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Part 1; Simple Calculator

The code defines a function called `calculate` that takes an `expression` as input. We use the `eval()` function to evaluate the expression and return the result. If an error occurs during the evaluation, we catch the error and return an "Invalid expression. Please check your input." message.

```
function calculate(expression) {
  try {
    const result = eval(expression);
    return result;
  } catch (error) {
    return "Invalid expression. Please check your input.";
  }
}
```

To test the `calculate` function, we use `console.log` statements to display the output of different expressions. For example, `console.log(calculate("2 + 3"))` will output `5` because it evaluates the expression "2 + 3" and returns the result.

```
console.log(calculate("2 + 3"))
```

One challenge is that the `eval()` function can only evaluate valid JavaScript expressions. If the input contains syntax errors or unsupported operations, it will throw an error. We handle this by catching any errors that occur during the evaluation and returning the "Invalid expression. Please check your input." message.

Overall, the testing process involves providing different expressions to the `calculate` function and

verifying that the outputs are correct. It's important to test various scenarios and edge cases to ensure the function works as expected.

Part 2; Grading system

The `calculateGrade` function is used to calculate the grade based on a given score. It takes the `score` as input and checks if it's a valid number. If it's not a number or NaN, we return an error message asking for a valid number.

Then, we check the range of the `score` using if-else statements. If the `score` falls within a specific range, we return the corresponding grade. For example, if the `score` is between 90 and 100 (inclusive), we return 'A'. If the `score` is between 80 and 89 (inclusive), we return 'B', and so on.

If the `score` is outside the range of 0 to 100, we return an error message asking for a number between 0 and 100.

```
  if (score >= 90 && score <= 100) {
    return 'A';
  } else if (score >= 80 && score <= 89) {
    return 'B';
  } else if (score >= 70 && score <= 79) {
    return 'C';
  } else if (score >= 60 && score <= 69) {
    return 'D';
  } else if (score >= 0 && score <= 59) {
    return 'F';
  } else {
    return 'Error: Please enter a number between 0 and 100 for the score.';
  }
}
```

To test the function, we use `console.log` and pass different scores as arguments. The function then returns the corresponding grades for each score.

For example, `console.log(calculateGrade(95))` will output 'A' because 95 falls within the range of 90 to 100.

```
console.log(calculateGrade(95))
```

Similarly, `console.log(calculateGrade(55))` will output 'F' because 55 falls within the range of 0 to 59.

However, `console.log(calculateGrade(105))` will output an error message because 105 is outside

the range of 0 to 100.

And `console.log(calculateGrade('abc'))` will also output an error message because 'abc' is not a valid number.