



**COMSATS University Islamabad Abbottabad Campus**  
**Department of Computer Science**

Course: Data Structure

Class: BSE-4D

Instructor: Nauman Khan

Marks: 20 marks

**Instructions:**

1. Must be submitted at CUOnline only.
  2. Last date of submission is **03-09-2025**. Must be submitted inside lab
  3. Copying other's assignments will leave a negative impression. Students are advised not to copy material from others.
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**Lab Task 01 – Java Basics Practice**

**Objective:**

This lab introduces students to Java syntax, input/output, variables, data types, operators, and control structures using small real-life problems.

**Q1: Student Grade Calculator**

**Topics Covered:**

Output, Comments, Variables, Data Types, Operators, Type Casting, If-Else Statements

**Instructions:**

- Ask the user to enter marks for Quiz (out of 15), Assignment (out of 10), Mid-Term (out of 25), and Final Exam (out of 50).
- Store these values in variables of appropriate data types.
- Calculate Total Marks and Average (use type casting to show decimal values).
- Display the Grade using if-else.
- Add comments to explain your code.

**Grading Rules:**

- Average  $\geq 85 \rightarrow$  Grade A
- $70 \leq \text{Average} < 85 \rightarrow$  Grade B
- $50 \leq \text{Average} < 70 \rightarrow$  Grade C
- Average  $< 50 \rightarrow$  Fail

**Expected Output Example:**

*Enter Quiz Marks: 12*

*Enter Assignment Marks: 9*

*Enter Mid-Term Marks: 20*

*Enter Final Marks: 40*

*Total Marks = 81*

*Average = 81.0*

*Grade = B*

## **Q2: Pizza Billing System**

### **Topics Covered:**

Strings, If-Else, Switch, Math Operators, Booleans, Output and Comments

### **Instructions:**

- Ask the user for Pizza Size (small, medium, large).
- Use a switch statement to assign base prices: Small = 100, Medium = 200, Large = 300.
- Ask if the user wants pepperoni: Small → +30, Medium/Large → +50.
- Ask if the user wants extra cheese (+20).
- Display the final bill.

### **Expected Output Example:**

*Enter pizza size (small/medium/large): small*

*Do you want pepperoni? (yes/no): yes*

*Do you want extra cheese? (yes/no): no*

*Your final bill is: 130 rupees*