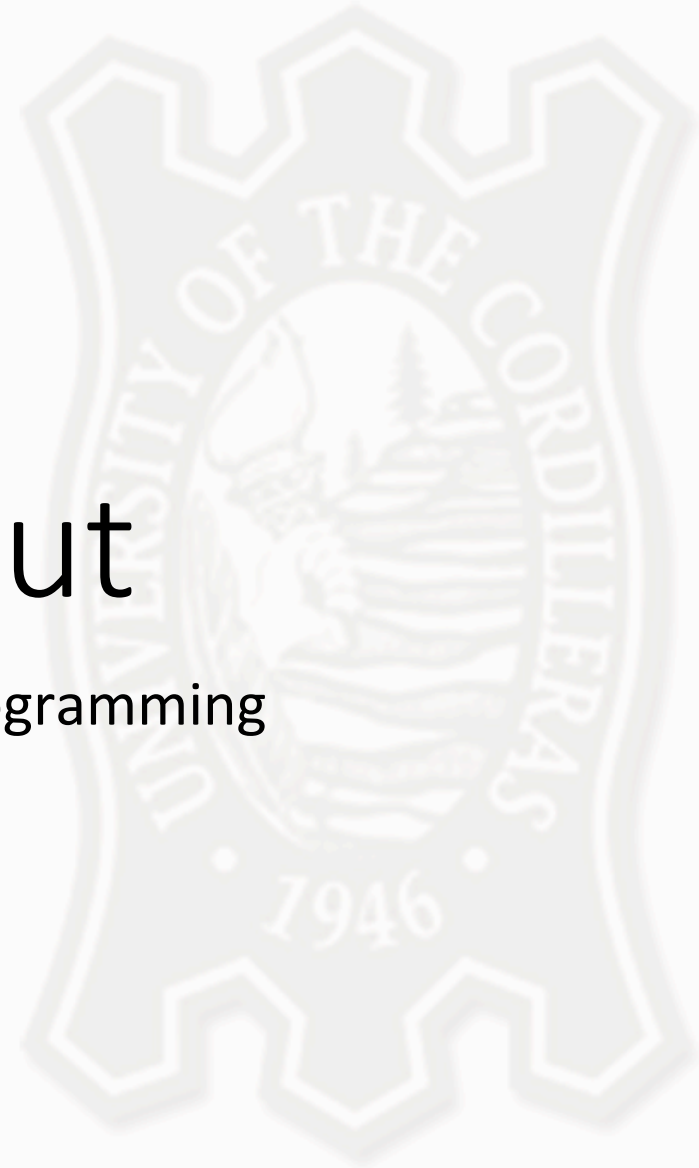
User Input

ICS2 – Introduction to Programming



Getting Input from the Keyboard

- Java provides classes and methods to enable user to input a stream of data from the keyboard
- Basic input methods are contained in the classes:
  - BufferedReader
  - Scanner
  - JOptionPane

BufferedReader Class

- Found in java.io package
- Steps in using BufferedReader to get user input:
  1. Add import *java.io.*;* on top of the code
  2. Add the statement *BufferedReader dataIn = new BufferedReader(new InputStreamReader(System.in));* in the main block.
  3. Declare a temporary *String* variable to hold the input then invoke the *readLine()* method to get the input from the keyboard. The *readLine()* method must be inside a *try-catch* block.

```
//Sample source code for getting input from keyboard

import java.io.*;

public class GetUserInput{
     public static void main(String[] args){

          String text;

          BufferedReader  dataIn=new  BufferedReader(new
               InputStreamReader(System.in));

          System.out.println("Enter Your Name: ");

          try{
               text=dataIn.readLine();
          }catch(IOException e){
               System.out.println("Error!");
          }

          System.out.println("Hello " + text + "!");
     }
}
```

Getting Input of Other Data Types

- The *BufferedReader* and *InputStreamReader* together with *readLine()* will get a *String* input only
- When the input is another data type, it needs to be *parsed (converted)*

- Converting input to integer
  - Immediately after the *try-catch* block, include the statement *Integer.parseInt()* and assign it to an integer value

```
try{
      string=dataIn.readLine();
}catch(IOException e){
      System.out.println("Error!");
}
int number=Integer.parseInt(string);
```

- Converting input to double
  - Immediately after the *try-catch* block, include the statement *Integer.parseDouble()* and assign it to a double value

```
try{
      string=dataIn.readLine();
}catch(IOException e){
      System.out.println("Error!");
}
double number=Double.parseDouble(string);
```

```
import java.io.BufferedReader;
import java.io.InputStreamReader;
import java.io.IOException;

public class BufferedReaderDemo{
    public static void main(String args[]) throws IOException{
      BufferedReader dataIn = new BufferedReader(
          new InputStreamReader(System.in));

      String name = "";
      int number = 0;
      float weight = 0;
      char letter = ' ';

        System.out.println("Enter name:");
        name = dataIn.readLine();
        System.out.println("Enter a number:");
        number = Integer.parseInt(dataIn.readLine());
        System.out.println("Enter weight:");
        weight = Float.parseFloat(dataIn.readLine());
        System.out.println("Enter a letter:");
        letter = dataIn.readLine().charAt(0);

      System.out.println(name+" fed "+number+ "monkeys with"
            +weight+ " kg of class "+letter+" bananas!");

    }
}
```

Problem 3

Problem Definition:

The ABC Manufacturing Company plans to give a year-end bonus to each of its employees. Compute the bonus of an employee. Consider the following criteria: if the employee's monthly salary is less than PhP1000, the bonus is 50% of the salary; for employees with salaries greater than PhP1000, the bonus is PhP1000. Print the name and the bonus of the employee.

Scanner Class

- Found in java.util package
- Steps in using the Scanner class:
  1. Include the statement *import java.util.*;* on top of the class
  2. Add the *Scanner dataIn = new Scanner(System.in);* in the main block.
  3. Use the *nextLine()* method for String inputs

```
import java.util.*;

public class UserInput{
	public static void main(String args[]){
		Scanner dataIn = new Scanner(System.in);

		System.out.print("What is your name? ");
		String name = dataIn.nextLine();

		System.out.print("\nHello " + name);
	}
}
```

Getting Input of Other Data Types

- Scanner class supports getting primitive data types by using the appropriate method:
  - Read a byte - nextByte()
  - Read a short - nextShort()
  - Read an int - nextInt()
  - Read a long - nextLong()
  - Read a float - nextFloat()
  - Read a double - nextDouble()
  - Read a boolean - nextBoolean()

JoptionPane Class

- Found in *javax.swing* package
- Steps in using the JOptionPane class:
  1. Include the statement *import javax.swing`.*;* on top of the class
  2. Add the *JOptionPane.showInputDialog(<String>);* and assign it to a String variable in the main block

Note: Like *BufferedReader* class, *JOptionPane* class only accepts *String* input

Getting Input of Other Data Types

- The *JOptionPane* class will get a *String* input only
- When the input is another data type, it needs to be *parsed (converted)*
  - *parseInt*
  - *parseDouble*
  - *parseFloat*
  - *parseByte*

```
import javax.swing.*;

public class UserInput{
      public static void main(String[] args){
            String input;
            input =
            JOptionPane.showInputDialog
                              ("Enter Name:");
            System.out.println("Hello: " + name);
      }
}
```