Web Engineering Lab

Lab Report 6

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Objective:

The objective of this lab was to implement various JavaScript programs to solve real-world problems using fundamental programming concepts such as loops, conditionals, functions, and type conversion.

Github Repo Link:

https://github.com/hassanali167/simple_js_web_lab_task

Task 1: Car Parking Toll System

Description:

A parking lot charges different rates based on the number of hours parked. A VIP discount of 20% is applied if applicable.

Implementation Steps:

1. Prompt the user to enter the number of hours parked.
2. Determine the parking fee based on the hourly rates:
    - 1-2 hours: $5 per hour
    - 3-5 hours: $4 per hour
    - More than 5 hours: $3 per hour
3. Ask if the user is a VIP and apply a 20% discount if confirmed.
4. Use loops to check multiple cars.
5. Display the total parking fee in the console.

Task 2: Loan Interest Calculator

Description:

A bank provides different interest rates depending on the loan amount.

Implementation Steps:

1. Prompt the user to enter the loan amount.
2. Determine the applicable interest rate:
    - Below $10,000: 5%
    - $10,000 - $50,000: 4%
    - Above $50,000: 3.5%
3. Use `parseFloat()` for type conversion.
4. Use an arrow function to calculate the final loan amount after interest.
5. Display the final amount using an alert box.

Task 3: Shopping Discount System

Description:

An e-commerce website offers discounts based on the total shopping amount.

Implementation Steps:

1. Prompt the user to enter the shopping amount.
2. Determine the discount rate:
    - Below $100: No discount
    - $100 - $500: 10%
    - Above $500: 15%
3. Use a function to calculate the final price.
4. Display the discounted price in the console.

Task 4: Employee Salary Calculator

Description:

A company calculates employees' salaries based on experience level and applies a bonus if experience is greater than 5 years.

Implementation Steps:

1. Prompt the user for years of experience.
2. Calculate the base salary: `$1000 * years of experience`.
3. If experience > 5 years, add a bonus of $500.
4. Use an arrow function for salary calculation.
5. Display the total salary using an alert box.

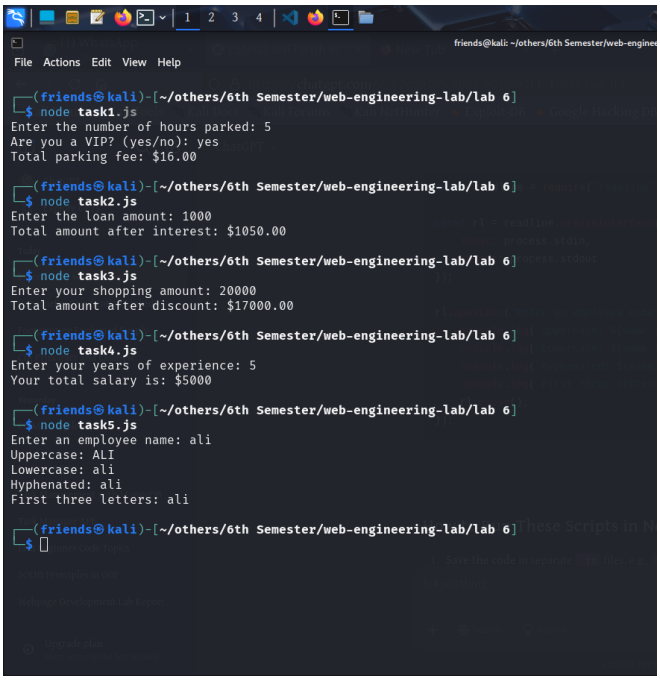
Task 5: String Manipulation Challenge

Description:

A company needs to format employee names for official records.

Implementation Steps:

1. Take a name input using `prompt()`.
2. Convert the name to uppercase and lowercase.
3. Replace spaces with hyphens.
4. Extract the first three letters.
5. Display all results using `console.log()`.



Conclusion:

This lab provided hands-on experience with JavaScript, focusing on conditionals, loops, functions, and string manipulation. The tasks enhanced problem-solving skills and logical thinking while reinforcing key JavaScript concepts.