Bangladesh Army International University of Science and Technology

Department of Computer Science and Engineering

Lab Report

Lab Report No	:	1						
Lab Report Name	:	Write a Program to Test Whether an Identifier is Valid or Not.						
Course Title	:	Compiler Design and Construction Sessional						
Course Code	:	CSE-414						
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Level	:	4	**Term**	: 1	**Section**	: B	**Group**	:
Date of Submission	:	08/01/26	**Semester**	: FALL 25	**Year**	: 2026		

Key Learnings:

- Understand the rules for valid identifiers in programming languages like C (e.g., starts with letter or underscore, followed by letters, digits, or underscores; not a keyword).
- Learn to implement string validation logic using character checks.

Code Implementation:

Lab Works > lab1.c > ...

```c
#include <stdio.h>
#include <string.h>
#include <ctype.h>

char keywords[32][10] ={
    "auto","break","case","char","const","continue","default","do",
    "double","else","enum","extern","float","for","goto","if","int",
    "long","register","return","short","signed","sizeof","static",
    "struct","switch","typedef","union","unsigned","void","volatile","while"
};

int isKeyword(char *str){
    for(int i = 0; i < 32; i++){
        if (strcmp(str, keywords[i]) == 0)
            return 1;
    }
    return 0;
}

int isValidIdentifier(char *str){
    if(!(isalpha(str[0]) || str[0] == '_'))
        return 0;

    for(int i = 1; str[i] != '\0'; i++){
        if(!(isalnum(str[i]) || str[i] == '_')){
            return 0;
        }
```

```c
int isValidIdentifier(char *str){

    for(int i = 1; str[i] != '\0'; i++){
        if(!(isalnum(str[i]) || str[i] == '_')){
            return 0;
        }

    }

    if(isKeyword(str))
        return 0;

    return 1;
}

int main() {
    char identifier[50];

    printf("Enter an identifier: ");
    scanf("%s", identifier);

    if(isValidIdentifier(identifier))
        printf("'%s' is a VALID identifier.\n", identifier);
    else
        printf("'%s' is an INVALID identifier.\n", identifier);

    return 0;
}
```

Input Sample:
Enter an identifier: sum_1

Output Sample:

```
joha546@joha546:~/Projects/Compiler-Design-and-Construction/Lab Works$ ./lab1
Enter an identifier: sum_1
'sum_1' is a VALID identifier.
```