**CMPU 2016 Object Oriented Programming**

TU857-2

2024-25, Semester 1: Python with Sunder Ali Khowaja

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**Lab 1: Exploring Python and PyCharm IDE**

Welcome to the lab session that introduces you to the PyCharm Integrated Development Environment (IDE) and helps you practice the basic Python language constructs. In this lab, you'll get hands-on experience with setting up projects, writing code, and using PyCharm's features to enhance your Python programming workflow.

**Lab Objectives:**

* Familiarize yourself with the PyCharm IDE interface and basic functionalities.
* Create a new Python project in PyCharm and understand project structure.
* Practice writing and executing simple Python programs.
* Use PyCharm's code editing features, such as code completion and error highlighting.

**Lab Duration**: 2 hours.

This lab does not require any submissions.

**Lab Instructions:**

1. Setting Up:

* Open PyCharm IDE and create a new project named "OOP\_Python."
* Create a new Python file named "lab0.py" within the project.
* Hello World:
  + Write a simple Python program in "lab0.py" to print "Hello, PyCharm!" to the console. You have the code from the lecture.
* Run the program using PyCharm's Run configuration.

1. Basic Python Constructs:

* Create a new Python file named "lab0\_2.py" within the project.
* Practice using the following constructs from your Python language overview:
  + Variables and data types (integers, strings, booleans)
  + Arithmetic operations (+, -, \*, /)
  + Conditional statements (if, else)
  + Loops (for, while)
  + Write code snippets that demonstrate each construct and run them individually.

1. Using PyCharm Features:

* Explore code completion by typing a partial statement and using the suggested completions.
* Intention actions: Use the light bulb icon to access suggestions for fixing code issues.
* Error highlighting: Introduce deliberate errors and observe how PyCharm highlights them.

1. Lab Reflection:

* Reflect on your experience using PyCharm IDE and practicing Python constructs.
* Consider how the IDE's features helped streamline your coding process.
* Discuss your challenges with your lab instructor.