Practical File

Of

Course Code: CSEG1041
School of Computer Science

Submitted By: Submitted To:
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Course:B.Sc(Computer Science)
Batch:2025-28
Academic Year: 2025-26

```c
/*
5.1. Declare a global variable outside all functions and use it
inside various functions
to understand its accessibility.
*/

#include <stdio.h>

int globalVar = 10; // Global variable declaration

void showValue() {
    printf("showValue(): globalVar = %d\n", globalVar);
}

void modifyValue() {
    globalVar += 5;
    printf("modifyValue(): globalVar changed to %d\n", globalVar);
}

void resetValue() {
    globalVar = 0;
    printf("resetValue(): globalVar reset to %d\n", globalVar);
}

int main() {
    printf("Name: DYUTI SHARMA\n");
    printf("SAP ID: 590021983\n\n");

    printf("----- Experiment 5.1: Global Variable -----\n");

    printf("Initial globalVar = %d\n", globalVar);
    showValue();
    modifyValue();
    showValue();
    resetValue();
    showValue();

    return 0;
}
```

OUTPUT:

```
Name: DYUTI SHARMA
SAP ID: 590021983

----- Experiment 5.1: Global Variable -----
Initial globalVar = 10
showValue(): globalVar = 10
modifyValue(): globalVar changed to 15
showValue(): globalVar = 15
resetValue(): globalVar reset to 0
showValue(): globalVar = 0
Program ended with exit code: 0
```

```c
/*
5.2. Declare a local variable inside a function and try to access
it outside the function.
Compare this with accessing the global variable from within the
function.
*/

#include <stdio.h>

int globalVar = 50; // Global variable

void display() {
    int localVar = 100; // Local variable
    printf("My_Variable display(): localVar = %d\n", localVar);
    printf("My_Variable display(): globalVar = %d\n", globalVar);
}


int main() {
    printf("Name: DYUTI SHARMA\n");
    printf("SAP ID: 590021983\n\n");

    printf("----- Experiment 5.2: Local vs Global Variable -----
\n");
    display();

    printf("Inside main(): globalVar = %d\n", globalVar);
    return 0;
}
```

`OUTPUT:`

```
Name: DYUTI SHARMA
SAP ID: 590021983

----- Experiment 5.2: Local vs Global Variable -----
My_Variable display(): localVar = 100
My_Variable display(): globalVar = 50
Inside main(): globalVar = 50
Program ended with exit code: 0
```

```c
/*
5.3. Declare variables within different code blocks (enclosed by
curly braces)
and test their accessibility within and outside those blocks.
*/

#include <stdio.h>

int main() {
    printf("Name: DYUTI SHARMA\n");
    printf("SAP ID: 590021983\n\n");

    printf("----- Experiment 5.3: Block Scope -----\n");

    int a = 10;
    {
        int b = 20;
        printf("Inside block: a = %d, b = %d\n", a, b);
    }

    printf("Outside block: a = %d\n", a);

    return 0;
}
```

OUTPUT:

```
Name: DYUTI SHARMA
SAP ID: 590021983

----- Experiment 5.3: Block Scope -----
Inside block: a = 10, b = 20
Outside block: a = 10
Program ended with exit code: 0
```

```c
/*
5.4. Declare a static local variable inside a function.
Observe how its value persists across function calls.
*/

#include <stdio.h>

void counter() {
    static int count = 0; // Static local variable
    count++;
    printf("Count = %d\n", count);
}

int main() {
    printf("Name: DYUTI SHARMA\n");
    printf("SAP ID: 590021983\n\n");

    printf("----- Experiment 5.4: Static Local Variable -----\n");
    counter();
    counter();
    counter();
    return 0;
}
```

OUTPUT:

```
Name: DYUTI SHARMA
SAP ID: 590021983

----- Experiment 5.4: Static Local Variable -----
Count = 1
Count = 2
Count = 3
Program ended with exit code: 0
```