

## 1. Online Store Discount Calculator

**Problem Statement:** Design a PHP script to calculate discounts for an online store. The store offers different discounts based on the total purchase amount. The discount rates are as follows:

- No discount for amounts less than \$50.
- A 10% discount for amounts between \$50 and \$100.
- A 20% discount for amounts between \$100 and \$200.
- A 30% discount for amounts over \$200.

## 2. Employee Bonus Calculator

**Problem Statement:** Write a PHP script to calculate the yearly bonus for employees based on their years of service:

- Less than 2 years: No bonus.
- 2 to 5 years: 5% bonus.
- 5 to 10 years: 10% bonus.
- More than 10 years: 15% bonus.

## 3. Temperature Converter

**Problem Statement:** Create a PHP script that converts temperatures between Celsius, Fahrenheit, and Kelvin. The user should choose the conversion type using a form.

**Celsius to Fahrenheit:**  $(\$temperature * 9/5) + 32$

**Celsius to Kelvin:**  $\$temperature + 273.15$

**Fahrenheit to Celsius:**  $(\$temperature - 32) * 5/9$

**Fahrenheit to Kelvin:**  $(\$temperature - 32) * 5/9 + 273.15;$

**Kelvin to Fahrenheit:**  $(\$temperature - 273.15) * 9/5 + 32$

## 4. Payroll Management System

**Problem Statement:** Create a PHP script to manage payroll for a company. Employees are paid based on hours worked, with overtime pay for hours above 40. The overtime rate is 1.5 times the normal hourly rate.

## 5. Parking Lot Fee Calculator

**Problem Statement:** Write a PHP script to calculate parking fees based on the hours parked. The rates are:

- \$5 for the first hour.
- \$3 for each additional hour up to 5 hours.
- \$2 for each additional hour beyond 5 hours.

## 6. Library Fine Calculator

**Problem Statement:** Write a PHP script to calculate fines for overdue books in a library. The fine is \$0.25 per day for the first 10 days and \$0.50 per day for each additional day.

## 7. Gym Membership Fee Calculator

**Problem Statement:** Create a PHP script to calculate the monthly fee for gym members based on their membership type and the number of classes they attend. The fees are:

- Basic membership: \$20/month.
- Standard membership: \$30/month + \$2 per class.
- Premium membership: \$40/month + \$1 per class.

## 8. Manufacturing Cost Calculator

**Problem Statement:** Write a PHP script to calculate the total manufacturing cost based on the number of units produced. The cost per unit decreases as the number of units increases:

- \$10 per unit for the first 100 units.
- \$8 per unit for the next 100 units.
- \$5 per unit for each additional unit beyond 200.

## 9. Grocery Store Management System

### Problem Statement:

You have been hired to create a basic inventory and sales management system for a small grocery store using PHP. The system needs to handle the following tasks:

1. **Inventory Management:**
  - Initialize the inventory with a predefined list of items, including their names, prices, and quantities available.
  - Display the current inventory to the user in a tabular format.
2. **Sales Processing:**
  - Allow the user to add items to a shopping cart by specifying the item name and the quantity they wish to purchase.
  - Update the inventory based on the items added to the cart, ensuring that the quantity available is decreased correctly.
  - If a user attempts to add more items than are available in inventory, display an error message and prevent the addition.
3. **Calculate Total Cost:**
  - Once the user completes adding items to the cart, calculate the total cost of the items.
  - Apply a discount based on the total cost:
    - 5% discount if the total cost is between \$50 and \$100.
    - 10% discount if the total cost is over \$100.
4. **Receipt Generation:**
  - Generate and display a detailed receipt showing the items purchased, quantities, item prices, total cost, discount applied (if any), and the final amount due.
5. **Loop Requirements:**
  - The system should use loops to display the inventory, process multiple items for the cart, and apply discounts.

## 10. Automated Payroll System

### Problem Statement:

Your task is to develop a simplified payroll system for a mid-sized company. The system should calculate the monthly salary of each employee based on several factors, including the number of hours worked, the employee's hourly rate, overtime, bonuses, and deductions. The company has different types of employees, and the rules for calculating their salary vary accordingly.

#### *Salary Calculation Rules:*

##### 1. Employee Types:

- **Full-Time Employees:**

- Work 160 hours per month.
- Overtime is paid at 1.5 times the regular hourly rate for any hours worked beyond 160.

- **Part-Time Employees:**

- Work 80 hours per month.
- Overtime is paid at 1.2 times the regular hourly rate for any hours worked beyond 80.

- **Contract Employees:**

- Paid strictly based on hours worked with no overtime pay.

##### 2. Bonuses:

- All employees receive a 10% performance bonus if their total hours worked (including overtime) exceed a specified threshold:
  - **Full-Time Employees:** Threshold is 180 hours.
  - **Part-Time Employees:** Threshold is 90 hours.
  - **Contract Employees:** Threshold is 100 hours.

##### 3. Deductions:

- A flat deduction of \$50 is applied to all employees for benefits.
- An additional 5% of the gross salary is deducted for taxes.

#### *Inputs:*

- **Employee Type:** The type of employee (Full-Time, Part-Time, Contract).
- **Hours Worked:** The total number of hours worked by the employee in the month.
- **Hourly Rate:** The hourly rate for the employee.

#### *Outputs:*

- The **gross salary** before deductions.
- The **net salary** after applying deductions.