

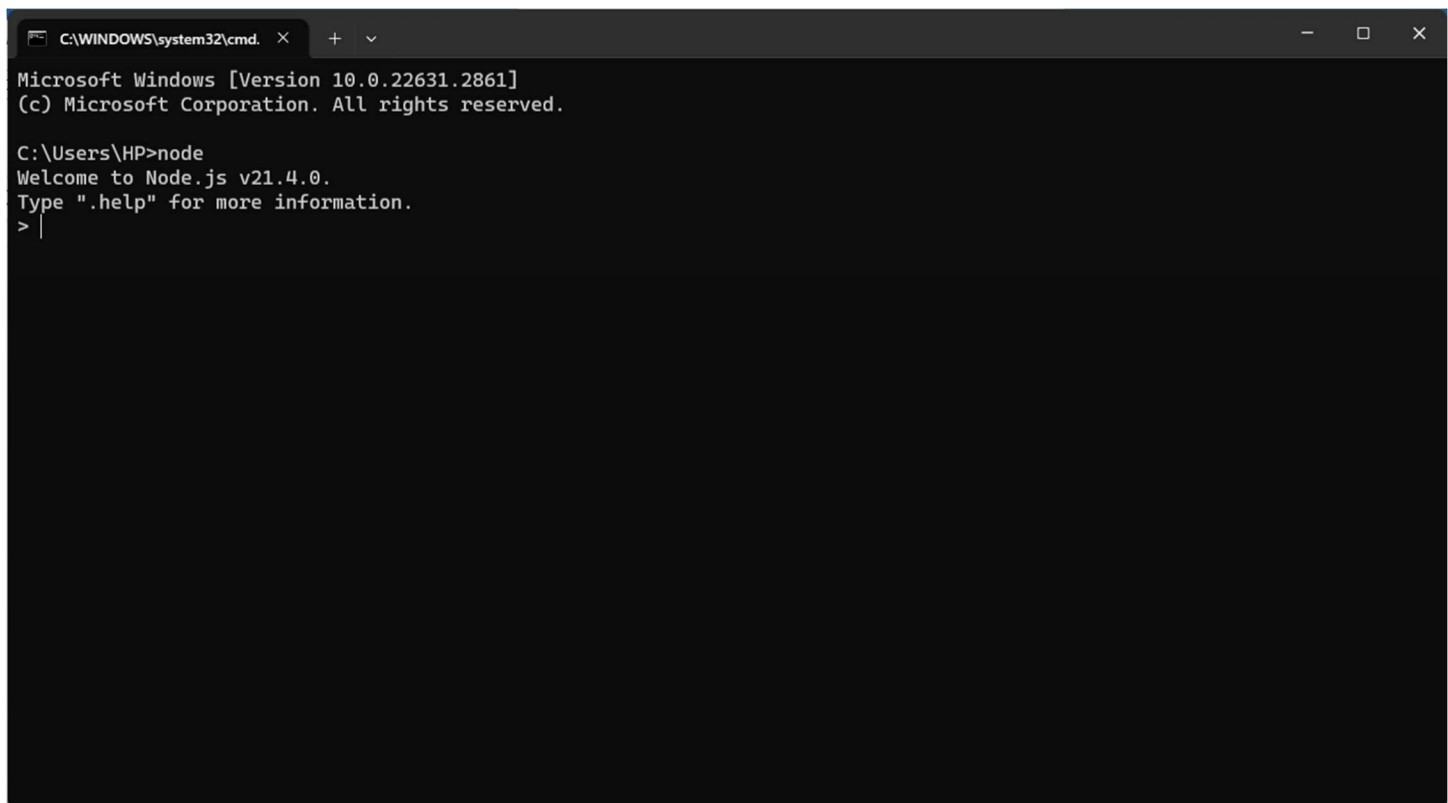
Q. What is REPL? Explain uses of REPL.

A. REPL stand for Read, Eval, Print, Loop. It is a virtual environment where user inputs are read and evaluated and the results are returned to the user. Node.js comes with a REPL environment when it is installed, known as Node Interactive Shell. The REPL environment provides a convenient way to test JavaScript code.

The terms in REPL are as follows:

- Read: It reads the user inputs and parses it into JavaScript code and stored to the memory.
- Eval: It evaluates (processes) the user inputs line by line.
- Print: The results of the evaluation are printed to the console.
- Loop: This Read-Eval-Print process is repeated for every line of code entered by the user.

The Node REPL can be started by typing “node” in the command prompt as shown below.

A screenshot of a Windows Command Prompt window. The title bar shows 'C:\WINDOWS\system32\cmd.' and standard window controls. The text inside the window reads: 'Microsoft Windows [Version 10.0.22631.2861] (c) Microsoft Corporation. All rights reserved. C:\Users\HP>node Welcome to Node.js v21.4.0. Type ".help" for more information. >|'. The prompt is a simple vertical bar, and the cursor is positioned at the end of the line.

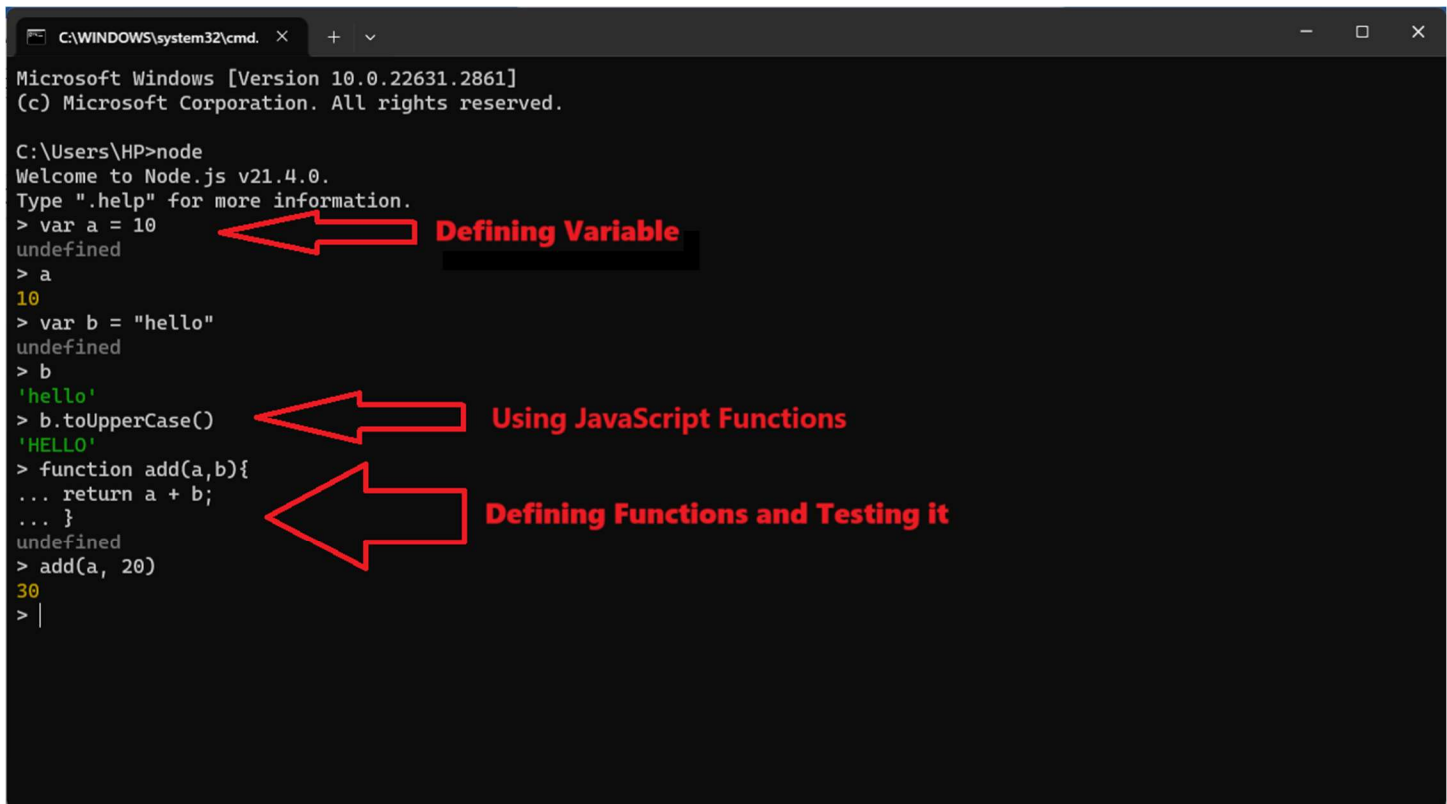
```
C:\WINDOWS\system32\cmd.
Microsoft Windows [Version 10.0.22631.2861]
(c) Microsoft Corporation. All rights reserved.

C:\Users\HP>node
Welcome to Node.js v21.4.0.
Type ".help" for more information.
>|
```

Node REPL can be used for:

- Defining Variables
- Testing JavaScript Expressions
- Defining a function and testing it

All these processes are shown below:



A screenshot of a Windows command prompt window titled "C:\WINDOWS\system32\cmd." showing a Node.js REPL session. The session starts with the prompt "C:\Users\HP>node" and a welcome message "Welcome to Node.js v21.4.0. Type '.help' for more information." The user enters several commands: "var a = 10", "a", "var b = 'hello'", "b", "b.toUpperCase()", and a function definition "function add(a,b){ ... return a + b; ... }" followed by "add(a, 20)". Red arrows point from text labels to specific lines of code: "Defining Variable" points to "var a = 10", "Using JavaScript Functions" points to "b.toUpperCase()", and "Defining Functions and Testing it" points to the function definition and its call.

```
C:\WINDOWS\system32\cmd. x + v
Microsoft Windows [Version 10.0.22631.2861]
(c) Microsoft Corporation. All rights reserved.

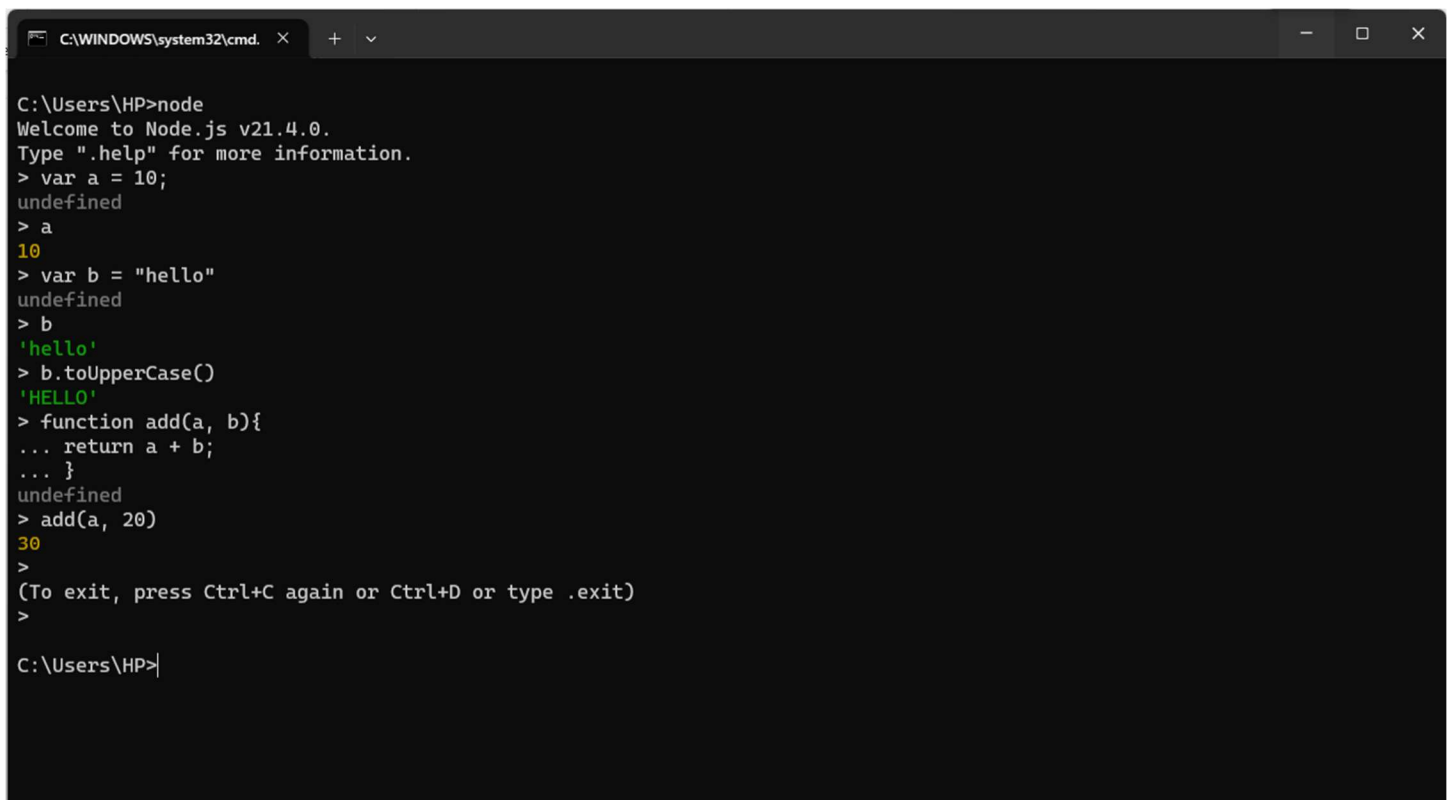
C:\Users\HP>node
Welcome to Node.js v21.4.0.
Type ".help" for more information.
> var a = 10
undefined
> a
10
> var b = "hello"
undefined
> b
'hello'
> b.toUpperCase()
'HELLO'
> function add(a,b){
... return a + b;
... }
undefined
> add(a, 20)
30
> |
```

Defining Variable

Using JavaScript Functions

Defining Functions and Testing it

To Exit REPL, you can either click Ctrl+C twice or Ctrl+D or type ".exit"



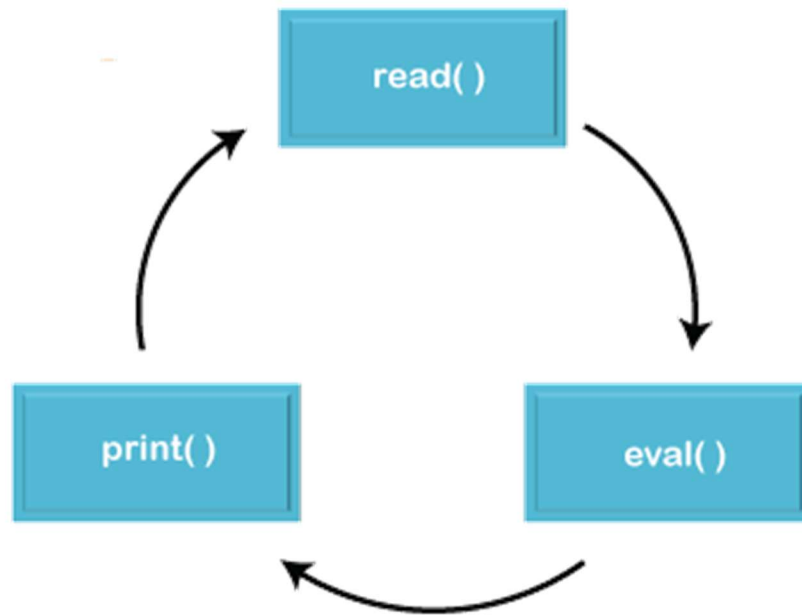
A screenshot of a Windows command prompt window titled "C:\WINDOWS\system32\cmd." showing a Node.js REPL session. The session is identical to the previous one, but it includes the prompt "(To exit, press Ctrl+C again or Ctrl+D or type .exit)" at the end. The prompt "C:\Users\HP>" is visible at the bottom of the window.

```
C:\WINDOWS\system32\cmd. x + v
C:\Users\HP>node
Welcome to Node.js v21.4.0.
Type ".help" for more information.
> var a = 10;
undefined
> a
10
> var b = "hello"
undefined
> b
'hello'
> b.toUpperCase()
'HELLO'
> function add(a, b){
... return a + b;
... }
undefined
> add(a, 20)
30
>
(To exit, press Ctrl+C again or Ctrl+D or type .exit)
>

C:\Users\HP>|
```

Uses of REPL:

- Experimenting: Node.js REPL environment can be used to test different ways to solve a problem.
- Debugging: When facing an error in JavaScript code, REPL helps to find the issue faster than running the code on a browser context.
- Learning: New methods and functions can be easily understood by first trying them on REPL environment.
- Quick Calculations: REPL can be used to make quick calculations necessary in a program without having to write the entire program. This helps in better program development.



Read-Eval-Print Loop (REPL)