NAME: VAIBHAV BANKA

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EXPERIMENT NUMBER: 7

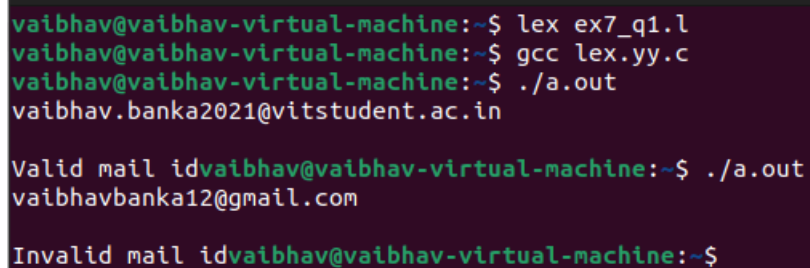**Q1. Lex program to check Valid Mail id.**

CODE

```
%{
%}
%%
[a-z]+[.][a-z]+[2][0][2][1][@][v][i][t][s][t][u][d][e][n][t][.][a][c][.][i][n] {
printf("\nValid mail id");
return 0;
}
. {printf("\nInvalid mail id");return 0;}
%%
int main(){
yylex();
return 0;
}
int yywrap(){}
```

OUTPUT

```
vaibhav@vaibhav-virtual-machine:~$ lex ex7_q1.l
vaibhav@vaibhav-virtual-machine:~$ gcc lex.yy.c
vaibhav@vaibhav-virtual-machine:~$ ./a.out
vaibhav.banka2021@vitstudent.ac.in

Valid mail idvaibhav@vaibhav-virtual-machine:~$ ./a.out
vaibhavbanka12@gmail.com

Invalid mail idvaibhav@vaibhav-virtual-machine:~$
```

Q2. Lex program to check Valid mobile number.

CODE

```
%{
%}
%%
```
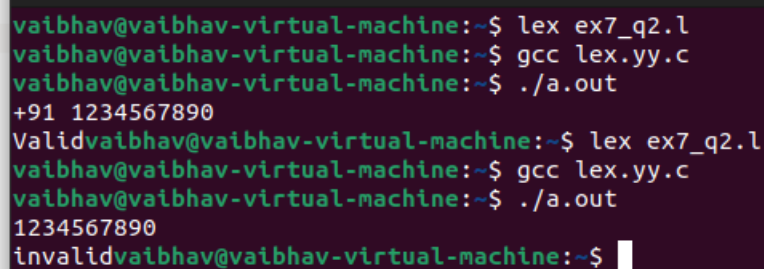
```
[+][0-9]{2}" "[0-9]{10} {printf("%s","Valid"); return 0;}

. {printf("%s","invalid"); return 0;}

%%

int main(){

    yylex();

    return 0;

}

int yywrap(){}
```

OUTPUT


```
vaibhav@vaibhav-virtual-machine:~$ lex ex7_q2.l
vaibhav@vaibhav-virtual-machine:~$ gcc lex.yy.c
vaibhav@vaibhav-virtual-machine:~$ ./a.out
+91 1234567890
Validvaibhav@vaibhav-virtual-machine:~$ lex ex7_q2.l
vaibhav@vaibhav-virtual-machine:~$ gcc lex.yy.c
vaibhav@vaibhav-virtual-machine:~$ ./a.out
1234567890
invalidvaibhav@vaibhav-virtual-machine:~$ 
```

Q3. Lex program to find factorial of a given number.

CODE

```
%{

   void fac(int x);

   int x;

%}

n [0-9]

%%

{n}+ {x=atoi(yytext);

     fac(x);

     return 0;}

%%

int main(){

   yylex();

   return 0;

}

void fac(int a){
```

```
    int f=1;

    while(a!=1){

        f=f*(a);

        (a)--;

    }

    printf("%d\n",f);

}

int yywrap(){}
```
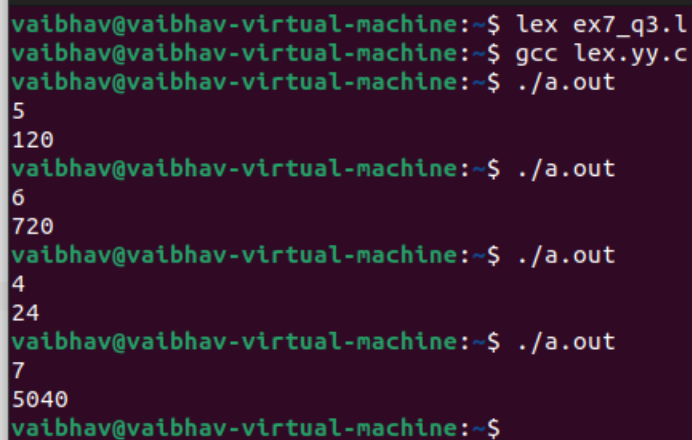
OUTPUT


```
vaibhav@vaibhav-virtual-machine:~$ lex ex7_q3.l
vaibhav@vaibhav-virtual-machine:~$ gcc lex.yy.c
vaibhav@vaibhav-virtual-machine:~$ ./a.out
5
120
vaibhav@vaibhav-virtual-machine:~$ ./a.out
6
720
vaibhav@vaibhav-virtual-machine:~$ ./a.out
4
24
vaibhav@vaibhav-virtual-machine:~$ ./a.out
7
5040
vaibhav@vaibhav-virtual-machine:~$
```

Q4. Yacc program for valid C identifier declaration statement.

CODE

LEX

```
%{

#include "y.tab.h"

%}

%%

int { return INT; }

[a-zA-Z][a-zA-Z0-9]* { return IDENTIFIER; }

, { return COMMA; }

; { return SEMICOLON; }

. ;

%%

int yywrap(void)
```

```
{
 return 1;
}
```

YACC

```
%{
#include <stdio.h>
#include <stdlib.h>
%}
%token INT IDENTIFIER COMMA SEMICOLON
%%
program: statement_list
 ;
statement_list: statement
 | statement_list statement
 ;
statement: INT identifier_list SEMICOLON {printf("Valid\n");}
 ;
identifier_list: IDENTIFIER
 | identifier_list COMMA IDENTIFIER
 ;
expression: IDENTIFIER
 | expression COMMA IDENTIFIER
 ;
%%
int main()
{
 printf("Enter the declaration statement:\n");
 yyparse();
 return 0;
```
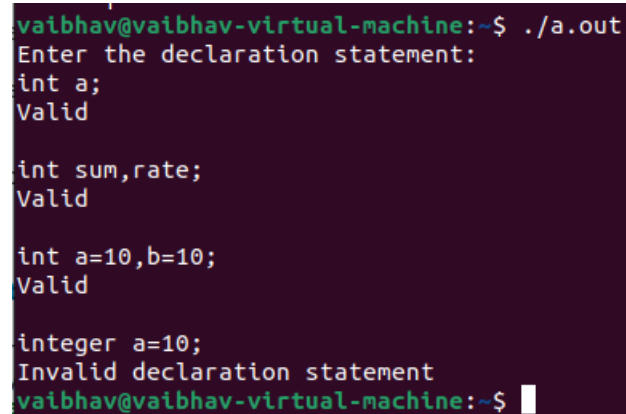
```
}
void yyerror(char *s)
{
 printf("Invalid declaration statement\n");
}
```

OUTPUT

Q5. Lex program to add line number to "sample.c" program.

CODE

```
%{
#include <stdio.h>
int l = 0;
%}
%%
[//][\t|a-zA-Z[0-9].*]*[\n] {fprintf(yyout, "%s", yytext);}
[\n] {l++; fprintf(yyout, "%d %s", l, yytext);}
. {yymore();}
%%
int yywrap(){}
int main(){
 yyin = fopen("sample.c", "r");
 yyout = fopen("output75.txt", "w");
 yylex();
 return 0;
}
```

OUTPUT

```
vaibhav@vaibhav-virtual-machine:~$ lex ex7_q5.l
vaibhav@vaibhav-virtual-machine:~$ gcc lex.yy.c
vaibhav@vaibhav-virtual-machine:~$ ./a.out
vaibhav@vaibhav-virtual-machine:~$ cat sample.c
//Sample C program
#include<stdio.h>
int main(){
  int sum,rate;
  int total;
  //21BCE1955
  int a=10,b=20;
  //Vaibhav Banka
  return 0;
}
vaibhav@vaibhav-virtual-machine:~$ cat output75.txt
//Sample C program
1 #include<stdio.h>
2 int main(){
3   int sum,rate;
4   int total;
  //21BCE1955
5   int a=10,b=20;
  //Vaibhav Banka
6   return 0;
7 }
vaibhav@vaibhav-virtual-machine:~$
```