

TCS-601

Compiler Design

Assignment-01.

Name: Vidha Pandey

Roll no: 23

Section: CS-DS

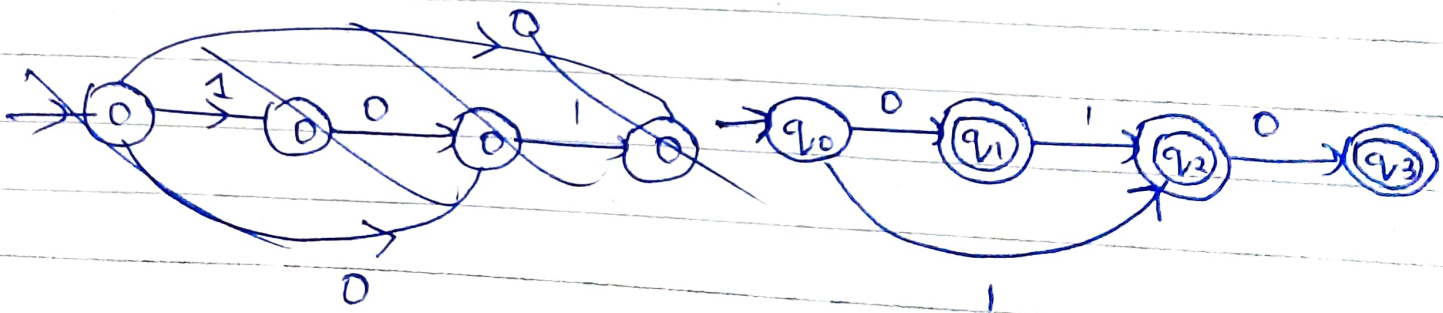
Q-1:

Since L is set of all substrings of " w ", so if we consider " w " as " 101 " then the substrings of w are

$\{\epsilon, 0, 1, 01, 10, 101\}$

$w = 010$; $n = 3$

$L = \{\epsilon, 0, 1, 01, 10, 101\}$



4 states
($n+1$) states.

Ques-3:

Pure High Level Language:

It refers to the language which is having macros in the program and file inclusion.

Lexical analyzer does the conversion of HL into pure High level language.

Ques-4:

Preprocessor error messages.

- cast of #define value is ignored.
- The preprocessor ignores a cast of the replacement value in a #define statement.
- Incorrect indication on variable '%0c'.
Variable is subscripted, [], or dereferenced, *, %lc time but declared with indication of %2c.
- this occurs when address or value of a variable is incorrectly expressed because of faulty indication.

- last component of structure reference '%0c' is 'illegal'.
- ↳ this error occurs when the preprocessor encounters an unrecognized name in a structure reference.
- Unclosed block - %0x unbalanced left brace.
- ↳ preprocessor reached the end of the file still expecting one or more closing braces.

Question-5.

```

1. /* Macro Definition */
2. #define pi 3.14172
3. #include <stdio.h>
4.
5. int main()
6. {
7.     float r, A;
8.     printf("enter the radius");
9.     scanf("%f", &r);
10.    A = pi * r * r;

```



```
11. printf ("Area = %f", A);  
12. return 0;  
13 }
```

line 1: comment is ignored by preprocessor. Hence, it is not included in ".i" file i.e., preprocessed file

line 2 i.e., macro #include <stdio.h> is replaced by the code of stdio.h.

line 3 i.e., macro #define pi 3.14172 replaces all pi variable by 3.14172 value & is not included in ".i" file.

i.e., in line 10 pi will be replaced by value 3.14172.

```
extern char *ctermid (char *__s) __attribute__ ((__nothrow__ , __leaf__));  
# 840 "/usr/include/stdio.h" 3 4  
extern void flockfile (FILE *__stream) __attribute__ ((__nothrow__ , __leaf__));
```

Files

```
extern int ftrylockfile (FILE *__stream) __attribute__ ((__nothrow__ ,  
__leaf__)) ;
```

```
extern void funlockfile (FILE *__stream) __attribute__ ((__nothrow__ ,  
__leaf__));
```

```
# 868 "/usr/include/stdio.h" 3 4
```

```
# 4 "compiler.c" 2
```

```
# 4 "compiler.c"
```

```
int main()
```

```
{
```

```
float r,A;
```

```
printf("enter radius");
```

```
scanf("%f",&r);
```

```
A=3.1472*r*r;
```

```
printf("Area is =%f",A);
```

```
return 0;
```

```
}
```