# Python Control Structures: Case Studies and Solutions

## Age-based Movie Ticket Pricing

A cinema charges different prices based on age:  
  
 - Below 12: $5  
 - 12 to 18: $8  
 - Above 18: $12  
  
 Write a Python program to determine the price based on the user's age.  
  
 Solution:  
 ```python  
 age = int(input("Enter your age: "))  
 if age < 12:  
 price = 5  
 elif 12 <= age <= 18:  
 price = 8  
 else:  
 price = 12  
 print(f"Ticket price: ${price}")  
 ```

## Check Even or Odd

Write a Python program to check whether a given number is even or odd.  
  
 Solution:  
 ```python  
 num = int(input("Enter a number: "))  
 if num % 2 == 0:  
 print("Even")  
 else:  
 print("Odd")  
 ```

## Find the Largest of Three Numbers

Write a Python program to find the largest of three numbers.  
  
 Solution:  
 ```python  
 a, b, c = map(int, input("Enter three numbers: ").split())  
 largest = max(a, b, c)  
 print(f"Largest number: {largest}")  
 ```

## Check Leap Year

Write a program that determines whether a given year is a leap year.  
  
 Solution:  
 ```python  
 year = int(input("Enter a year: "))  
 if (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0):  
 print("Leap Year")  
 else:  
 print("Not a Leap Year")  
 ```

## Grade Calculation

Write a Python program that assigns grades based on marks:  
  
 - 90+ → A  
 - 80-89 → B  
 - 70-79 → C  
 - 60-69 → D  
 - Below 60 → F  
  
 Solution:  
 ```python  
 marks = int(input("Enter marks: "))  
 if marks >= 90:  
 grade = "A"  
 elif marks >= 80:  
 grade = "B"  
 elif marks >= 70:  
 grade = "C"  
 elif marks >= 60:  
 grade = "D"  
 else:  
 grade = "F"  
 print(f"Grade: {grade}")  
 ```