CS161FZ Introduction to Computer Science

Lab Assignment 7

There are ***two*** tasks to be completed.

General Information:

- Use variables instead of literals in your programs.

Task 1: Determine the Data Type of Inputs

Write a complete computer program to determine the data type of inputs. The program should:

1. Ask the user for an input.
2. Determine whether the input is a data type ***byte***, ***short***, ***int***, ***long***, ***float*** and/or ***double***.
3. The program should keep waiting for user input until the user inputs "exit" (ignore case).

Example Input:
123 true 22.39 false 19292922921

Sample Output:
123 can be converted into a type byte!
123 can be converted into a type short!
123 can be converted into a type int!
123 can be converted into a type float!
123 can be converted into a type double!
true cannot be converted into a type byte!
true cannot be converted into a type short!
true cannot be converted into a type int!
true cannot be converted into a type float!
true cannot be converted into a type double!
22.39 cannot be converted into a type byte!
22.39 cannot be converted into a type short!
22.39 cannot be converted into a type int!
22.39 can be converted into a type float!
22.39 can be converted into a type double!
false cannot be converted into a type byte!
false cannot be converted into a type short!
false cannot be converted into a type int!
false cannot be converted into a type float!
false cannot be converted into a type double!
19292922921 cannot be converted into a type byte!
19292922921 cannot be converted into a type short!
19292922921 cannot be converted into a type int!
19292922921 can be converted into a type float!
19292922921 can be converted into a type double!

Task 2: Octal to Hexadecimal

Write a complete program that converts octal numbers to hexadecimal numbers. The program should:

1. Ask the user to input an octal number;
2. Check if the inputted number is a valid octal number, if it is not, the program will print a message "Please input a valid Octal Number:" on the screen to promote the user to input another valid octal number.
3. Convert the octal number to hexadecimal format using the methods learned in the class.
4. Keep waiting for user input until the user inputs “exit” (Ignore cases).
5. Print the hexadecimal number on the screen.

Example Input:
13272123 496

Example Outputs:
2D7453
Please input a valid Octal Number: