

ASSIGNMENT JAVA DAY9

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1. Create a Functional Interface with the name 'ConcatString' as given below:

Implement this Interface as Lambda and use it to concatenate two strings.

```
package assignment9;

public interface ConcatString {
    String concat(String s1, String s2);
}
```

```
package assignment9;

public class MainClass {
    public static void main(String[] args) {
        ConcatString concatstring = ((s1, s2) -> s1 + s2);
        System.out.println(concatstring.concat(" hey ", " aliens! "));
    }
}
```

OUTPUT:

```
"C:\Program Files\Java\jdk-11\bin\java.exe" "-javaagent:C:\Program File
hey  aliens!

Process finished with exit code 0
```

2. Use Predicate Interface to perform the following:

a Check whether a number is divisible by 5.

b Check whether a number is divisible by 2.

c Check whether a number is divisible by both 2 and 5.

d Check whether a number is divisible by 2 or 5.

```
package assignment9;

public class PredicateTest {
    boolean checkdiv5(int n) {
        return n % 5 == 0;
    }
    boolean checkdiv2(int n) {
        return n % 2 == 0;
    }
    boolean check2and5(int n) {
        return (n % 5 == 0) && (n % 2 == 0);
    }
    boolean check2or5(int n) {
        return (n % 5 == 0) || (n % 2 == 0);
    }
}
```

```
package assignment9;
import java.util.function.Predicate;

public class MainClass {
    public static void main(String[] args) {
        Predicate<Integer> div5 = new PredicateTest().checkdiv5;
        Predicate<Integer> div2 = new PredicateTest().checkdiv2;
        Predicate<Integer> div2Anddiv5 = new PredicateTest().check2and5;
        Predicate<Integer> div2or5 = new PredicateTest().check2or5;
        System.out.println(div5.test(20) + " ");

        System.out.println(div2.test(20) + " ");

        System.out.println(div2Anddiv5.test(20) + " ");

        System.out.println(div2or5.test(20) + " ");
    }
}
```

OUTPUT:

```
"C:\Program Files\Java\jdk-11\bin\java.exe" "-javaagent:C:\Program Files\Java\jdk-11\bin\javaagent.jar" -Dcom.sun.management.jmxremote -Dcom.sun.management.jmxremote.port=9090 -Dcom.sun.management.jmxremote.ssl=false -Dcom.sun.management.jmxremote.authenticate=false -Dcom.sun.management.jmxremote.local.only=false --add-exports java.desktop/com.sun.java.swing=ALL-UNNAMED --add-exports java.desktop/com.sun.java.swing.internal=ALL-UNNAMED --add-exports java.desktop/com.sun.java.swing.internal=ALL-UNNAMED --add-exports java.desktop/com.sun.java.swing=ALL-UNNAMED --add-exports java.desktop/com.sun.java.swing.internal=ALL-UNNAMED --add-exports java.desktop/com.sun.java.swing=ALL-UNNAMED --add-exports java.desktop/com.sun.java.swing.internal=ALL-UNNAMED --add-exports java.desktop/com.sun.java.swing=ALL-UNNAMED --add-exports java.desktop/com.sun.java.swing.internal=ALL-UNNAMED --add-exports java.desktop/com.sun.java.swing=ALL-UNNAMED --add-exports java.desktop/com.sun.java.swing.internal=ALL-UNNAMED --add-exports java.desktop/com.sun.java.swing=ALL-UNNAMED --add-exports java.desktop/com.sun.java.swing.internal=ALL-UNNAMED --add-exports java.desktop/com.sun.java.swing=ALL-UNNAMED --add-exports java.desktop/com.sun.java.swing.internal=ALL-UNNED  
true  
true  
true  
true  
  
Process finished with exit code 0
```

3. Create an array of Customer objects for the class created in Day 2 assignment and print all those customers whose monthly income is greater than 5lac per annum. Create your own Functional Interface and implement it.

4. Use the same interface to print all those customers whose age is in range of 18 to 25.

```
package assignment9;  
  
import org.example.ClassCustomer;  
  
import java.time.Duration;  
import java.time.LocalDate;  
  
public class MainClass {  
    public static void main(String[] args) {  
        ClassCustomer[] cc = new ClassCustomer[7];  
        cc[0] = new ClassCustomer("Aman", 100000, 30000, "1999-12-12");  
        cc[1] = new ClassCustomer("Harshit", 300000, 120000, "2000-11-13");  
        cc[2] = new ClassCustomer("Kushmakar", 400000, 220000, "2001-10-  
14");  
        cc[3] = new ClassCustomer("Arka", 500000, 320000, "1993-09-15");  
        cc[4] = new ClassCustomer("Tuhin", 600000, 420000, "2003-08-16");  
        cc[5] = new ClassCustomer("soman", 700000, 520000, "2003-07-17");  
        cc[6] = new ClassCustomer("Shankar", 100000, 20000, "1997-06-18");  
        income5L income = x -> {  
            for (ClassCustomer i : x) {  
                if (i.getMonthlyIncome() > 500000)            }  
        }  
    }  
}
```

```

        System.out.println(i);
    }
};
System.out.println("Income above 5L : ");
income.run(cc);
System.out.println("\nAge between 18-25 : ");
ageBetween18To25 ageBetween = x -> {
    for (ClassCustomer i : x) {
        int age =
(int) (Duration.between(LocalDate.now().atStartOfDay(),
i.getDateOfBirth().atStartOfDay()).toDays() % 365);
//
        if (age > 18 && age < 25) {
            System.out.println(i);
        }
    }
};
ageBetween.run(cc);
}
}

```

OUTPUT:

```

"C:\Program Files\Java\jdk-11\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2022.2.3\lib\idea_rt.jar=57875:C:\Program
Income above 5L :
ClassCustomer{customerId=0, customerName='Tuhin', dateOfBirth=2003-08-16, contactNumber='null', emailAddress='null', monthlyIncome=600000.0, profession='null'}
ClassCustomer{customerId=0, customerName='soman', dateOfBirth=2003-07-17, contactNumber='null', emailAddress='null', monthlyIncome=700000.0, profession='null'}

Age between 18-25 :

Process finished with exit code 0

```

```

Unity Edition 2022.2.3\lib\idea_rt.jar=57875:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2022.2.3\bin" -Dfile.encoding=UTF-8 -classpath C:\Use
Address='null', monthlyIncome=600000.0, profession='null', totalMonthlyExpenses=420000.0, maxEligibleLoanAmount=0.0, designation='null', companyName='null'}
Address='null', monthlyIncome=700000.0, profession='null', totalMonthlyExpenses=520000.0, maxEligibleLoanAmount=0.0, designation='null', companyName='null'}

```

5. Create an array of LoanAgreement class objects and print all those Loan accounts whose status is 'Active' and whose EMI is pending. Use the 'Predicate' Functional Interface to achieve the same.

6. Java contains an interface 'Comparator' to compare two objects. Create a sort method to sort the LoanAgreement array based on Loan amount descending using the Comparator interface. The

implementation of the Comparator interface must be provided as Lambda expression.

```
package assignment9;

//import javax.swing.text.Utilities;

import java.time.Duration;
import java.time.LocalDate;
import java.util.Arrays;
import java.util.function.Predicate;
import org.example.LoanAgreement;
public class LoanAgreementMain {

    public static void main(String[] args) {
        LoanAgreement la[] = new LoanAgreement[8];
        la[0] = new LoanAgreement(LoanStatus.APPROVED, "2023-04-10",
1200000);
        la[1] = new LoanAgreement(LoanStatus.PENDING, "2023-02-10",
1100000);
        la[2] = new LoanAgreement(LoanStatus.ACTIVE, "2023-01-05", 500000);
        la[3] = new LoanAgreement(LoanStatus.ACTIVE, "2023-04-30", 120000);
        la[4] = new LoanAgreement(LoanStatus.ACTIVE, "2023-05-28", 430000);
        la[5] = new LoanAgreement(LoanStatus.ACTIVE, "2023-03-31", 950000);
        la[6] = new LoanAgreement(LoanStatus.APPROVED, "2023-07-15",
220000);
        la[7] = new LoanAgreement(LoanStatus.CLOSED, "2023-08-10",
3250000);
        Predicate<LoanAgreement> q5 = (x) -> {
            boolean statusActive = x.getLoanStatus() == LoanStatus.ACTIVE;
            int dateDiff =
(int)Duration.between(LocalDate.now().atStartOfDay(),
x.getLoanDisbursalDate().atStartOfDay()).toDays();
            boolean isLate = dateDiff < 0;
            return statusActive && isLate;
        };
        System.out.println("Q5\nLoan Agreements with Active status and
Delay payment: ");

        Arrays.stream(la).filter(x ->
            q5.test(x)).forEach(System.out::println);

        System.out.println("\n\nQ6");

        Arrays.sort(la, (a, b) -> (int) (b.getLoanAmount() -
a.getLoanAmount()));

        for (LoanAgreement l : la) {
            System.out.println(l);
        }
    }
}
```

```
"C:\Program Files\Java\jdk-11\bin\java.exe" --javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Community Edition 2022.2.3\lib\idea_rt.jar=57225:C:\Program
Q5
Loan Agreements with Active status and Delay payment:
LoanAgreement{loanStatus=ACTIVE, loanDisbursalDate=2023-01-05, income=500000.0, loanAgreementId=0, loanAmount=0.0, tenure=0, roi=0.0, emiPerMonth=0.0, repay#

Q6
LoanAgreement{loanStatus=APPROVED, loanDisbursalDate=2023-04-10, income=1200000.0, loanAgreementId=0, loanAmount=0.0, tenure=0, roi=0.0, emiPerMonth=0.0, rep
LoanAgreement{loanStatus=PENDING, loanDisbursalDate=2023-02-10, income=1100000.0, loanAgreementId=0, loanAmount=0.0, tenure=0, roi=0.0, emiPerMonth=0.0, repa
LoanAgreement{loanStatus=ACTIVE, loanDisbursalDate=2023-01-05, income=500000.0, loanAgreementId=0, loanAmount=0.0, tenure=0, roi=0.0, emiPerMonth=0.0, repay#
LoanAgreement{loanStatus=ACTIVE, loanDisbursalDate=2023-04-30, income=120000.0, loanAgreementId=0, loanAmount=0.0, tenure=0, roi=0.0, emiPerMonth=0.0, repay#
LoanAgreement{loanStatus=ACTIVE, loanDisbursalDate=2023-05-28, income=430000.0, loanAgreementId=0, loanAmount=0.0, tenure=0, roi=0.0, emiPerMonth=0.0, repay#
LoanAgreement{loanStatus=ACTIVE, loanDisbursalDate=2023-03-31, income=950000.0, loanAgreementId=0, loanAmount=0.0, tenure=0, roi=0.0, emiPerMonth=0.0, repay#
LoanAgreement{loanStatus=APPROVED, loanDisbursalDate=2023-07-15, income=220000.0, loanAgreementId=0, loanAmount=0.0, tenure=0, roi=0.0, emiPerMonth=0.0, repa
LoanAgreement{loanStatus=CLOSED, loanDisbursalDate=2023-08-10, income=3250000.0, loanAgreementId=0, loanAmount=0.0, tenure=0, roi=0.0, emiPerMonth=0.0, repay#

Process finished with exit code 0
```