Aror University of Art, Architecture, Design & Heritage Sukkur.

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Department of Artificial Intelligence and Multimedia Gaming

Fundamentals of Programming (Fall-2023)

LAB No. 02

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Objective of Lab No. 1:
After performing lab1, students will be able to:
  - o **Understand the difference between variable and constant**
  - o **Declare, Initialize and Reinitialize variables**
  - o **Display the values of variables**
  - o **Create variables of different data types**
  - o **Use endl Manipulator**

Exercise 1

Write a program that:

1. Declares a boolean variable called `my_bool`.

2. Initializes it to the boolean value of `true`.

3. Prints the value of `my_bool`.

4. Re-assigns `my_bool` to the value of `test`.

5. Prints the value of `my_bool`.

Remember that the print value of `true` is `1` and the print value of `false` is `0`. Use appropriate helping function for printing

Exercise 2

Write a program that:

1. Declares an `int` variable called `my_int`.
2. Initializes it to the value of `first_num`.
3. Prints the value of `my_int`.
4. Re-assigns it to the value of `second_num`.
5. Prints the value of `my_int`.
6. Re-assigns it to the value of `third_num`
7. Prints the value of `my_int`.

Exercise 3

Write a program that:

1. Create a Variable `line1` and store some text value in it.
2. Prints the value of `line1`.
3. On a new line, prints the value of `line2`.
4. Make sure there is a new line after `line2`.

Exercise 4

Write a program that:

1. Declares a double constant variable called `my_double`.
2. Initializes `my_double` to the value of `3.14`.
3. Prints the value of `my_double`.
4. Re-assigns `my_double` to the value of `number`.
5. Prints the value of `my_double`.

Exercise 5

Variables and Data Types Challenge:

Your output should look something like this:

```
Hello! Today is Wednesday, May 4.
The current wait time is 4 minutes.
```

The pattern is as follows. The * indicates variables:

```
*greeting* Today is *dayOfWeek*, *month* *day*.
The current wait time is *currentWaitMinutes* minutes.
```

Exercise 6

Create variables of following datatypes and assign them any values:

- Char
- Short

- Int
- Long double
- String using both methods

Find out the size of each variable using appropriate function.

Exercise 7

Print out the following patterns on console screen:

A.

```
*
* *
* * *
* * * *
* * * * *
```

B.

```
A
B B
C C C
D D D D
E E E E E
```