**Namal Institute Mianwali**

**Computer Science Department**

**Database Systems**

**Fall 21**

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| Document: | Assignment: Task1 and Task2 | Date: | 10-04-2021 |
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| Document Details: | This document explains the functionality of both tasks as an assignment given by the instructor of this course. | | |

* **Task No.1:**
  + **Statement:**
    - Develop an application that asks the user for the username and password. If the user enters the correct username and password then the user should be moved to the next welcome screen and this login screen should disappear after a successful authentication process. If the authentication process is failed then a message “Try Again” should be displayed in front of the login button. (Note: Username for your application should be your name and password should be your Roll No).
  + **Solution:**
    - I used Tkinter for both tasks which is the standard GUI library for Python. Python when combined with Tkinter provides a fast and easy way to create GUI applications. Tkinter provides a powerful object-oriented interface to the Tk GUI toolkit.
  + **Procedure:**
    - Following steps taken in order to complete the task.
    - Import the Tkinter Library
    - Make the root and give it a geometry having title Login Form
    - Then write down the two labels of Username and Password.
    - Then give them entry having width 30
    - Then place the Login Button having command of Login User which check out weather the user input correct username and password. If the user input corrects then another window screen open having message of Welcome and if the user input wrong username and password then there will be a message of try again after Login Button.
    - Following are the screenshots of Task No.1 output.
* **Task No.2:**
  + **Statement:**
    - Develop a calculator application that takes any arithmetic expression from a user and shows its result like any calculator does. You can use the built-in python functions to get the result of any expression. For example, there is a function name “eval” in python that gives you the result of any mathematical expression you don’t need to take care of the DMAS rule. If you pass a mathematical expression “2+4\*4” to this function i.e., eval ("2+4\*4"), it will give you the result 18. In your calculator application, this method can reduce your effort. The “eval” function is not necessary to use, you can also use any other Python function that may help you in this regard or you can also create your function.
  + **Procedure:**
    - Following steps taken in order to complete the task.
    - Import the Tkinter Library
    - Make the root and give it a geometry having title Calculator
    - Design the layout
    - Here I used the resizable widget to prevent the calculator from resizing because it will distract the operations and numbers.
    - I make the three widget functions for click, clear and equal button.
    - Equal button uses the build in function Eval which evaluate the string directly.
    - I also used StringVar to get the instance of input field.
    - Now I create a frame in which to place the input field
    - Then create the input field, which will display the numbers and mathematical operations
    - Then create a frame in which to place the buttons
    - Place the buttons in rows, and configure them to functioning the events.
    - Now that I have placed all the GUI elements and then try to run it and it worked fine.
    - Here is the screenshot of this task output.

Completed by Jawad Ahmed

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