



CS321: Lab #2 Exception Handling Part 1

Objective(s)

- 1- Implement a Java program that uses exception handling to process several types of exceptions that may occur such as: InputMismatchException, IndexOutOfBoundsException and NullPointerException.

Tool(s)/Software

- NetBeans or Eclipse or any platform that supports Java.

Description

- try-catch Syntax:

```
try
{
}
catch (ExceptionType name)
{
}
catch (ExceptionType name)
{
}
finally //Optional
{
}
```

- If an exception occurs in a try block, the try block terminates immediately and program control transfers to the first matching catch block. After the exception is handled, control resumes after the last catch block. Known as the termination model of exception handling.



Tasks/Assignments(s)

Task 1:

Write a java program that creates records for the courses in the CSIT College. Each course record has the following information:

- ☒ Course Code: String
- ☒ Course Title: String
- ☒ Credit Hours: double
- ☒ Instructor Name: String
- ☒ and Class Rooms: int

The program prompts the following menu:

- 1- Add Course.
- 2- Print all courses records.
- 3- Update course record.
- 4- Print a course record.
- 5- Exit.

Note:

- We have class **CourseRecord** and we have **2- D** array of **CourseRecord** objects.
- **To add a new course**, there are a maximum number of courses for each level (5 courses)
- We could have a 2-d array (3 levels, 5 courses)

Example:

Level 1, Course 1: Introduction to Computing
Level 1, Course 2: Fundamentals of IS.

- **Update course record:** by entering level number & course code.
- **Print a course record:** by entering level number & course number (column number not course code).

Your program should handle some exceptions that may occur as follows:

- **Add a course record:** If the user entered a mismatched value, the application should print the following error: *Exception thrown: java.util.InputMismatchException (InputMismatchException)* and If the user tried to add more than 5 courses, the application should print an error message (*IndexOutOfBoundsException*).



- **Print a course record:** The user enters the course number, and the level numbers, it has to be within the range or it will print error message (*NullPointerException*).

Sample Run:

```
Menu:
1- Add Course
2- Print all course records
3- Update course record
4- Print a course records
5- Exit
Enter your choice:
4
Please enter level number:
6
Please enter course number:
1
No course to be printed. Exception: Index 6 out of bounds for length 3
```

```
Menu:
1- Add Course
2- Print all course records
3- Update course record
4- Print a course records
5- Exit
Enter your choice:
1
Adding New Course:
-----
Please enter level number:
two
```

Input Mismatch Exception

```
Menu:
1- Add Course
2- Print all course records
3- Update course record
4- Print a course records
5- Exit
Enter your choice:
1
Adding New Course:
-----
Please enter level number:
4
Available levels are: 1, 2 and 3
```

Deliverables(s)

You are required to implement and deliver a Java program as described in the previous section.