EAST WEST UNIVERSITY

Coures : CSE110 , Object Oriented Programming

Assignment : 09

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Submitted To

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Question – 01

Code :

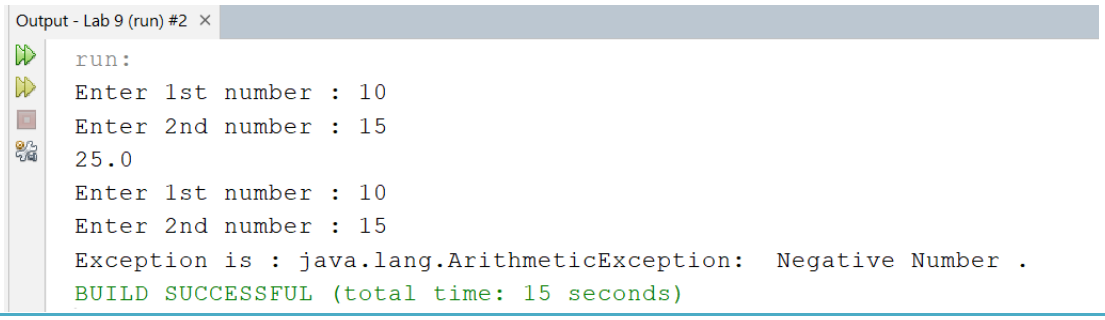
```
public class Calculator {

   private double n1;
   private double n2;

   public Calculator(double n1, double n2) {
      this.n1 = n1;
      this.n2 = n2;
   }

   public double getN1() {
      return n1;
   }

   public double getN2() {
      return n2;
   }

   public double add() {
      double sum = n1 + n2;
      if (sum <= 0) {
         throw new ArithmeticException(" Negative Number .");
      } else {
         return sum;
      }

   }

   public double subtraction() {
      double sub = n1 - n2;

      if (sub <= 0) {
         throw new ArithmeticException(" Negative Number .");
      } else {
         return sub;
      }
   }

   public double multiolication() {
      double multi = n1 * n2;

      if (n1 == 0 || n2 == 0) {
         throw new ArithmeticException("The number is Zero .");
      } else {
         return multi;
      }
```

```
    }

    public double division() {
        double div = n1 / n2;

        if (n1 == 0 || n2 == 0) {
            throw new ArithmeticException("The number is Zero .");
        } else {
            return div;
        }
    }

}
```

```
package lab;

import java.util.InputMismatchException;
import java.util.Scanner;

public class Test1 {

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

        int n1, n2;

        try {
            System.out.print("Enter 1st number : ");
            n1 = x.nextInt();
            System.out.print("Enter 2nd number : ");
            n2 = x.nextInt();

            Calculator obj1 = new Calculator(n1, n2);
            System.out.println(obj1.add());

            System.out.print("Enter 1st number : ");
            n1 = x.nextInt();
            System.out.print("Enter 2nd number : ");
            n2 = x.nextInt();

            Calculator obj2 = new Calculator(n1, n2);
            System.out.println(obj2.subtraction());

            System.out.print("Enter 1st number : ");
            n1 = x.nextInt();
            System.out.print("Enter 2nd number : ");
            n2 = x.nextInt();
            Calculator obj3 = new Calculator(n1, n2);
```

```
        System.out.println(obj3.multiolication());

        System.out.print("Enter 1st number : ");
        n1 = x.nextInt();
        System.out.print("Enter 2nd number : ");
        n2 = x.nextInt();

        Calculator obj4 = new Calculator(n1, n2);
        System.out.println(obj4.division());

      } catch (InputMismatchException e) {
        throw new NumberFormatException();
      } catch (ArithmeticException e) {
        System.out.println("Exception is : " + e);
      } catch (NumberFormatException e) {
        System.out.println("The exception is : " + e);
      }
   }
}
```

OutPut :



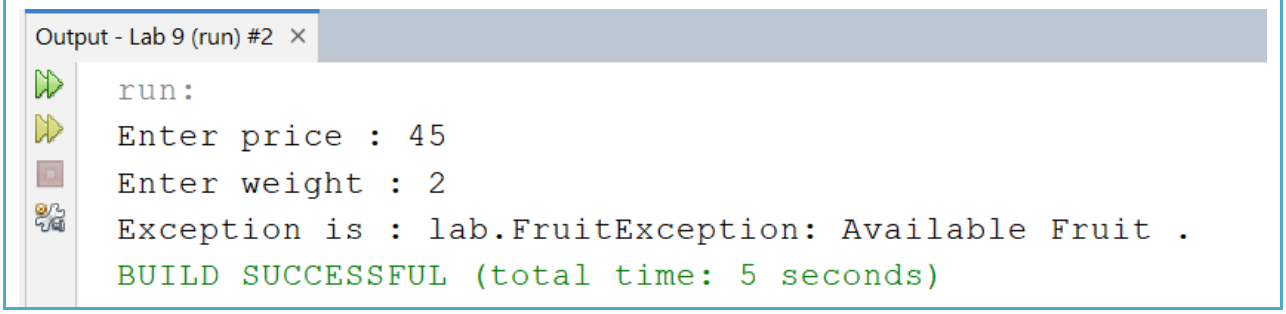
Question – 2

Code :

```
package lab ;
import java.util.Scanner;

class FruitException extends Exception
{
   FruitException (String str)
   {
     super (str) ;
   }
}
```

```
public class Fruit {

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

      double price, weight;

      System.out.print("Enter price : ");
      price = x.nextDouble();
      System.out.print("Enter weight : ");
      weight = x.nextDouble();

      try {
         if (price < 50) {
            throw new FruitException("Available Fruit .");
         } else if (price > 500) {
            throw new FruitException("Rare Fruit");
         } else {
            System.out.println("Price is : " + price * weight);
         }
      } catch (FruitException e) {
         System.out.println("Exception is : " + e);
      }
   }
}
```

OutPut :



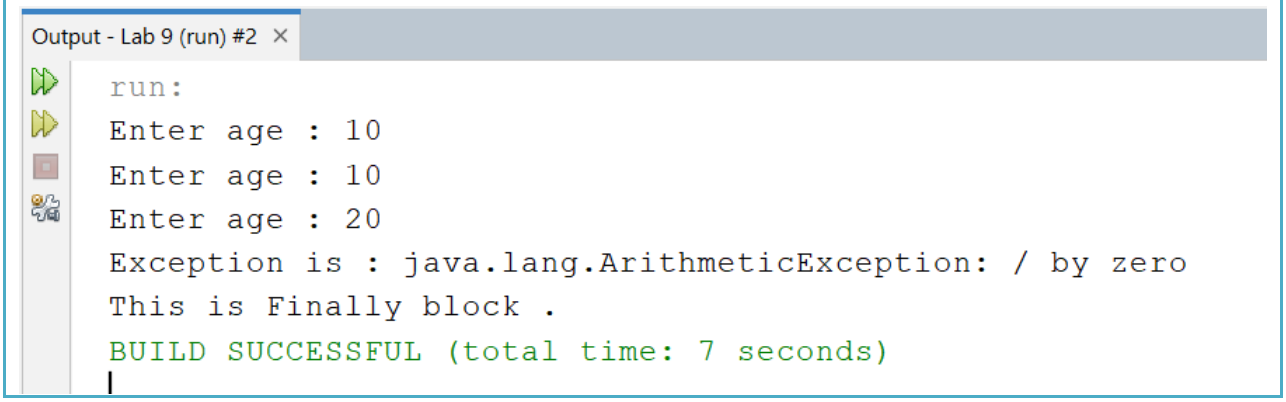
Question – 3

Code :

```
package lab;
import java.util.Scanner;

public class Person {

   public static void main(String[] args) {
```

```
        Scanner x = new Scanner(System.in);

        int[] age = new int[3];

        for (int i = 0; i < 3; i++) {
            System.out.print("Enter age : ");
            age[i] = x.nextInt();
        }

        try {
            int a = age[1] / 0;
        } catch (ArithmeticException e) {
            System.out.println("Exception is : " + e);
        } catch (ArrayIndexOutOfBoundsException e) {
            System.out.println("Exception is : " + e);
        } catch (NumberFormatException e) {
            System.out.println(("Exception is : " + e));
        } catch (NullPointerException e) {
            System.out.println(("Exception is : " + e));
        } catch (StringIndexOutOfBoundsException e) {
            System.out.println(("Exception is : " + e));
        } finally {
            System.out.println("This is Finally block .");
        }

    }
}
```

OutPut :



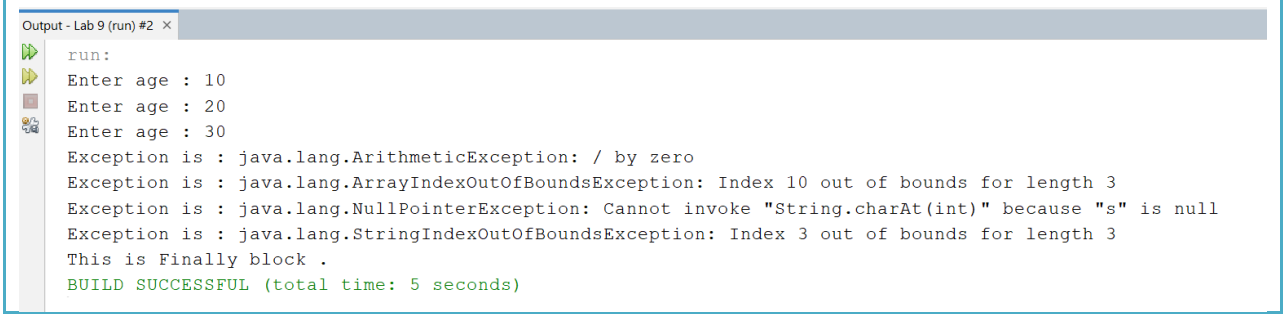
Question – 4

Code :

```
package lab;

import java.util.Scanner;

public class Person2 {

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

      int[] age = new int[3];
      String s = null;
      String s2 = "Ali";

      for (int i = 0; i < 3; i++) {
         System.out.print("Enter age : ");
         age[i] = x.nextInt();
      }

      try {
         try {
            int a = age[1] / 0;
         } catch (ArithmeticException e) {
            System.out.println("Exception is : " + e);
         }

         try {
            System.out.println(age[10]);
         } catch (ArrayIndexOutOfBoundsException e) {
            System.out.println("Exception is : " + e);
         }

         try {
            System.out.println(s.charAt(1));
         } catch (NullPointerException e) {
            System.out.println(("Exception is : " + e));
         }

         try {
            System.out.println(s2.charAt(3));
         } catch (StringIndexOutOfBoundsException e) {
            System.out.println(("Exception is : " + e));
         }

      } catch (Exception e) {
         System.out.println(("Exception is : " + e));
      } finally {
```

```
        System.out.println("This is Finally block .");
    }

  }
}
```

OutPut :



Question – 5

Code :

```
package lab;

public class Problem5 {

  public static void main(String[] args) {
    int arr[] = new int[3];
    String name = "Ali";

    try {
      int a = arr[1] / 0;
    } catch (ArithmeticException e) {
      System.out.println("Invalid Division");
    }

    try {
      System.out.println(arr[5]);
    } catch (ArrayIndexOutOfBoundsException e) {
      System.out.println("Array index is invalid");
    }

    try {
      int a = Integer.parseInt(name);
    } catch (NumberFormatException e) {
      System.out.println("Formate mismatch");
    }

    try {
```

```
            System.out.println(name.charAt(5));
        } catch (StringIndexOutOfBoundsException e) {
            System.out.println("Invalid Index");
        }

        try {
            throw new MyException(5);
        } catch (MyException e) {
            System.out.println(e);
        } finally {
            System.out.println("Exception Handling Completed");
        }

    }
}

class MyException extends Exception {

    private int param;

    public MyException(int param) {
        this.param = param;
    }

    @Override
    public String toString() {
        return "MyException[" + param + "]";
    }
}
```

Output :