

Lab 1

Q1 (10 pts)

Maria works as a delivery driver with a base hourly wage of \$18. If she works more than 8 hours in a day, she earns 25% overtime pay on the extra hours. Write a Python program to calculate Maria's total daily pay. Use a variable to represent the total number of hours worked.

Q2 (20 pts)

A clothing store sells one jacket for \$80. The store runs a promotion: Buy 1 jacket, get the 2nd jacket at 30% off.

1. What is the total cost of buying 2 jackets under this promotion? (5 pts)
2. What is the percentage discount compared to buying 2 jackets at full price? (5 pts)
3. What is the minimum cost to purchase 1,234 jackets under this deal? (5 pts)
4. If you have \$50,000, how many jackets can you buy at most? (5 pts)

Q3 (20 pts)

A bank offers a 12-month Certificate of Deposit (CD) with an annual interest rate of 4%, compounded annually. The CD automatically renews at maturity unless withdrawn. However, if withdrawn before maturity, the bank charges a penalty equal to 3 months of interest.

1. If you deposit \$10,000 and let the CD renew automatically for 3 years, what will be the final balance? (5 pts)
2. If you withdraw the CD after 9 months, how much penalty will you pay, and what is your net balance? (5 pts)
3. If you start with \$50,000 and continuously renew for 18 months, what will be your total profit (final balance – initial deposit)? (5 pts)
4. If you start with \$50,000 and continuously renew for 27 months, what will be your average profit per month? (5 pts)