



# Sukkur 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:

- Understand the difference between variable and constant
- Declare, Initialize and Reinitialize variables
- Display the values of variables
- Create variables of different data types
- 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:



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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`.



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## 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.



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\*  
\* \*  
\* \* \*  
\* \* \* \*  
\* \* \* \* \*

B.

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