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IT250 Lab Assignment

Q1) The Egg

CODE

```
%{
 #include<stdio.h>
 #include <stdbool.h>
 bool flg = false;
 int i=0;
 int arr[2];
%}

%%
[0-9]+ {arr[i++]=atoi(yytext);
         if (i>=2){
         if(!flg){
         if (arr[0]>arr[1]){
             printf("%d\n", arr[1]);
             printf("Thank you\n");
         }
         else{
             printf("%d\n", arr[1]);
             printf("Sorry\n");
         }
         }
         else {
           arr[1] = atoi(yytext);
           return 0;
         }
         i=0;
         fflush(stdin);
         return 0;
         }
     }

[\n\t ' '] {};
.* {
     flg = true;
     i++;
     if(i==2){
         printf("%s\nInvalid\n", yytext);
         exit(0);
       }
}
%%

int main(){
     yylex();
     if(flg) printf("%d\nInvalid\n",arr[1]);
     return 0;
}

int yywrap(void){
    return 1;
}
```

OUTPUT

```
student@HP-Elite600G9-08:~/Desktop/assgn$ lex 1.l
student@HP-Elite600G9-08:~/Desktop/assgn$ cc lex.yy.c
student@HP-Elite600G9-08:~/Desktop/assgn$ ./a.out
200
150
150
Thank you
student@HP-Elite600G9-08:~/Desktop/assgn$ ./a.out
350
350
350
Sorry
```

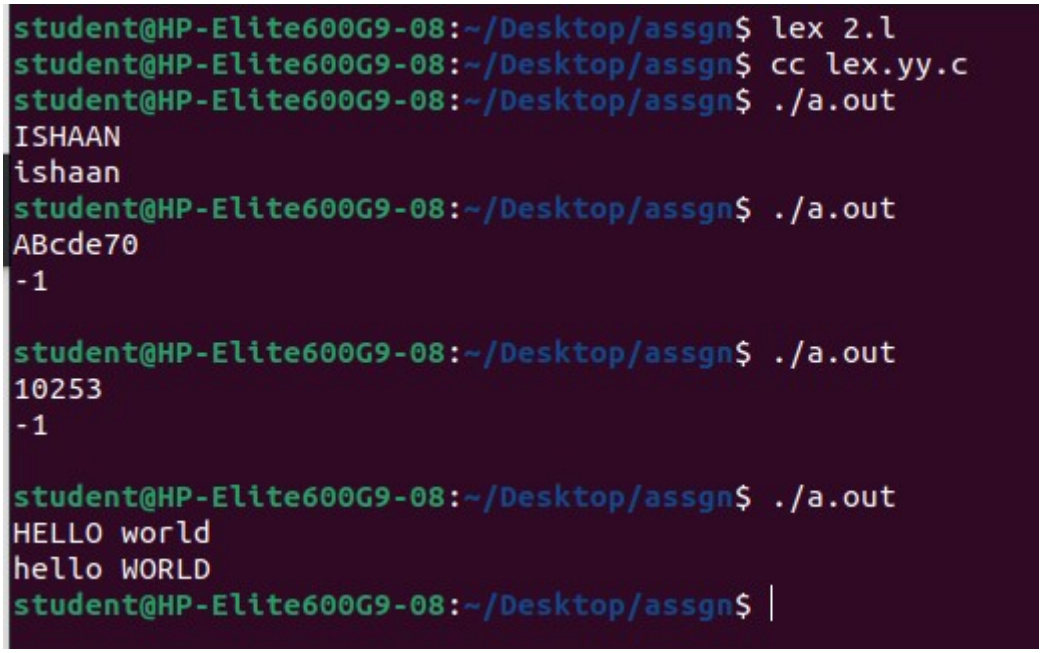
```
student@HP-Elite600G9-08:~/Desktop/assgn$ lex 1.l
student@HP-Elite600G9-08:~/Desktop/assgn$ cc lex.yy.c
student@HP-Elite600G9-08:~/Desktop/assgn$ ./a.out
50.05
25
25
Invalid
student@HP-Elite600G9-08:~/Desktop/assgn$ ./a.out
10000
10.0
10.0
Invalid
student@HP-Elite600G9-08:~/Desktop/assgn$ ./a.out
550
600
600
Sorry
student@HP-Elite600G9-08:~/Desktop/assgn$
```

Q2) String Toggle

CODE

```
%{
#include<stdio.h>
%}

%%

.*[0-9] {
   printf("-1\n");
   return 0;
}

[A-Z]       {printf("%c",yytext[0]+ 32);}
[a-z]       {printf("%c",yytext[0]- 32);}
[\t\n]       ECHO;
.            ECHO;
fflush(stdin);
return 0;
%%

int yywrap(void)
{
   return 1;
}

int main()
{
   char input[256];
   scanf("%255[^\n]",input);
   yy_scan_string(input);

   yylex();
   printf("\n");
   return 0;
}
```

OUTPUT


student@HP-Elite600G9-08:~/Desktop/assgn$ lex 2.l
student@HP-Elite600G9-08:~/Desktop/assgn$ cc lex.yy.c
student@HP-Elite600G9-08:~/Desktop/assgn$ ./a.out
ISHAAN
ishaan
student@HP-Elite600G9-08:~/Desktop/assgn$ ./a.out
ABcde70
-1
student@HP-Elite600G9-08:~/Desktop/assgn$ ./a.out
10253
-1
student@HP-Elite600G9-08:~/Desktop/assgn$ ./a.out
HELLO world
hello WORLD
student@HP-Elite600G9-08:~/Desktop/assgn$

Q3) Littlest & Biggest Group Reckoning

CODE

```
%{
#include <stdio.h>
#include <stdlib.h>
#include <ctype.h>
#include <math.h>
int arr[100000];
int size = 0;
int ctr = 0;
%}

%option noyywrap

%%

[ \t]+
[0-9]+              {arr[ctr++] = atoi(yytext); }
\n                  {break; }
.                   { printf("Invalid\n"); exit(1); }

%%

int main(){
    char charArray1[1024];
    fgets(charArray1, sizeof(charArray1), stdin);
    if (sscanf(charArray1, "%d", &size) != 1 || size <= 0 || size > 100000 ||
charArray1[strspn(charArray1, "0123456789 \t\n")] != '\0') {
        printf("Invalid\n");
        exit(1);
    }
    fgets(charArray1, sizeof(charArray1), stdin);
    yy_scan_string(charArray1);
    int i, mini = 10000000;
    int maxi=-1000000;
    for (i = 0; i < size; i++) {
        yylex();
        if (arr[i] < mini) {
            mini = arr[i];
        }
    }
    for(i=0;i<size;i++)
    {
        yylex();
        if(arr[i]>maxi)
        {
            maxi=arr[i];
        }
    }
    printf("\n");
    printf("%d ", mini);
    printf("%d\n",maxi);
    return 0;
}
```

OUTPUT

```
student@HP-Elite600G9-08:~/Desktop/assgn$ lex 3.l
student@HP-Elite600G9-08:~/Desktop/assgn$ cc lex.yy.c
student@HP-Elite600G9-08:~/Desktop/assgn$ ./a.out
5
6 2 9 4 10

2 10
student@HP-Elite600G9-08:~/Desktop/assgn$ ./a.out
8
8 13 29 31 54 40 37 1

1 54
student@HP-Elite600G9-08:~/Desktop/assgn$ ./a.out
0
Invalid
student@HP-Elite600G9-08:~/Desktop/assgn$ ./a.out
25.5
Invalid
student@HP-Elite600G9-08:~/Desktop/assgn$ ./a.out
3
-12 6 7
Invalid
student@HP-Elite600G9-08:~/Desktop/assgn$
```