<table>
<thead>
<tr>
<th>DFS</th>
<th>Maps</th>
<th>Linux</th>
<th>HTML</th>
<th>Misc</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
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</tr>
</tbody>
</table>
Question 1 - 10

• This is the ADT that DFS uses
Answer 1 – 10

• Stack
Question 1 - 20

• Why do you need to mark the visited nodes in a graph when you traverse it using DFS
Answer 1 – 20

- Prevent cycles
Question 1 - 30

• What is it called when every vertex is adjacent to every other vertex?
Answer 1 – 30

• Complete graph or clique
Question 1 - 40

• What is one of the main differences between DFS and BFS?
Answer 1 – 40

- DFS uses a stack, BFS uses a queue
Question 1 - 50

• What is the basic psuedo code of a recursive DFS
dfs(vertex v)
{
    visit(v);
    for each neighbor w of v if w is unvisited {
        dfs(w);
    }
}
Question 2 - 10

• How many buckets are available in this hash table?

• Int[] t = new int[101];
Answer 2 – 10

• 101
Question 2 - 20

• How many significant digits are saved using this hash function

• \( N \% 100 \)
Answer 2 – 20

• 2
Question 2 - 30

• This rehashing technique adds one to the hash function in the event of a collision
Answer 2 – 30

• Linear probing
Question 2 - 40

• This rehashing technique uses a 2D matrix to deal with collisions
Answer 2 – 40

- Buckets
Question 2 - 50

- This rehashing technique uses an array and a linked list to deal with collisions
Answer 2 – 50

• Chaining
Question 3 - 10

• This command shows all the files and folders in the current directory (with details like size, permissions)
Answer 3 – 10

- ls -la
Question 3 - 20

• This is the symbol for your home directory.
• This is the symbol for the root
Answer 3 – 20

• ~ and /
Question 3 - 30

• What is 755 in permissions
Answer 3 – 30

- rwx r-x r-x
Question 3 - 40

• What do these symbols mean on a Linux shell?
  • `<`
  • `>`
Answer 3 – 40

• Redirect to standard in
• Redirect to standard out
Question 3 - 50

• How do read from standard in in Java?
Answer 3 – 50

- Scanner in = new Scanner(System.in);
Question 4 - 10

- Name the acronyms?
- HTML
- CSS
- JS
- MERN
- DOM
- MVC
- CDN
Answer 4 – 10

• Hypertext markup language
• Cascading style sheet
• Javascript
• Mongo Express React NodeJS
• Document Object Model
• Model View Controller
• Content Delivery Network
Question 4 - 20

- How can you link to an external website like google in HTML?
Answer 4 – 20

- <a href="http://www.google.com">google</a>
Question 4 - 30

• How do you make the color of the text red in CSS?
• `<p id="test"> Text </p>`
Answer 4 – 30

p#test {
  color: red;
}

Question 4 - 40

• How can you create a descendant selector in CSS (p as a child of h1 for example)
Answer 4 – 40

• h1 p {}

• (space between elements)
Question 4 - 50

Describe what the following does,

```javascript
app.get('/add', (req, res) => {
  res.send(req.query);
});
```
Answer 4 – 50

- sends the query items (key values in the URL) back when the /add route is navigated to
Question 5 - 10

- Can you setup a 3 column grid in bootstrap that switches to a 1 column (3 items stacked vertically) on a small device
Answer 5 – 10

- <div class="row">
  - <div class="col-sm-12 col-md-4"> col1 </div>
  - <div class="col-sm-12 col-md-4"> col2 </div>
  - <div class="col-sm-12 col-md-4"> col3 </div>
- </div>
Question 5 - 20

• What are the 3 V’s of big data?

• What is a template literal and how do you add expressions?
Answer 5 – 20

Volume
Velocity
Variety

Template literal is a new way to create strings in JS using backticks. You can add expressions using `${}`
Can you convert this table to JSON

<table>
<thead>
<tr>
<th>User</th>
<th>Comment</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ek</td>
<td>Hello there</td>
<td>3</td>
</tr>
<tr>
<td>Vg</td>
<td>Not good</td>
<td>4</td>
</tr>
</tbody>
</table>
Answer 5 – 30

[
{
"user":"ek", "comment":"hello there", "rating":3},
{
"user":"vg", "comment":"not good", "rating":4
}
]
Question 5 - 40

- Create a form that POSTs to /login and has a text field named “pin” and submit button
Answer 5 – 40

<form action="/login" method="post">
  <input name="pin" type="text" />
  <input type="submit" value="submit" />
</form>
Question 5 - 50

• What is JS variable hoisting?
• What is the difference between a React Class component and React Functional Component?
Answer 5 – 50

- Rewriting of javascript variable declarations to the top of the function
- React functional component is stateless, class components can save states