

Error Handling

JAVASCRIPT

A large, rounded square with a dark blue background and a light blue border. Inside the square, the letters 'JS' are written in a large, white, outlined font.

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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