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**Green University of Bangladesh**

**Department of Computer Science and Engineering (CSE)**

**Faculty of Sciences and Engineering**

**Semester: (Fall, Year: 2024), B.Sc. in CSE (Day)**

**Lab Report NO #06**

**Course Title: OOP Lab**

**Course Code: CSE 202**

**Section: D9**

**Lab Experiment Name:**  Exception, Custom

Exception, and use of Exception Handling keywords

**Student Details**

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**Lab Date : 18/09/24**

**Submission Date : 24/10/24**

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**[For Teachers use only: Don’t write anything inside this box]**

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| **Lab Report Status**  **Marks: ………………………………… Signature: .....................**  **Comments: .............................................. Date: ..............................** |

**1. INTRODUCTION**

The provided task focuses on the implementation of custom exception handling in Java. Exception handling is a powerful feature in Java that allows developers to manage runtime errors effectively, ensuring that the program can gracefully handle invalid or unexpected inputs.

**2. OBJECTIVES**

The primary objectives of this lab report are as follows:

• Exception and Use of exception handling keywords.

• To build a User defined exception.

**3. IMPLEMENTATION**

**Task 1:**

 Develop a custom exception class named AgeOutOfRangeException that inherits from the Exception class. This class should include a constructor accepting the user’s age as a parameter (e.g., 40). When the exception is triggered, it should display the message: "You are older than the requested age (25 years), you are 40!!!".

 Create another custom exception class called LowGpaException, also extending the Exception class. This class should have a no-argument constructor, which calls the parent class’s constructor with the message: "Your GPA is not sufficient to apply for this job (2.5)".

 Write a main class named GPA, which prompts the user to input their age and GPA. If the user’s age exceeds 25, their application should be rejected, and the program should throw and handle the AgeOutOfRangeException. Similarly, if the user’s GPA is below 2.5, the application should be rejected with the LowGpaException. The program should include two separate try-throw-catch blocks for handling these exceptions. If the user provides acceptable age and GPA, the program should output: "Your application is accepted and is under study."

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Solution:

import java.util.Scanner;

class AgeOutOfRangeException extends Exception {

    public AgeOutOfRangeException(int age) {

        super("You are older than the requested age (25 years), you are " + age + "!!!");

    }

}

class LowGpaException extends Exception {

    public LowGpaException() {

        super("Your GPA is not sufficient to apply for this job (2.5)");

    }

}

public class GPA {

    public static void main(String[] args) {

        Scanner scanner = new Scanner(System.in);

        try {

            System.out.print("Enter your age: ");

            int age = scanner.nextInt();

            if (age > 25) {

                throw new AgeOutOfRangeException(age);

            }

        } catch (AgeOutOfRangeException e) {

            System.out.println(e.getMessage());

            return;

        }

        try {

            System.out.print("Enter your GPA: ");

            double gpa = scanner.nextDouble();

            if (gpa < 2.5) {

                throw new LowGpaException();

            }

        } catch (LowGpaException e) {

            System.out.println(e.getMessage());

            return;

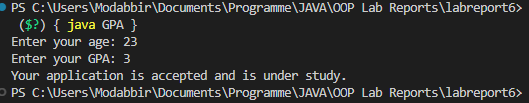
        }

        System.out.println("Your application is accepted and is under study.");

    }

}

**Output**:



**4. DISCUSSION**

This program showcases the use of custom exception handling in Java, an effective approach to managing unique error scenarios beyond standard exceptions. By defining custom exception classes, the program addresses two distinct conditions: an age that surpasses the permissible limit and a GPA that falls short of the required threshold for job eligibility.