Assignment 3 – 03/2/2022

Write functional programs in Haskell to achieve the following:

**Sequential:**

1. To [convert days into years, weeks and days](https://codeforwin.org/2015/06/c-program-to-convert-days-into-years-weeks-days.html).
2. To ensure that the subtraction of any two-digit number and its reverse is always the multiple of nine. For example, entered number is 54 and its reverse is 45. The difference between them is 9.

**Selection:**

1. Obtain a temperature in degrees Fahrenheit from the user.  If the temperature is 80 degrees or more display the message "Go play golf" otherwise, if the temperature is 70 -79 degrees display the message "Put on a jacket", otherwise display the message "It is way too cold."  Perform a desk check using the following values: 95, 72, and 50.
2. Obtain a name and age from the user.  If the user is 16 or older, output a message indicating they are old enough to drive.  For people under 16, output a message indicating how many years they must wait before they can drive legally.
3. Obtain from the user an hourly pay rate and the number of hours worked for the week. Calculate and output their weekly pay according to the following: Regular pay is the pay up to 40 hours. Overtime pay is pay for the hours over 40.  Overtime is paid at a   rate of 1.5 times the hourly rate. Gross pay is the sum of the regular pay and the overtime pay.
4. Lengths of three sides of a triangle a, b, c are given as input. Finds if the triangle is isosceles, equilateral, or scalene. Hint: In an equilateral triangle three sides are equal. In an isosceles triangle two sides are equal. In a scalene triangle three sides are not equal.

**Repetition:**

1. Check if a number is prime or not.
2. Check if a given number is a palindrome.
3. Check if a given number is an Armstrong number.
4. Sum of even numbers upto a limit.
5. Sum of odd numbers upto a limit.
6. Convert the given number in binary to decimal.
7. Convert the given number in decimal to binary.
8. Print the given number in words eg. 21   two one.
9. Find the prime number between two limits.
10. Find the number and sum of all integers between 100 and 200 which are divisible by 9.

**Strings:**

* 1. Read and print your address.
  2. Check if a given string is a palindrome or not.
  3. Find the no: of vowels, consonants and numbers in a given string.
  4. Write a menu driven program to:
     1. Find the length of a string
     2. Join two strings
     3. Reverse a string
     4. Compare two strings.
     5. Copy the given string to another string.
     6. Find a string in another string

**Lists:**

1. A Haskell function that reads marks of ‘n’ students of a class and displays the class average. Also if more than 2 students have marks less than class average, display a suitable message.
2. [A haskell function to find the Number Occurring Odd Number of Times](https://www.geeksforgeeks.org/find-the-number-occurring-odd-number-of-times/) in an list.

Input :arr = {1, 2, 3, 2, 3, 1, 3}

Output : 3

Input :arr = {5, 7, 2, 7, 5, 2, 5}

Output : 5

1. A Haskell function to display all the duplicates elements in the list.
2. A Haskell function finds the product of elements of a list.
3. A Haskell function that reads a list and print the odd numbers in the list.
4. A Haskell function that reads a list and print the sum of even numbers in the list.
5. A Haskell function that reads a list and find the smallest element in the list.
6. A Haskell function that reads a list and print the sum of elements at odd list indices.
7. A Haskell function that searches for a number (value) in a list and displays an appropriate message. The list of numbers and the value to be searched should be read from the user.
8. A Haskell function that reads a list and displays the element that comes in the list after a number entered by the user.

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