TY CSE AY-2024-25 Sem-II

Sub: iOS Lab (6CS381)

Assignment No 1

Due date- 20/01/2025

(Variable and Constant declaration, Type Safety and Type Inference)

1. Write a Swift program to declare a constant ‘pi’ with a value of 3.14159 and a variable ‘radius’ with a value of 5. Calculate and print the circumference of a circle using the formula circumference=2×pi×radius.

2. Declare a constant birthYear and assign your birth year to it. Then, declare a variable currentYear and assign the current year to it. Calculate your age and print it. Try changing the value of birthYear and observe what happens.

3. Declare a Variable ‘marks’ and Modify Its Value, declare a Constant ‘outOfMarks’ and Attempt to Modify It. Observe the error.

4. If you are building a simple app that tracks a user's ‘score’ in a game, declare a ‘score’ with appropriate type (variable or constant), justify your choice (write print statement for justification).

5. You are creating a weather app. You need to track the current temperature and the freezing point of water. What should be the type of above two values.

6. Declare two variables: one for storing a person’s age (Int) and another for storing their height (Double). Initialize these variables with appropriate values and use explicit type annotations to ensure the correct data types.

==========Type Inference and Safety==========

7. Declare two variables, one called ‘firstDecimal’ and one called ‘secondDecimal’. Both should have decimal values. Look at both of their types by holding Option and clicking the variable name.

8. Declare a variable called ‘trueOrFalse’ and give it a boolean value. Try to assign it to ‘firstDecimal’ like so: ‘firstDecimal = trueOrFalse’. Does it compile? Print a statement to the console explaining why not, and remove the line of code that will not compile.

9. Declare a variable and give it a string value. Then try to assign it to ‘firstDecimal’. Does it compile? Print a statement to the console explaining why not, and remove the line of code that will not compile.

10. Finally, declare a variable with a whole number value. Then try to assign it to ‘firstDecimal’. Why won't this compile even though both variables are numbers? Print a statement to the console explaining why not, and remove the line of code that will not compile.

11. Declare a variable called ‘name’ of type ‘String’, but do not give it a value. Print ‘name’ to the console. Does the code compile? Remove any code that will not compile.

12. Declare a variable called ‘distanceTraveled’ and set it to 0. Do not give it an explicit type. Now assign a value of 54.3 to ‘distanceTraveled’. Does the code compile? Go back and set an explicit type on ‘distanceTraveled’ so the code will compile.

13. You decide that your fitness tracking app should show the user what percentage of his/her goal has been achieved so far today. Declare a variable called ‘percentCompleted’ and set it to 0. Do not explicitly assign it a type.

14. Imagine that partway through the day a user has taken 3,467 steps out of the 10,000 step goal. This means he/she is 34.67% of the way to his/her goal. Assign 34.67 to ‘percentCompleted’. Does the code compile? Go back and explicitly assign a type to ‘percentCompleted’ that will allow the code to compile.

    ======Keyboard Input==

    *(Hint: for keyboard input
    print("Please enter your name:")
    let name = readLine()

    *For input other than string
    print("Please enter your age:")
    let ageString = readLine()
    let age = Int(ageString)

15. Write a Swift program that asks the user to input their name. Then, print a greeting message using the entered name.

    Input: User’s name (String)
    Output: Greeting message (e.g., "Hello, John!")

16. Write a Swift program that asks the user to input two numbers (integers). Then, calculate and print the sum of these two numbers.

17. Write a Swift program that asks the user to input a temperature in Celsius. Then, convert it to Fahrenheit and print the result.

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