

Error Handling

JAVASCRIPT

A large, stylized 'JS' logo in a light blue outline font, centered within a dark blue rounded square. The 'J' and 'S' are connected and have a modern, blocky design.

JS

JavaScript Errors

Let's take a look at some **common JavaScript errors** you might come across:

- **SyntaxError**: This occurs when your code **violates** JavaScript's **syntax** rules.
- **ReferenceError**: When you try to access a variable or function that **doesn't exist**.
- **TypeError**: It shows up when you perform an operation on incompatible data types.
- **RangeError**: If a value falls **outside** the allowable **range**, this error is triggered.
- **Custom Errors**: JavaScript also allows you to **create your own custom errors**.

The Try-Catch Statement

By wrapping a block of code in a **try block** and catching potential **errors in the catch block**, you can prevent your program from **crashing when an error** occurs.

```
try {  
  // Code that may throw an error  
  const result = someUndefinedVariable + 10;  
} catch (error) {  
  console.log("Oops! An error occurred:", error.message);  
  // Output: Oops! An error occurred:  
  //       someUndefinedVariable is not defined  
}
```


Catching Specific Errors

Besides the generic catch block, you can **catch specific types of errors** by using multiple catch blocks.

```
try {  
  // Code that may throw an error  
  const result = someUndefinedVariable + 10;  
} catch (error) {  
  if (error instanceof ReferenceError) {  
    console.log("Oh no! A reference error occurred:", error.message);  
    // Output: Oh no! A reference error occurred:  
    //           someUndefinedVariable is not defined  
  } else {  
    console.log("Oops! A generic error occurred:", error.message);  
    // Output: Oops! A generic error occurred:  
    //           Cannot read property '10' of undefined  
  }  
}
```

The Finally Block

The **finally block** is incredibly useful as it gets executed regardless of whether an **error occurs** or not.

It's commonly used to perform **cleanup operations** or release resources,

```
try {  
  // Code that may throw an error  
  console.log("Inside the try block");  
} catch (error) {  
  console.log("Oops! An error occurred:", error.message);  
} finally {  
  console.log("The finally block is executed.");  
}  
// Output: Inside the try block  
// Output: The finally block is executed.
```


Throwing Custom Errors

JavaScript allows you to **create your own custom errors** by extending the Error object

This empowers you to define your own **error types** and provide more meaningful **error messages** to aid in debugging.

```
class MyCustomError extends Error {  
  constructor(message) {  
    super(message);  
    this.name = 'MyCustomError';  
  }  
}  
  
try {  
  throw new MyCustomError('Uh-oh! This is a custom error.');} catch (error) {  
  console.log("Oops! An error occurred:", error.name, error.message);  
  // Output: Oops! An error occurred:  
  //         MyCustomError Uh-oh! This is a custom error.  
}
```

Defensive Coding

- While **error handling** is crucial, practicing defensive coding techniques and **error prevention** is equally important.
- This involves **validating user input**, checking for **null** or **undefined** values, and implementing **error checks** to handle potential **edge cases**.
- By incorporating **defensive** coding practices, you can minimize the **occurrence of errors** and **enhance** the overall stability of your code.

Conclusion

- **Error handling** is a critical aspect of JavaScript programming.
- By understanding the **different types of errors**, mastering the **try-catch** statement, and adhering to best practices, you can **improve the stability** and **reliability** of your JavaScript code
- **Don't forget to log and report** errors for effective debugging and continuous improvement
- As always, I hope you **enjoyed the post** and learned **something new**.
- If you have **any queries** then **let me know** in the **comment** box.

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If you have any queries then let me know in the comment box.