1.Tujuan

Menggunakan class-class Java yang telah ada
- Math
- String
- StringBuffer
- Wrapper
- Process
- System

2.Percobaan

Percobaan 1 : Demo Method - Method dari Class Math

```java
public class Java_Lang_MathDemo {

    public Java_Lang_MathDemo() {
    }
    public static void main(String args[]) {
    System.out.println("absolute value of -5: " + Math.abs(-5));
        System.out.println("absolute value of 5: " + Math.abs(-5));
        System.out.println("random number(max value is 10): "Math.random()*10);
        System.out.println("max of 3.5 and 1.2: " + Math.max(3.5, 1.2));
        System.out.println("min of 3.5 and 1.2: " +  Math.min(3.5, 1.2));
        System.out.println("ceiling of 3.5: " + Math.ceil(3.5));
        System.out.println("floor of 3.5: " + Math.floor(3.5));
        System.out.println("e raised to 1: " + Math.exp(1));
        System.out.println("log 10: " + Math.log(10));
        System.out.println("10 raised to 3: " + Math.pow(10,3));
        System.out.println("rounded off value of pi: " + Math.round(Math.PI));
        System.out.println("square root of 5 = " + Math.sqrt(5));
        System.out.println("10 radian = " + Math.toDegrees(10) + " degrees");
        System.out.println("sin(90): " + Math.sin(Math.toRadians(90)));
    }
}
```

Output Percobaan 1

```
Output - JENI_Source_Code (run-single)
init:
deps-jar:
compile-single:
run-single:
absolute value of -5: 5
absolute value of 5: 5
random number(max value is 10): 0.707557491853601
max of 3.5 and 1.2: 3.5
min of 3.5 and 1.2: 1.2
ceiling of 3.5: 4.0
floor of 3.5: 3.0
e raised to 1: 2.7182818284590455
log 10: 2.302585092994046
10 raised to 3: 1000.0
rounded off value of pi: 3
square root of 5 = 2.23606797749979
10 radian = 572.9577951308232 degrees
sin(90): 1.0
BUILD SUCCESSFUL (total time: 4 seconds)
```

Percobaan 2 : String Constructor Demo

```java
public class Java_Lang_StringConstructorDemo {

    public Java_Lang_StringConstructorDemo() {
    }
    public static void main(String args[]) {
        String s1 = new String();  // creates an empty string
        char chars[] = { 'h', 'e', 'l', 'l', 'o'};
        String s2 = new String(chars); // s2 = "hello";
        byte bytes[] = { 'w', 'o', 'r', 'l', 'd' };
        String s3 = new String(bytes);     // s3 = "world"
        String s4 = new String(chars, 1, 3);
        String s5 = new String(s2);
        String s6 = s2;
        System.out.println(s1);
        System.out.println(s2);
        System.out.println(s3);
        System.out.println(s4);
        System.out.println(s5);
        System.out.println(s6);
    }
}
```

Output Percobaan 2 :

```
Output - JENI_Source_Code (run-single)
init:
deps-jar:
compile-single:
run-single:

hello
world
ell
hello
hello
BUILD SUCCESSFUL (total time: 1 second)
```

Percobaan 3 : Demo Method Class String

Output Percobaan 3 :

```
Output - JENI_Source_Code (run-single)
init:
deps-jar:
compile-single:
run-single:
name: Jonathan
3rd character of name: n
Jonathan compared to Solomon: -9
Solomon compared to Jonathan: 9
Jonathan compared to jonathan: -32
Jonathan compared to jonathan (ignore case): 0
Is Jonathan equal to Jonathan? true
Is Jonathan equal to jonathan? false
Is Jonathan equal to jonathan (ignore case)? true
getChars method: Hi Jo
Length of name: 8
Replace a's with e's in name: Jonethen
A substring of name: Jo
Trim "   a b c d e f   ": "a b c d e f"
String representation of boolean expression 10>10: false
String representation of boolean expression 10<10: false
name: Jonathan
BUILD SUCCESSFUL (total time: 0 seconds)
```

Percobaan 4 : Demo Method Class String Buffer

```java
public class Java_Lang_StringBufferDemo {
    public Java_Lang_StringBufferDemo() {
    }
    public static void main(String args[]) {
        StringBuffer sb = new StringBuffer("Jonathan");
        System.out.println("sb = " + sb);
        System.out.println("capacity of sb: " + sb.capacity());
        System.out.println("append \'O\' to sb: " + sb.append("O"));
        System.out.println("sb = " + sb);
        System.out.println("3rd character of sb: " +  sb.charAt(2));
        char charArr[] = "Hi XX".toCharArray();
        sb.getChars(0, 2, charArr, 3);
        System.out.print("getChars method: ");
        System.out.println(charArr);
        System.out.println("Insert \'jo\' at the 3rd cell: " + sb.insert(2, "jo"));
        System.out.println("Delete \'jo\' at the 3rd cell: " +  sb.delete(2,4));
        System.out.println("length of sb: " + sb.length());
        System.out.println("replace: " + sb.replace(3, 9, " Ong"));
        System.out.println("substring (1st two characters): " +  sb.substring(0, 3));
        System.out.println("implicit toString(): " + sb);
    }
}
```

Output Percobaan 4 :

```
Output - JENI_Source_Code (run-single)
init:
deps-jar:
compile-single:
run-single:
sb = Jonathan
capacity of sb: 24
append 'O' to sb: Jonathan0
sb = Jonathan0
3rd character of sb: n
getChars method: Hi Jo
Insert 'jo' at the 3rd cell: Jojonathan0
Delete 'jo' at the 3rd cell: Jonathan0
length of sb: 9
replace: Jon Ong
substring (1st two characters): Jon
implicit toString(): Jon Ong
BUILD SUCCESSFUL (total time: 0 seconds)
```

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Percobaan 5 : Class Boolean Wrapper

```java
public class Java_Lang_BooleanWrapper {

    public Java_Lang_BooleanWrapper() {
    }
    public static void main(String args[]) {
            boolean booleanVar = 1>2;
            Boolean booleanObj = new Boolean("TRue");
            Boolean booleanObj2 = new Boolean(booleanVar);
            System.out.println("booleanVar = " + booleanVar);
            System.out.println("booleanObj = " + booleanObj);
            System.out.println("booleanObj2 = " + booleanObj2);
            System.out.println("compare2wrapperobjects:" + booleanObj.equals(booleanObj2));
            booleanVar = booleanObj.booleanValue();
            System.out.println("booleanVar = " + booleanVar);
    }
}
```

Output Percobaan 5 :

Percobaan 6 : Class Runtime – Membuka Registry Editor

```
public class Java_Lang_RuntimeDemo {

    public Java_Lang_RuntimeDemo() {
    }
    public static void main(String args[]) {
          Runtime rt = Runtime.getRuntime();
          Process proc;
          try {
          proc = rt.exec("regedit");
          proc.waitFor();   //try removing this line
          } catch (Exception e) {
          System.out.println("regedit is an unknown command.");
          }
    }
}
```

Output Percobaan 6 :
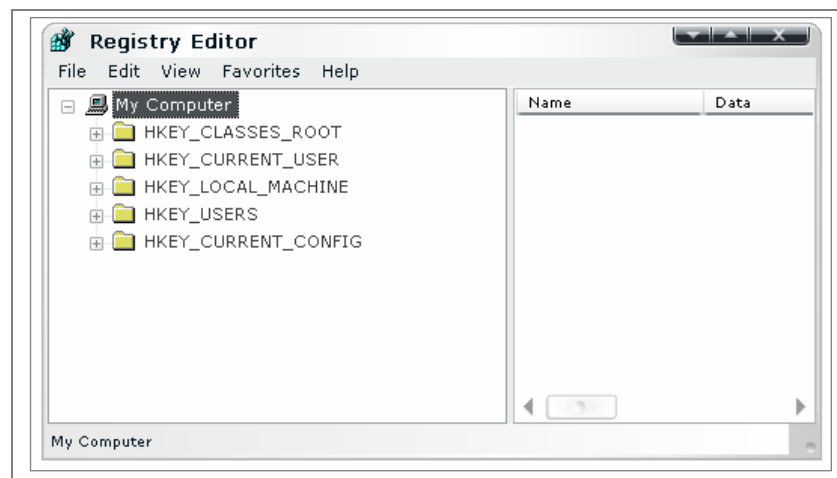
Percobaan 7 : Demo Class System

```java
import java.io.*;
public class Java_Lang_SystemDemo {

public Java_Lang_SystemDemo() {
}
public static void main(String args[]) throws IOException {
int arr1[] = new int[1050000];
int arr2[] = new int[1050000];
long startTime, endTime;

for (int i = 0; i < arr1.length; i++) {
arr1[i] = i + 1;
}

startTime = System.currentTimeMillis();
for (int i = 0; i < arr1.length; i++) {
arr2[i] = arr1[i];
}
endTime = System.currentTimeMillis();
System.out.println("Time for manual copy: " + (endTime-startTime) + " ms.");
startTime = System.currentTimeMillis();
System.arraycopy(arr1, 0, arr2, 0, arr1.length);
endTime = System.currentTimeMillis();
System.out.println("Time for manual copy: " + (endTime-startTime) + " ms.");

System.gc();        //force garbage collector
System.setIn(new FileInputStream("temp.txt"));
System.exit(0);
}
}
```

Output Percobaan 7 :

```
Output - JENI_Source_Code (run-single)
init:
deps-jar:
Compiling 1 source file to E:\JAVA PROJECTS\JENI PROJECTS\Validation Source Code\JENI Source Code\build\classes
compile-single:
run-single:
Time for manual copy: 10 ms.
Time for manual copy: 30 ms.
BUILD SUCCESSFUL (total time: 0 seconds)
```