

C-Programming Lab Sheet
I Year / I Part
Faculty: Computer/Electrical

Labsheet#E1.2

Objectives:

- To familiarized with Character I/O, String I/O, Format Specification (Flag, Width Specifier, Precision Specifier, Conversion Characters), Formatted I/O, Limitations of scanf(), Search Set.

1. Get input of two float numbers into variables x & y, receive mathematical operator (+, -, *, /) using unformatted I/O into the variable ch1 and perform operation on x & y and display the result.
2. Demonstrate the differences among getch(), getche(), getchar(). Also demonstrate the difference between scanf() & gets(), printf() & puts().
3. **Printing Integer Numbers** - Write an output in tabular form of following program & discuss why you saw such output:

```
void main( ){
    int a = 12345;
    clrscr();
    printf("\n%d", a);
    printf("\ni", a);
    printf("\n%15d", a);
    printf("\n%-15d", a);
    printf("\n%015d", a);
    printf("\n%+15d", a);
    printf("\n%3d", a);
    getch();
}
```

4. **Printing Real Numbers** - Write an output in tabular form of following program & discuss why you saw such output:

```
void main( ){
    float n = 123.9876;
    clrscr();
    printf("\nf", n);
    printf("\ne", n);
    printf("\ng", n);
    printf("\n%15.4f", n);
    printf("\n%-15.3f", n);
    printf("\n%015.5e", n);
    printf("\n%.8f", n);
    printf("\n%2.2f", n);
    getch();
}
```

- 5. Printing Characters** - Write an output in tabular form of following program & discuss why you saw such output:

```
void main( ){
    char ch = 'a';
    clrscr();
    printf("\n%c", ch);
    printf("\n%10c", ch);
    printf("\n%-10c", ch);
    getch();
}
```

- 6. Printing Strings** - Write an output in tabular form of following program & discuss why you saw such output:

```
void main( ){
    char str[20] = "I Love Nepal";
    clrscr();
    printf("\n%s", str);
    printf("\n%18s", str);
    printf("\n%-18s", str);
    printf("\n%18.8s", str);
    printf("\n%-18.9s", str);
    printf("\n%5s", str);
    printf("\n%.10s", str);
    getch();
}
```

- 7. Printing Mixed Data** - Discuss why you saw such output:

```
void main( ){
    int n = 12345;
    float m = 123.9876;
    char ch = 'a';
    char str[20] = "I Love Nepal";
    clrscr();
    printf("n=%7d m=%12.5f ch=%-2c str=%16s", n, m, ch, str);
    getch();
}
```

- 8. Reading Integer Numbers** – Test input numbers of various digits & discuss why you saw such output:

```
void main( ){
    int a, b, c;
    clrscr();
    printf("Enter an integer number:");
    scanf("%d", &a);
    printf("The read & stored value of a is %d.\n", a);
    printf("Enter another integer 5-digit number:");
    scanf("%3d", &b);
}
```

```
printf("The read & stored value of b is %d.\n", b);
scanf("%d", &c);
printf("The read & stored value of c is %d.\n", c);
getch();
}
```

- 9. Reading Strings using %wc Format Specification** – Test long strings & discuss why you saw such output:

```
void main( ){
    char str[50];
    clrscr();
    printf("Enter a String: ");
    scanf("%10c", str);
    printf("Read string is : %s\n", str);
    getch();
}
```

- 10. Defining Search Set to Read Strings** – Test variants of possible input strings & discuss why you saw such output:

```
void main( ){
    char str[50];
    clrscr();
    printf("How old are you: ");
    scanf("%[a-z0-9]", str);
    printf("Read string is : %s\n", str);
    getch();
}
```

- 11. Defining Search Set to Read Strings** – Test strings containing a letter M & discuss it's output:

```
void main( ){
    char str[50];
    clrscr();
    printf("Enter a string: ");
    scanf("%[^M]", str);
    printf("Read string is : %s\n", str);
    getch();
}
```