



TTTK3163

Compiler Construction

JFlex

Assignment

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Programming Assignment TK3163
Sem 2, 2021/2022

Introduction

The purpose of this assignment is to give students the opportunity to use specialized JFlex software to support pattern recognition through regular expression techniques. The distribution of marks in this assignment is 70% on the accuracy of the output, 20% on the interface with clear input and output information and 10% on additional features that show the ability of students to use this software.

Question

Develop the JFlex specification to identify key information contained in UKM's offer letter for the Undergraduate Studies Program. Generate a Java program to accept the offer letter as input to the program and list important attributes such as ***Student Name, Faculty, Program of Study, Start Session*** and ***Tuition Fee***.

JFlex Spec:

%%

%public

%class StudentInfo

%standalone

sainum = [0-9]

saimatricnum = A{sainum}{6}

saifaculty = [A-Z&\]+

saiword = [A-Z\]+

saiyear = {sainum}{4}/{sainum}{4}

saifee = {sainum}+\. {sainum}{3}\. {sainum}{2}

saispace = [\ \t\r\n]

%state NAME,saifee,REST

```
%{init
```

```
    yybegin(REST);
```

```
%init}
```

```
%%
```

```
<REST> {
```

```
    "SDR " | "SDRI " {
```

```
        yybegin(NAME);
```

```
    }
```

```
    "FAKULTI : "{saifaculty} {
```

```
        System.out.println("faculty: " + yytext().split(":")[1]);
```

```
    }
```

```
    "PROGRAM PENGAJIAN : "{saiword} {
```

```
        System.out.println("Program of Study: " + yytext().split(":")[1]);
```

```
    }
```

```
    "tempoh pengajian " {
```

```
        yybegin(saifee);
```

```
    }
```

```
    {saiyear} {
```

```
        System.out.println("Start Session: " + yytext());
```

```
    }
```

```
}
```

```
<NAME> {
```

```
    {saiword} {
```

```

        System.out.println("Name: " + yytext());
        yybegin(REST);
    }
}

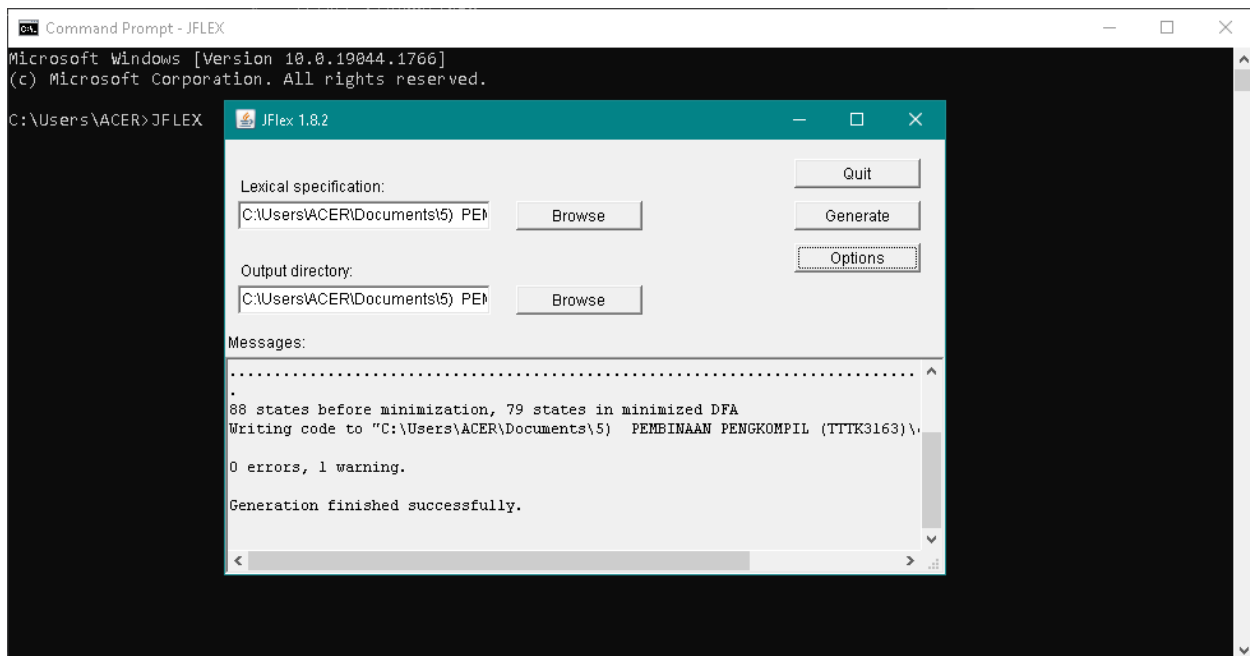
<saifree> {
    {saifree} {
        System.out.println("Tuition fee: " + yytext());
        yybegin(REST);
    }
}

{saispace} {}

. {}

```

JFlex Generate



Java Output

```
import java.io.*;

public class A179830 {
    public static void main(String[] argv) {
        // find OfferLetter.txt
        File dirName = new File("OfferLetter.txt"); //read file OfferLetter.txt
        try {
            //import the OfferLetter.txt
            BufferedReader reader = new BufferedReader(new FileReader(dirName));
            StudentInfo jflex = new StudentInfo(reader); // pass to java jflex
file
            // run jflex
            jflex.yylex();
        } catch (Exception e) {
        }
    }
}
```

Offer Letter

```
JFLEX > ≡ OfferLetter.txt
1  PUSAT PENGURUSAN AKADEMIK • CENTRE FOR ACADEMIC MANAGEMENT
2  Rujukan : UKM.AKA.600-4/1/9
3  Tarikh : 19/08/2020
4  SDR MOHAMAD SAIFUL NIZAM BIN ABD AZIZ
5  NO. 307 LORONG PP7 TAMAN PINGGIRAN PEDAS
6  71400 PEDAS
7  NEGERI SEMBILAN
8
9  Saudara/i,
10 TAWARAN KEMASUKAN SESI AKADEMIK 2020/2021
11 Dengan sukacitanya saya bagi pihak Universiti Kebangsaan Malaysia (UKM) mengucapkan tahniah kepada saudara/i
12 dan seterusnya memaklumkan bahawa saudara/i ditawarkan tempat untuk mengikuti program pengajian di UKM.
13 Maklumat tawaran adalah seperti berikut:
14 NO. PENDAFTARAN : A179830
15 FAKULTI : TEKNOLOGI & SAINS MAKLUMAT
16 PROGRAM PENGAJIAN : SARJANA MUDA SAINS KOMPUTER DENGAN KEPUJIAN
17 TAHUN PENGAJIAN : SATU
18 TEMPAT PENDAFTARAN : KOLEJ PENDETA ZA'BA (L), UKM, BANGI
19 TARIKH PENDAFTARAN : 04/10/2020 ( 12:30 Tengah Hari - 04:30 Petang )
20 YURAN KEMASUKAN : RM 1,200.00
21 Saudara/i akan mengikuti program pengajian berkenaan selama empat (4) tahun. Berikut adalah maklumat kos
22 pengajian yang berkaitan:-
23 Tempoh
24 Kos Yang Ditanggung Oleh Pelajar
25 (RM) *
26 Kos Yang Ditanggung Oleh Kerajaan
27 (RM)
28 Kos Keseluruhan (RM)
29 Setahun 1,880.00 20,158.00 22,038.00
30 Sepanjang tempoh pengajian 7,520.00 80,632.00 88,152.00
31 Dimaklumkan juga bahawa program yang ditawarkan kepada saudara/i adalah muktamad dan sebarang permohonan
32 pertukaran adalah tidak dibenarkan. Sekiranya saudara/i tidak mendaftar pada tarikh ditetapkan, maka tawaran ini akan
33 terbatal dan tempat saudara/i akan digantikan dengan calon yang lain.
34 Untuk maklumat lanjut, sila rujuk Panduan Pendaftaran Pelajar Baru yang boleh dicetak di laman web ukm:
35 https://apps.mu.ukm.my/edafatar/.
36 Sekian, terima kasih.
```

Output

```
PS C:\Users\ACER\Documents\5) PEMBINAAN PENGKOMPIIL (TTTK3163)\JFLEX> cd "c:\Users\ACER\Documents\5) PEMBINAAN PENGKOMPIIL (TTTK3163)\JFLEX\" ; if ($?) { javac A179830.java } ; if ($?) { java A179830 }
Name: MOHAMAD SAIFUL NIZAM BIN ABD AZIZ
Start Session: 2020/2021
faculty: TEKNOLOGI & SAINS MAKLUMAT
Program of Study: SARJANA MUDA SAINS KOMPUTER DENGAN KEPUJIAN
Tuition fee: 7,520.00
PS C:\Users\ACER\Documents\5) PEMBINAAN PENGKOMPIIL (TTTK3163)\JFLEX>
```