Test Cases and Output

testcase1 - Notepad

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```
// Program to check test case 1

int main()
{
    string s = "%dhellow";
    float a = #;
    b = -4.12;
    c = 0.0625;
    recursion();
}

int recursion()
{
    recursion();
}

{
    string s = "This is empty block";
    int a,b;
    a = a + b / c;
    if(a>b)
    {
        while(c>d)
        s = "Hey";
        a = a+1;
    }
}
```

```
  LINE             LEXEME            TOKEN NAME
--------------------------------------------------

    3                 int             KEYWORD_INT
    3                main              IDENTIFIER
    3                   (       PARENTHESES_OPEN
    3                   )     PARENTHESES_CLOSED
    4                   {             CURLY_OPEN
    5              string          KEYWORD_STRING
    5                   s              IDENTIFIER
    5                   =                ASSIGNOP
    5           "%dhellow"                     STR
    5                   ;               SEMICOLON
    6               float           KEYWORD_FLOAT
    6                   a              IDENTIFIER
    6                   =                ASSIGNOP

Line No.6: Unknown Symbol: Lexical Error '#'.
    6                   ;               SEMICOLON
    7                   b              IDENTIFIER
    7                   =                ASSIGNOP
    7                   -                     SUB
    7                4.12                   FLOAT
    7                   ;               SEMICOLON
    8                   c              IDENTIFIER
    8                   =                ASSIGNOP
    8              0.0625                   FLOAT
    8                   ;               SEMICOLON
    9           recursion              IDENTIFIER
    9                   (       PARENTHESES_OPEN
    9                   )     PARENTHESES_CLOSED
    9                   ;               SEMICOLON
   10                   }           CURLY_CLOSED
   12                 int             KEYWORD_INT
   12           recursion              IDENTIFIER
   12                   (       PARENTHESES_OPEN
   12                   )     PARENTHESES_CLOSED
   13                   {             CURLY_OPEN
   14           recursion              IDENTIFIER
   14                   (       PARENTHESES_OPEN
   14                   )     PARENTHESES_CLOSED
   14                   ;               SEMICOLON
   15                   }           CURLY_CLOSED
```

```
17                    {              CURLY_OPEN
18                string          KEYWORD_STRING
18                    s              IDENTIFIER
18                    =                ASSIGNOP
18"This is empty block"                     STR
18                    ;               SEMICOLON
19                  int             KEYWORD_INT
19                    a              IDENTIFIER
19                    ,                   COMMA
19                    b              IDENTIFIER
19                    ;               SEMICOLON
20                    a              IDENTIFIER
20                    =                ASSIGNOP
20                    a              IDENTIFIER
20                    +                     ADD
20                    b              IDENTIFIER
20                    /                     DIV
20                    c              IDENTIFIER
20                    ;               SEMICOLON
21                   if              KEYWORD_IF
21                    (        PARENTHESES_OPEN
21                    a              IDENTIFIER
21                    >                      GT
21                    b              IDENTIFIER
21                    )      PARENTHESES_CLOSED
22                    {              CURLY_OPEN
23                while           KEYOWRD_WHILE
23                    (        PARENTHESES_OPEN
23                    c              IDENTIFIER
23                    >                      GT
23                    d              IDENTIFIER
23                    )      PARENTHESES_CLOSED
24                    s              IDENTIFIER
24                    =                ASSIGNOP
24                "Hey"                       STR
24                    ;               SEMICOLON
25                    a              IDENTIFIER
25                    =                ASSIGNOP
25                    a              IDENTIFIER
25                    +                     ADD
25                    1                 INT_NUM
25                    ;               SEMICOLON
26                    }            CURLY_CLOSED
27                    }            CURLY_CLOSED
```

testcase2 - Notepad

File Edit Format View Help

```
//A program to compute factorials */
` Hey
How r u `

int fact( int n)
if (n <= 1)
return 1;
else
return n*fact(n-1);

void main(void)
int x;
x = 1;
while (x <= 10)
write(x);
write(fact(x));
writeln();
x = x + 1;
```

LINE	LEXEME	TOKEN NAME
5	int	KEYWORD_INT
5	fact	IDENTIFIER
5	(	PARENTHESES_OPEN
5	int	KEYWORD_INT
5	n	IDENTIFIER
5	)	PARENTHESES_CLOSED
6	if	KEYWORD_IF
6	(	PARENTHESES_OPEN
6	n	IDENTIFIER
6	<=	LE
6	1	INT_NUM
6	)	PARENTHESES_CLOSED
7	return	KEYWORD_RETURN
7	1	INT_NUM
7	;	SEMICOLON
8	else	KEYWORD_ELSE
9	return	KEYWORD_RETURN
9	n	IDENTIFIER
9	*	MUL
9	fact	IDENTIFIER
9	(	PARENTHESES_OPEN
9	n	IDENTIFIER
9	-	SUB
9	1	INT_NUM
9	)	PARENTHESES_CLOSED
9	;	SEMICOLON
11	void	IDENTIFIER
11	main	IDENTIFIER
11	(	PARENTHESES_OPEN
11	void	IDENTIFIER
11	)	PARENTHESES_CLOSED
12	int	KEYWORD_INT
12	x	IDENTIFIER
12	;	SEMICOLON
13	x	IDENTIFIER
13	=	ASSIGNOP
13	1	INT_NUM
13	;	SEMICOLON
14	while	KEYOWRD_WHILE
14	(	PARENTHESES_OPEN
14	x	IDENTIFIER

```
14              while          KEYOWRD_WHILE
14                  (        PARENTHESES_OPEN
14                  x              IDENTIFIER
14                 <=                      LE
14                 10                INT_NUM
14                  )     PARENTHESES_CLOSED
15              write              IDENTIFIER
15                  (        PARENTHESES_OPEN
15                  x              IDENTIFIER
15                  )     PARENTHESES_CLOSED
15                  ;               SEMICOLON
16              write              IDENTIFIER
16                  (        PARENTHESES_OPEN
16               fact              IDENTIFIER
16                  (        PARENTHESES_OPEN
16                  x              IDENTIFIER
16                  )     PARENTHESES_CLOSED
16                  )     PARENTHESES_CLOSED
16                  ;               SEMICOLON
17            writeln              IDENTIFIER
17                  (        PARENTHESES_OPEN
17                  )     PARENTHESES_CLOSED
17                  ;               SEMICOLON
18                  x              IDENTIFIER
18                  =                ASSIGNOP
18                  x              IDENTIFIER
18                  +                    ADD
18                  1                INT_NUM
18                  ;               SEMICOLON
```

testcase3 - Notepad

File Edit Format View Help

```
//
func(int a)
return a <= b;

int main()
{
    int $0.14 a = [2, %3];
    real b =$ 3.52;
    STRING string                    variable = a + b - "a ^ b";
    print(a, b, variable);
}
`hellllllllllllo
sdajnsd
dsanjdsajsna
sdjsdajsda`

int c = 2.4-.55
int b = a--3.4
real ps = -.61 + .79
```

```
   LINE             LEXEME             TOKEN NAME
-------------------------------------------------------

     2                 func              IDENTIFIER
     2                    (        PARENTHESES_OPEN
     2                  int             KEYWORD_INT
     2                    a              IDENTIFIER
     2                    )      PARENTHESES_CLOSED
     3               return          KEYWORD_RETURN
     3                    a              IDENTIFIER
     3                   <=                      LE
     3                    b              IDENTIFIER
     3                    ;               SEMICOLON
     5                  int             KEYWORD_INT
     5                 main              IDENTIFIER
     5                    (        PARENTHESES_OPEN
     5                    )      PARENTHESES_CLOSED
     6                    {              CURLY_OPEN
     7                  int             KEYWORD_INT

Line No.7: Unknown Symbol: Lexical Error '$'.
     7                 0.14                   FLOAT
     7                    a              IDENTIFIER
     7                    =                ASSIGNOP
     7                    [            SQUARE_OPEN
     7                    2                INT_NUM
     7                    ,                  COMMA
     7                    %                    MOD
     7                    3                INT_NUM
     7                    ]          SQUARE_CLOSED
     7                    ;              SEMICOLON
     8                 real              IDENTIFIER
     8                    b              IDENTIFIER
     8                    =                ASSIGNOP

Line No.8: Unknown Symbol: Lexical Error '$'.
     8                 3.52                   FLOAT
     8                    ;              SEMICOLON
     9               STRING              IDENTIFIER
     9               string         KEYWORD_STRING
     9             variable              IDENTIFIER
     9                    =                ASSIGNOP
```

```
 9              STRING            IDENTIFIER
 9              string         KEYWORD_STRING
 9            variable            IDENTIFIER
 9                   =              ASSIGNOP
 9                   a            IDENTIFIER
 9                   +                   ADD
 9                   b            IDENTIFIER
 9                   -                   SUB
 9             "a ^ b"                   STR
 9                   ;             SEMICOLON
10               print            IDENTIFIER
10                   (      PARENTHESES_OPEN
10                   a            IDENTIFIER
10                   ,                 COMMA
10                   b            IDENTIFIER
10                   ,                 COMMA
10            variable            IDENTIFIER
10                   )    PARENTHESES_CLOSED
10                   ;             SEMICOLON
11                   }          CURLY_CLOSED
17                 int          KEYWORD_INT
17                   c            IDENTIFIER
17                   =              ASSIGNOP
17                 2.4                 FLOAT
17                   -                   SUB
17                .55                 FLOAT
18                 int          KEYWORD_INT
18                   b            IDENTIFIER
18                   =              ASSIGNOP
18                   a            IDENTIFIER
18                   -                   SUB
18                   -                   SUB
18                 3.4                 FLOAT
19                real            IDENTIFIER
19                  ps            IDENTIFIER
19                   =              ASSIGNOP
19                   -                   SUB
19                .61                 FLOAT
19                   +                   ADD
19                .79                 FLOAT
```

testcase4 - Notepad

File Edit Format View Help

```
String s = "abc";

        `hello
         my name is
         cddcjdcjncdnjndcs`

        //also ensure that your lexer ignores comments and white spaces properly
        a = a          + 20;
        a = abc +cde ;



        a = w1+200.23;

        //ID PLUS RNUM SEMICOLON
        string s;
        s = "number";
        a = "#$%$number";
        b = "#$number\n";
```

```
C:\Users\asus\Desktop\Compiler>a testcase4.txt
   LINE              LEXEME              TOKEN NAME
-------------------------------------------------------

     1                String              IDENTIFIER
     1                     s              IDENTIFIER
     1                     =                ASSIGNOP
     1                 "abc"                     STR
     1                     ;               SEMICOLON
     8                     a              IDENTIFIER
     8                     =                ASSIGNOP
     8                     a              IDENTIFIER
     8                     +                     ADD
     8                    20                 INT_NUM
     8                     ;               SEMICOLON
     9                     a              IDENTIFIER
     9                     =                ASSIGNOP
     9                   abc              IDENTIFIER
     9                     +                     ADD
     9                   cde              IDENTIFIER
     9                     ;               SEMICOLON
    13                     a              IDENTIFIER
    13                     =                ASSIGNOP
    13                    w1              IDENTIFIER
    13                     +                     ADD
    13                200.23                   FLOAT
    13                     ;               SEMICOLON
    16                string         KEYWORD_STRING
    16                     s              IDENTIFIER
    16                     ;               SEMICOLON
    17                     s              IDENTIFIER
    17                     =                ASSIGNOP
    17              "number"                     STR
    17                     ;               SEMICOLON
    18                     a              IDENTIFIER
    18                     =                ASSIGNOP
    18         "#$%$number"                     STR
    18                     ;               SEMICOLON
    19                     b              IDENTIFIER
    19                     =                ASSIGNOP

Line No.19: Lexical Error: String contains invalid character
    19                     ;               SEMICOLON
```

testcase5 - Notepad

File Edit Format View Help

```
int n1, n2;

        n1 = 30;
        n2 = 40;

    while(n1!=n2)
    {
        if(n1 > n2)
            n1 -= n2;
        else
            n2 -= n1;
    }
    gcd = n1;
```

Command Prompt

```
C:\Users\asus\Desktop\Compiler>a testcase5.txt
   LINE              LEXEME              TOKEN NAME
-----------------------------------------------------

     1                 int              KEYWORD_INT
     1                  n1               IDENTIFIER
     1                   ,                    COMMA
     1                  n2               IDENTIFIER
     1                   ;               SEMICOLON
     3                  n1               IDENTIFIER
     3                   =                 ASSIGNOP
     3                  30                  INT_NUM
     3                   ;               SEMICOLON
     4                  n2               IDENTIFIER
     4                   =                 ASSIGNOP
     4                  40                  INT_NUM
     4                   ;               SEMICOLON
     6               while             KEYOWRD_WHILE
     6                   (          PARENTHESES_OPEN
     6                  n1               IDENTIFIER
     6                  !=                       NE
     6                  n2               IDENTIFIER
     6                   )        PARENTHESES_CLOSED
     7                   {               CURLY_OPEN
     8                  if                KEYWORD_IF
     8                   (          PARENTHESES_OPEN
     8                  n1               IDENTIFIER
     8                   >                       GT
     8                  n2               IDENTIFIER
     8                   )        PARENTHESES_CLOSED
     9                  n1               IDENTIFIER
     9                   -                      SUB
     9                   =                 ASSIGNOP
     9                  n2               IDENTIFIER
     9                   ;               SEMICOLON
    10                else             KEYWORD_ELSE
    11                  n2               IDENTIFIER
    11                   -                      SUB
    11                   =                 ASSIGNOP
    11                  n1               IDENTIFIER
    11                   ;               SEMICOLON
    12                   }              CURLY_CLOSED
    13                 gcd               IDENTIFIER
    13                   =                 ASSIGNOP
    13                  n1               IDENTIFIER
    13                   ;               SEMICOLON
```