

VASAVI COLLEGE OF ENGINEERING

(AUTONOMOUS)

(Affiliated to Osmania University)

Hyderabad-500031

DEPARTMENT OF : CSE

NAME OF THE LABORATORY: CC LAB

Name: K.S.I. SIVANI HT No.: 1602-21-733-052 Page No.: _____

EXPERIMENT-1 : Implement Scanner Programs using C.

1) Comments:

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

int main()
{
    char s[100];
    int flag = 0, j, i;
    scanf("%s", s);
    for(i = 0; s[i] != '\0'; i++)
    {
        if(s[i] == '/')
        {
            if(s[i+1] == '/')
            {
                printf("Single line comment\n");
                flag = 1; break;
            }
            else if(s[i+1] == '*')
            {
                for(j = i+2; s[j] != '*' & j++);
                if(s[j+1] == '/')
                {
                    printf("Multi line comment\n");
                    flag = 1; break;
                }
            }
        }
    }
    if(flag == 0)
        printf("Not a comment\n");
}
```

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```
{ printf("Multi line comment\n");  
  flag = 1; break; }  
}
```

```
}  
if(flag == 0)  
{ printf("No comments\n"); }  
  
return 0;  
}
```

* OUTPUT:

→ /* abcd */

Multi line comment

→ abcdef

No comments.

→ abc // ab

Single line comment.

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2) Identifiers:

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

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

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

```
int main()
```

```
{ char s[100];
```

```
scanf("%s", s);
```

```
int i, flag = 0;
```

```
if ('a' <= s[0] && s[0] <= 'z' ||
```

```
'A' <= s[0] && s[0] <= 'Z' || s[0] == '_')
```

```
{ for(i = 1; s[i] != '\0'; i++)
```

```
{ if ('a' <= s[i] && s[i] <= 'z' ||
```

```
'A' <= s[i] && s[i] <= 'Z' ||
```

```
'_' <= s[i] && s[i] <= '9' || s[i] == '_')
```

```
{ flag = 1; }
```

```
else { flag = 0; break; } }
```

```
}
```

```
if (flag == 0) { printf("Invalid Identifier\n"); }
```

```
else { printf("Valid Identifier\n"); }
```


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```
return 0; }
```

OUTPUT:

→ aabcdef

Valid Identifier

→ abcdef.

Valid Identifier

→ 123rth

Invalid Identifier.

3) Keywords:

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

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

```
int main ( )
```

```
{ char input[50];
```

```
    char *keywords[] = {"auto", "break", "case",
```

```
    "char", "const", "default",
```

```
    "continue", "double", "else",
```

```
    "float", "for", "goto", "if",
```

```
    "int", "long", "return". };
```

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```
int num_keywords = sizeof(keywords)/sizeof(keywords[0]);
int i;
printf("Enter a string: "); scanf("%s", input);
int is_keyword = 0;
for(i=0; i<num_keywords; i++)
{ if(strcmp(input, keywords[i]) == 0)
  { is_keyword = 1; break; }
}
if(is_keyword) { printf("%s is a keyword\n", input); }
else { printf("%s is not a keyword\n", input); }

return 0; }
```

* Output:

→ Enter a string: int
int is a keyword.

→ Enter a string: abc
abc is not a keyword.

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4) Floating Number:

```
#include <stdio.h>
#include <stdbool.h>
#include <ctype.h>
bool isFloatingPoint(const char *str)
{
    int dotCount = 0;
    if (str[i] == '+' || str[i] == '-')
        i++;
    if (str[i] == '.')
    {
        dotCount++;
        i++;
        while (isdigit(str[i]))
            i++;
    }
    return (str[i] == '\0' && dotCount == 1 && i > 0);
}
```

```
int main()
```

```
{
    char input[50];
    printf("Enter a number:");
    scanf("%s", input);
    if (isFloatingPoint(input))
    }
```


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```
{ printf("%s is a floating-point number\n",  
input);  
  
else  
{ printf("%s is not a floating-point number\n",  
input); }  
  
return 0;  
}
```

* OUTPUT:

→ Enter a number: 5.2.

5.2 is a floating-point number.

→ Enter a number: 7

7 is not a floating point number.