

3/9/2020
Thursday

Week 4

1. Write a regular definition to display a line of string for following lex:-

(a) All strings of digits atmost one repeated digit.

/*-*/

```
#include <stdio.h>
#include <string.h>
```

```
#include <stdlib.h>
```

```
int arr[10] = {0};
```

```
int flag = 0, c = 0;
```

/*-*/

```
enum {0-9}
```

/*-*/

```
{enum} {arr[atoi(yytext)]++;}
```

```
"\n" {
```

```
int i = 0;
```

```
for(i = 0; i < 10; i++) {
```

```
if(arr[i] >= 2) {
```

```
c++;
```

```
}
```

```
}
```

```
if(c <= 1) printf("Valid\n");
```

```
else printf("Invalid\n");
```

```
for(i = 0; i < 10; i++) arr[i] = 0;
```

```
c = 0;
```

```
}
```

```
• {if(flag != 1) printf("Invalid\n"); flag = 1;}
```

/*-*/

```
int main() {
```

```
yylex();
```

```
return 0;
```

```
}
```

OUTPUT

112

Valid

1122

Invalid

1234

Valid

(b) All strings of a's & b's with an even number of a's & odd number of b's.

1.1

```
#include <stdio.h>
#include <string.h>
#include <stdlib.h>
int ac=0, bc=0, flag=0;
```

1.3

1.7

```
"a" {ac++;}
```

```
"b" {bc++;}
```

```
"\n" { if(flag == 0 && ac%2 == 0 && bc%2 == 1) printf("Accepted");
      else if(flag == 0) printf("Not accepted\n");
      ac=0; bc=0;
      flag=0;
```

```
}
• {printf("Invalid\n"); flag=1;}
```

1.7

```
int main() {
    yylex();
    return 0;
```

```
}
```

OUTPUT

```
Caab
Accepted
abb
Not accepted
abc
Invalid
```

(c) All strings of lower case letters containing 5 vowels in order.

1.1

```
#include <stdio.h>
#include <string.h>
int flag=1;
```

1.3

Consonant [bcd fg h j k l m n p q r s t v w x y z] #
 ves a + {consonant}* e + {consonant}* i + {consonant}* o + {consonant}*
 u + {consonant}*

/.f.
 {ves} {printf("Valid %.5ln", yytext); }
 • {printf("Invalid\n"); flag = 0; }

/.f.
 int main() {
 yylex();
 return 0;
 }

OUTPUT

aaceiiiauu
 Valid aaceiiiauu
 aueo
 Invalid

srihari@LAPTOP-AJMTFS87: ~/compiler_design/week4
srihari@LAPTOP-AJMTFS87:~/compiler_design/week4\$ cat que3.c

```
%{
#include<stdio.h>
#include<string.h>
#include<stdlib.h>
int arr[10] = {0};
int flag = 0;
int c=0;
}%

num [0-9]

%%
{num} {arr[atoi(yytext)]++;}
"\n" {
    int i=0;
    for(i=0;i<10;i++){
        if(arr[i] >= 2){
            printf("Invalid\n");
            flag = 1;
            c++;
        }
    }
    if(c<=1){
        printf("Valid\n");
    }
    else{
        printf("Invalid\n");
    }
    for(i = 0;i<10;i++) arr[i] = 0;
    c = 0;
}
. {if(flag != 1)printf("Invalid\n");flag = 1;}
%%

int main(){
    yylex();
    return 0;
}
```

srihari@LAPTOP-AJMTFS87:~/compiler_design/week4\$./a.out

```
112
Valid
1122
Invalid
1234
Valid
```



Type here to search



13:43
03-09-2020




```
srihari@LAPTOP-AJMTFS87: ~/compiler_design/week4
srihari@LAPTOP-AJMTFS87:~/compiler_design/week4$ cat que2.c
%{
#include<stdio.h>
#include<string.h>
#include<stdlib.h>
int ac=0,bc=0;
int flag=0;
}%

%%
"a" {ac++;}
"b" {bc++;}
"\n" { if(flag == 0 && ac%2 == 0 && bc%2==1){printf("Accepted\n");}
      else if(flag == 0){ printf("Not accepted\n");}
      ac = 0;bc = 0;
      flag = 0;
    }
. {printf("Invalid\n");flag = 1;}
%%

int main(){
    yylex();
    return 0;
}

srihari@LAPTOP-AJMTFS87:~/compiler_design/week4$ lex que2.c
srihari@LAPTOP-AJMTFS87:~/compiler_design/week4$ cc lex.yy.c -ll
srihari@LAPTOP-AJMTFS87:~/compiler_design/week4$ ./a.out
aab
Accepted
abb
Not accepted
abcd
Invalid
Invalid
^C
srihari@LAPTOP-AJMTFS87:~/compiler_design/week4$
```



```
srihari@LAPTOP-AJMTFS87: ~/compiler_design/week4
srihari@LAPTOP-AJMTFS87:~/compiler_design/week4$ cat que1.c
%{
#include<stdio.h>
#include<string.h>
int flag = 1;
%}

consonant [bcdfghjklmnpqrstvwxyz]+
res a+{consonant}*e+{consonant}*i+{consonant}*o+{consonant}*u+{consonant}*
%%
{res} {printf("Valid %s\n",yytext);}
. {printf("Invalid\n");flag=0;}

%%
}

int main(){
    yylex();
    return 0;
}

srihari@LAPTOP-AJMTFS87:~/compiler_design/week4$ lex que1.c
srihari@LAPTOP-AJMTFS87:~/compiler_design/week4$ cc lex.yy.c -ll
srihari@LAPTOP-AJMTFS87:~/compiler_design/week4$ ./a.out
aaeeiiou
Valid aaeeiiou

abeihjokuzz
Valid abeihjokuzz

aiueo
Invalid
Invalid
Invalid
Invalid
Invalid
Invalid

^C
srihari@LAPTOP-AJMTFS87:~/compiler_design/week4$
```