```
01.11-2021
                       COMPILER DESIGN
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                                                 2019103573
                        OBSERVATION - 08
1. Write a yar program to implement arithmetic operation,
  °A Q
    # include x ctype h>
    # Include Lstdio. h>
     Pnt yylex ();
     void gyerror (const char *e);
  %3
  90 token NUBER
  % left '+' '- '
  7. left 'x' 1'
  % right UMINUS
  %0%
  lines: expr 'in'
  lines expr "In"
  terror ('n' & yyerror ('Enter again; "): yerror, 3
 expr: expr '+' term & $$ = $1+$3; printf ("%d\n", $6); }
 texpr '- 'term & $$ = $1-$33 print (-'nd\n', $4); 3
 1 term
 term; term '* fac & $$ =$ 1 * $ 3 : printf( = 7.d (n', $$); 3
 Itorm "/" fac & is s $ 1 / $3; print+ ( - t. d \n", $ s); }
 1 fac
 tac: '('expr')' 2 $ $ = $ 2 ; 3
 INUMBER
 ',
 % %
 yylex (18
   int c;
   C = getchar();
   If (isdigit(c))?
     yyval = c-'0';
   return NUBBER;
   rotumc;
```

```
void yyerror (char const *3) {
   fprinty (stderr, 1% s(n", s);
2,
 9nt main (void) ?
   do &
    Sypanse ();
   3 while (1);
   return o;
 2
 OUTPUT :-
14+52
66
2 * 3
6
9-2
16/2
8
Write a yarc program to implement logical operations,
CODE :-
0/05
 #include x ctype . hs
 # include 2 stdio. h>
 Post gylex();
  Void yyerror (const char *=);
% 3
% token DIGIT
% deft '2'11
% right 11
0/0%
lines: expr 'In'
lines: expr 'In'
lerror In Eyerror ( Enter again; "1; yyerror; 3
0xpr: expr's fac & dd = $1 &$3: print( 1 %din", $$); }
lexpr 11 fac & 36 = $1 1 $3; print ( 3, 21, 11, 3 $ ); 3
1'! expr 2 88 = ! $2; printf (~%.dun', 9$); 3
1 fac
5
```

```
lac; 'c' expr') 9 $$ = $2; 3
DIGIT
oh . 1.
yylex () $
  Prot c;
  e = getchar();
  14(18digi+(c)) ?
     441 val = c - 10';
     return DIGIT;
    return (;
3
Void yyerror (char conet *s) {
  ffprintf (stdorr, 1%s/n",s);
3
int main (void) ?
30 g
  Yypanse();
 Bunile(1);
 teturno;
3
OUTPUT :
021
0
181
010
0
110
0
60
```

```
3. To write a yace problem to check the eyntax of
   to expression.
   CODE 1-
   9. 2
    # Include & statio. h>
   # include < y. tab. h>
   % 3
   alpha [A-za-z]
  digit co-97
   % %
  [it in]
  for return FOR;
  ? digit 8+ return NUM;
   ? alpha & ( & alpha 31 & digit &)* return ID;
   " <= " return LE;
  ->=" return GE;
  f == " return EQ;
  il: " return NE;
  = 11" return or;
  128" return AND;
          return yytextto];
  0/0%
  %5
   #include 25tdio.h>
   # Proclude & stallib. h>
  % 3
  Stekan ID NUM for LE GEEQ NEOR AND
  $ right = _ "
  $ left OR AND
  $ left '>' '<' LE GE FQNE
  # left 1111-1
  $ left 'x' \1'
  # right UMINUS
  & left '!'
```

```
3: 37 & print (- input accepted (n'); exit(0); 3
   ST : FOR 'C' E' "EZ"; E 'C' DEF;
   OEF : 12' BODY 19'
1.E . ; '
135
1
 2
E: 10'-'E
1E '+' E
1 E '-' E
IE X E
te "YE
1E ' < ' E
1E '>' E
IE LE E
IE CF E
IE EQ E
IENE E
IE OR E
IE NO E
1 E '+' \+ 1
1E1-11-1
1 ID
MUMI
EQ : E X'E
IE : E > E
IE LE E
IE CE E
IE EQ E
```

0/0%

IE NE E

IE OR E

1.1.

```
print ( Enter the expression: 14);

yypanse ();

3

Ent yywrap () 2 3

void yyerror() 2

Print ( 1 \n Invalid syntax \n \n');

3

OUTPUT:

Enter the expression:

for ( i = 0; i \lo; i++)

Input accepted
```