lists (unordered and ordered), hrefs, and images.



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Task 1.1P

under the resources link in the bottom-right hand corner of the screen.

The source code for the webpage is also is given below:

```
<!DOCTYPE html>
<html lang="en">
<head>
   <meta charset="utf-8">
   <meta name="author" content="Internet Sweeper">
   <meta name="description" content="Some pretty pictures and random facts and or information."</pre>
   <title>Pictures and Information</title>
</head>
   <h1>Pictures and Information</h1>
   <div id="images">
       <h2>Some Random Pictures</h2>
          The internet is full of interesting pictures.
           Some sites allow us to get random pictures of given sizes.
       <img src="https://picsum.photos/300/400">
       <ima src="https://picsum.photos/300/300">
   <hr>
   <div id="quotes">
       <h2>Famous Movie Quotes</h2>
          The top 5 movie quotes, as listed by <a href="https://blog.hubspot.com/sales/famous-
movie-quotes">https://blog.hubspot.com/sales/famous-movie-quotes</a>
           are given below:
       <01>
               "May the Force be with you."
               <em>Star Wars (1977)
           "There's no place like home."
               <em>The Wizard of Oz (1939)</em>
           <1i>>
              "I'm the king of the world!"
               <em>Titanic (1997)</em>
           "Carpe diem. Seize the day, boys. Make your lives extraordinary."
               <em>Dead Poets Society (1989)</em>
           </1i>
               "Elementary, my dear Watson."
```

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Task 1.1P

Sketch out the **HTML tree** for this page, similar to that shown in the "1.12 Structure of a HTML page". Identify the set of tags (from both the <head> and <body> sections).

You can do this by creating a draft on a bit of paper, and then convert the final into electronic form using the Drawing Tools in MS Word (or similar).

What will you submit?

You should submit a screenshot or drawing (image) in PDF form, of your tree for the HTML above.



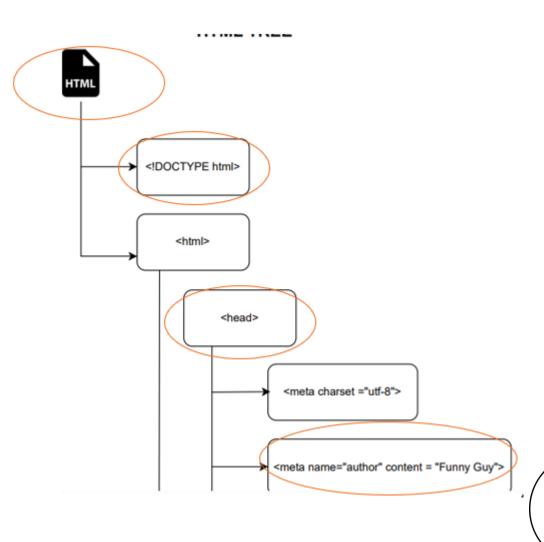
You need to draw a Tree diagram of a given web page, Remember to add closing tags for paired HTML elements!

Tips for Ontrack 1.1p task

Please pay attention to Tree structure diagram!

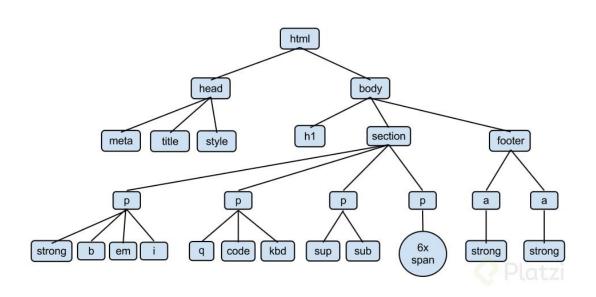
you need to:

- add <> opening tags for each HTMLelement, For example, <!DOCTYPE html>,HTML>, <body>
- add </> closing tags for head, body, and the whole HTML file
- you can use paper and pen to draw a diagram, or you can use word or PPT to draw
- You can also use flowcharts to display the tree structure, but you must add opening and closing tags.

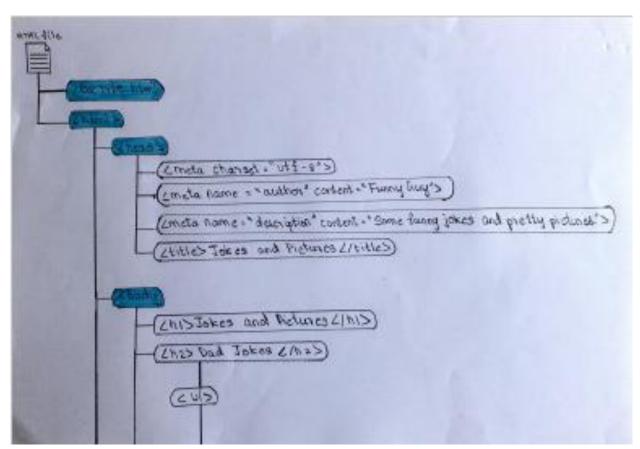


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Tree structure examples with issues



It's **Flow chat** not tree structure Without < > e.g.<html>,<head>,



Without closing tags e.g. </html>, </head>,</body>



Ontrack task 1.2p

1.2P: Serve your own web page

Tasks

In this task you are asked to write a web page that is all about you! This is a chance to explore some of the common HTML elements and to present some *general* things about yourself.

Once completed, serve your webpage using a local *Node server*, as shown in the 1.15 Building a web page in HTML video. Remember to edit the index.html file under the public_html directory. (Your webpage might look like the one in Appendix A)

Your webpage should have a <head> with the following:

- A <title> tag
- A <meta> tag that describes the author of the page.
- A <meta> tag that describes the description of the page.
- A <meta> tag sets the charset attribute to the value utf-8.

Here is a guide to the student's page shown in the picture above and what they put in their <body> tag:

- 1. Have a <h1> that has your name.
- 2. Have a <h2> that has the words "Contact Details".
- 3. Have a that lists your contact details heading, which includes:
 - A to make the text "Student ID" and "Email" stand out.
 - o Your Student ID and Email is separated with a line break,

- 4. Have a <h2> with the words "Biography".
- 5. Have a underneath that, which includes a brief biography about you.
- 6. Have another that describes:
 - o what your favourite quote is.
 - o a <blockquote> that lists the quote.
 - why this is your favourite quote.
- 7. Have a <hr> to introduce a thematic break in the document.
- 8. Have a <h2> with the words "University"
- 9. Have a <h3> with the words "My Units"
- 10. Have a that talks about the units they study:
 - For each unit, emphasise the unit code and name using the tag.
 - o For each unit code, provide an extra emphasise by using the tag.
 - Add a highlighted sentence, using the <mark> tag, listing your favourite unit.

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- 11. Have another <h3> with the words "My Hobbies".
- Have a <h4> heading for your interest areas, such as "Sports" and "Gardening".
- For every item you have, list the day and time you have that it occurs.
 Separate each class line using a line break, https://doi.org/10.100/br/.

Be as creative as you like! This is a guide for what your document should look like but you can refer to the W3Schools reference to come up with your own ideas as long as you convey similar information.

Make sure you layout your HTML properly! Use indentation (or use the VS Code inbuilt tool Format Document) to clearly show the hierarchy/sections of your code, as covered in Task 1.1P. In addition, also include comments describing the various sections of your page content, using the html tags <!-- and -->.

Task 1.2P

Workshops

On Mondays, between 8:00am to 10:00pm, I have a workshop for SIT771.

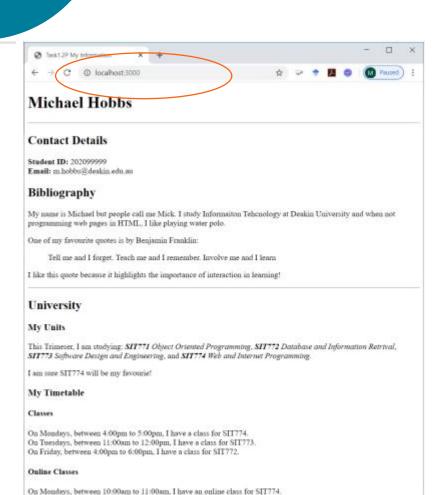
On Wednesdays, between 2:00pm to 4:00pm, I have a workshop for SIT773.

What will you submit?

You should submit:

- . A screenshot (in PDF form) of your website shown in a web browser.
 - Note: You can screen-capture the window using the inbuilt tools (Windows
 Snipping Tool, or Mac Grab tool) then print to a PDF file for submission.
 Or you could simply paste the image into a word document and print this
 to a PDF file for submission. Please make sure the PDF displays the image
 correctly and is readable.
- The source file index.html as found (and servered from) the public_html folder.

Appendix A



Example student's page

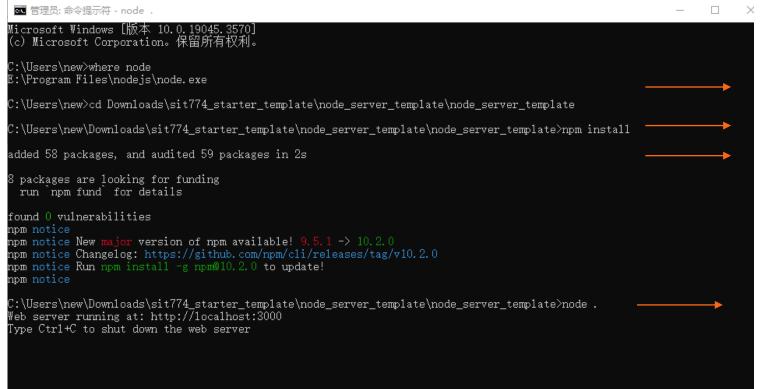
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2024/T2 2/3

2024/T2

Ontrack 1.2P task (For Windows Systems)

- 1.Download "Node.js starter template"
- 2.Create a folder, name(eg.sit774_starter_template) and drag the download documents to this folder.
- 3. Navigate to the directory (e.g. sit774_starter_template) you extracted the template to using CMD
- 4. Use the node package manager (npm) to install the dependencies inside our starter template: npm install
- 5. Run the web server by typing in node.



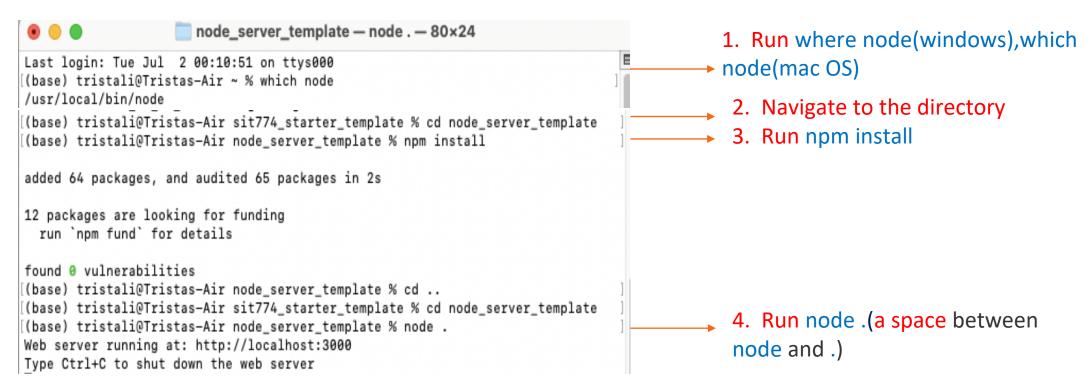
- 1. Run where node(windows), which node(mac OS)
- 2. Navigate to the directory
- 3. Run Npm install

4. Run node .(a space between node and .)



Ontrack 1.2P task (For macOS Systems)

- 1.Download "Node.js starter template" from Section 1.8 on the unit site;
- 2.Create a folder on your laptop, name(e.g., sit774_starter_template); drag the downloaded zipped file to this folder and extract it.
- 3. Using Terminal to navigate the directory (node_server_template);
- 4. Use the node package manager (npm) to install the dependencies inside our starter template: npm install
- 5. Run the web server by typing in node.



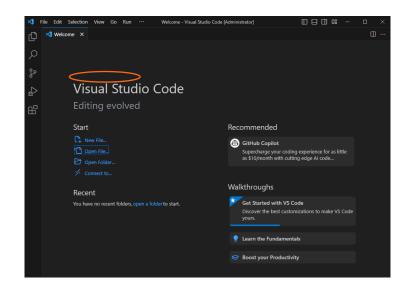


Ontrack 1.2P task - con't

6. The domain localhost (http://localhost:3000) is aliased to the IP address of your current machine, which is always 127.0.0.1.

```
C:\Users\new\Downloads\sit774_starter_template\node_server_template\node_server_template>node .
Web server running at: http://localhost:3000
Type Ctrl+C to shut down the web server
```

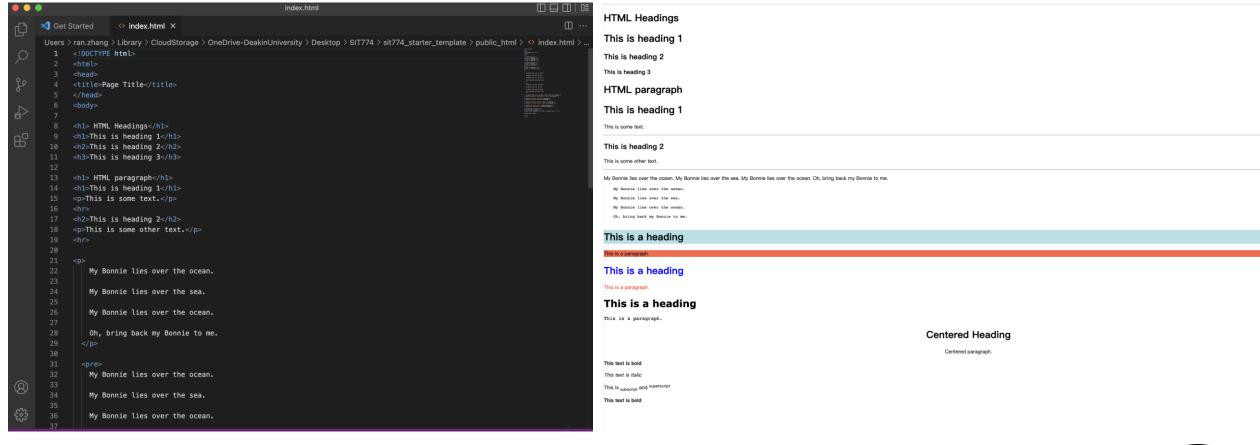
7. Open Visual studio code, open sit774_starter_template folder, find out public_html folder, click index.html file, and type content in this page







Ontrack 1.2 task example

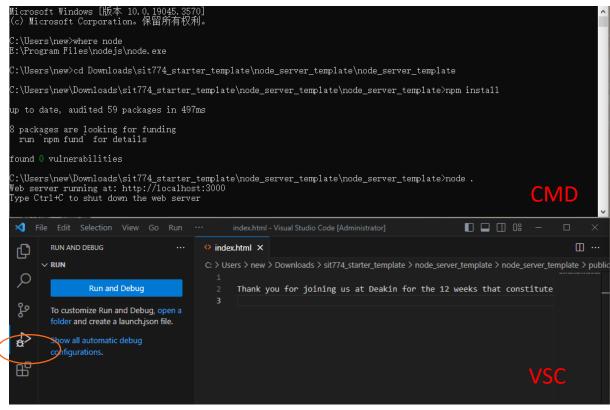


Visual studio code Web App (Chrome)



Ontrack 1.2P task - con't

8. Run the page



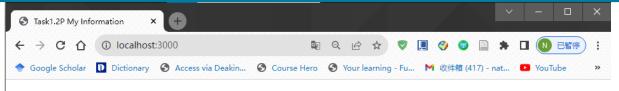
- Make sure you run CMD first
- Open index.html in VSC and type content
- Run http://localhost:3000/ to check your content



Localhost:3000



Example of Ontrack task 1.2



Ran Zhang

Contact Details

Staff ID: 41xxxx

Email: ran.zhang@deakin.edu.au

Biography

My name is Ran Zhang. I am working as a tutor in SIT774 T3 2023 at Deakin university. My campus is suituated at Burwood. Currently I am pursuing Masters of Information Technology. In my free time, i like solving coding problems, hiking and spending time with my family.

My favourite quote is by Walt Disney:

All our dreams can come true, if we have the courage to pursue them.

I like this quote because it motivates me to work hard in my life.

University

My Units

This Trimester 3, I am teaching: SIT774 Web Technology And Development .

am sure that SIT774 will help you learn some useful knowledge! We will have fun in createing our own websets and build our own projects.

My Hobbies

Programming and Technologies

Classes Timetable

Online Classes

On Monday, between 13:00pm to 13:50pm, Teaching method: online teaching via Teams, via Teams, Teaching weeks:01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11

Workshops

- On Wednesday, between 10:00am to 11:50am, Campus: Burwood, Location: LC5.108, Teaching weeks:01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11
- On Wednesday, between 13:00pm to 14:50am, Campus: Burwood, Location: LC6.109, Teaching weeks:01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11
- On Thursday, between 18:00am to 19:50am, Campus: Cloud, Teaching method: online teaching via Teams, Teaching weeks:01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11

```
index.html ×
C: > Users > new > Downloads > sit774_starter_template > node_server_template > node_server_template > public
      <!DOCTYPE html>
       <html lang="en">
           <meta charset="utf=8">
           <meta name="author" content=" Ran Zhang">
           <meta name="description" content="This web page is about my info</pre>
           <title>Task1.2P My Information</title>
           <h1> Ran Zhang </h1>
           <h2>Contact Details</h2>
              <strong> Staff ID:</strong> 41xxxx<br />
              <strong>Email: </strong> ran.zhang@deakin.edu.au
            My name is Ran Zhang. I am working as a tutor in SIT774 T3:
               My favourite quote is by Walt Disney:
               <blockquote>All our dreams can come true, if we have the cou
               I like this quote because it motivates me to work hard in my
           <h2>University</h2>
```

What will you submit?

You should submit:

- · A screenshot (in PDF form) of your website shown in a web browser.
 - Note: You can screen-capture the window using the inbuilt tools (Windows Snipping Tool, or Mac Grab tool) then print to a PDF file for submission.
 Or you could simply paste the image into a word document and print this to a PDF file for submission. Please make sure the PDF displays the image correctly and is readable.
- The source file index.html as found (and servered from) the public_html folder.

