Input, Output

#Lab Report 01

1. Write a C program to take input of three numbers and find their summation, subtraction, multiplication, and division.
2. Write a C program to enter the length and breadth of a rectangle and find its area.
3. Write a C program to find the area of a circle by taking user input.
4. Write a C program to enter length in centimeter and convert it into meter and kilometer.
5. Write a C program to enter temperature in Celsius and convert it into Fahrenheit. (and vice versa)

#Practice Problems

1. C program to find the size of int, char,float and double data types

Hint:	Output:
printf("Size of int is: %ld", sizeof(integerType)); printf("\nSize of char is: %ld", sizeof(charType)); printf("\nSize of float is: %ld", sizeof(floatType)); printf("\nSize of double is: %ld", sizeof(doubleType));	Size of int is: 4 Size of char is: 1 Size of float is: 4 Size of double is: 8

2. C program to swap two variables

Hint:	Output:

int temp = x;
x = y;
y = temp;
	x = 5
	y = 6
	After Swapping: x = 6, y = 5

3. C program to find power of any number

Hint:	Output:
power = pow(base, expo); printf("%.2lf ^ %.2lf = %.2lf", base, expo, power);	Enter base: 5 Enter exponent: 2 5.00 ^ 2.00 = 25.00

4. Write a C program to convert days into years, weeks and days.

Hint:	Output:

scanf("%d", &days);
years = (days / 365); // Ignoring leap year
weeks = (days % 365) / 7;
days = days - ((years * 365) + (weeks * 7));
	Enter days: 400
	YEARS: 1
	WEEKS: 5
	DAYS: 0

5. Program to swap first and last digit of a number

Hint:	Output:

lastDigit = num % 10;
digits = (int)log10(num);
firstDigit = (int)(num / pow(10, digits));
swappedNum = lastDigit;
swappedNum *= (int) pow(10, digits);
swappedNum += num % ((int) pow(10, digits));
swappedNum -= lastDigit;
swappedNum += firstDigit;printf("Number after swapping first and last digit: %d", swappedNum);
	Enter any number: 1234
	Original number = 1234
	Number after swapping first and last digit: 4231

6.

Operator precedence

#increment, decrement

Code	output	code	output

1.
#include <stdio.h>
int main()
{
int result, a = 5;
printf("%d\n",result);
result = a + ++a + a++;
printf("%d\n",result);
//17 (expected output)
return 0;
}
	0
	18
		2.
		#include <stdio.h>
		int main()
		{
		int a = 5, b = 3, c=2;
		printf("%d\n",a++);
		printf("%d\n",a);
		return 0;
		}
			5
			6

3.
#include <stdio.h>
int main()
{
int x=2,n=2;
x= n++;
printf("%d\n",x);
x=++n;
printf("%d\n",x);
printf("%d\n",n);
return 0;
}
	2
	4
	4
		4.
		#include <stdio.h>
		int main()
		{
		int x=2, y = 3;
		printf("%d\n",x);
		x*=y;
		printf("%d\n",x);
		x=x*y;
		printf("%d\n",x);
		x*=y+1;
		printf("%d",x);
		return 0;
		}
			2
			6
			18
			72

5.
#include <stdio.h>
int main()
{
int x = 1;
if(x--)
{
printf("Hello");
	Hello	6.
		#include <stdio.h>
		int main()
		{
		int x =3;
		if(--x)
		printf("%d",x);
		if(--x)
			21-1-1

}
if(x++)
{
printf("Evewryone");
}
return 0;
}
		printf("%d",x);
		if(--x)
		printf("%d",x);
		else if(x--)
		printf("%d",x);
		else
		printf("%d",x);
		printf("%d",x);
		return 0;
		}	

7.
#include <stdio.h>
int main()
{
int x = 2;
if(x--)
printf("1");
if(x--)
printf("2");
if(x--)
printf("3");
else
printf("None");
printf("-1");
return 0;
}
	12None-1	8.
		#include <stdio.h>
		int main()
		{
		int x = 2;
		if(x--)
		printf("1");
		else if(x--)
		printf("2");
		else if(x--)
		printf("3");
		else
		printf("Name");
		printf("%d",x);
		return 0;
		}
			11

If else, switch, ternary

#Lab Report 02

1. Write a C program to take input of three numbers and find the largest and smallest number among them
2. Write a C program to take input of a number and the number is positive, negative, or zero and the number is odd or even.
3. Write a C program to take input of a character and identify the input symbol is alphabet or digit or other symbol
4. Write a C program to take input of a character and identify the character is vowel or consonant.
5. Write a C program to input any alphabet and check whether it is in between ‘k’ to ‘o’.’
6. Write a C program to check whether a character is uppercase or lowercase alphabet.
7. Write a C program to input angles of a triangle and check whether triangle is valid or not.

8. Write a C program to input marks of five subjects Physics, Chemistry, Biology, Mathematics and Computer. Calculate percentage and grade according to following:

Percentage >= 90%: Grade A
Percentage >= 80%: Grade B
Percentage >= 70%: Grade C
Percentage >= 60%: Grade D
Percentage >= 40%: Grade E
Percentage < 40%: Grade F

#Lab Report 03

1. Write a C program to check whether an alphabet is vowel or consonant using switch case
2. Write a C program to check whether an alphabet is a vowel or consonant using the ternary operator
3. Write a C program to print the day of the week name using a switch case.
4. Write a C program to print the total number of days in a month using a switch case.
5. Write a C program to find the maximum and minimum number between two numbers using a switch case.
6. Write a C program to find the maximum and minimum numbers among three numbers using the ternary operator.
7. Write a C program to check whether a number is even or odd using a switch case and ternary operator.
8. Write a C program to check whether a number is negative, positive or zero using switch case and ternary operator

#Practice Problems:

1. Write the same if-else problems using switch-case and ternary operator (if possible).
2.

Loop

#Lab Report 04

1. Write a C program to print all natural numbers in reverse (from n to 1)
2. Write a C program to print all alphabets from a to z.
3. Write a C program to print sum of all even numbers between 1 to n.
4. Write a C program to print sum of all odd numbers between 1 to n.
5. Write a C program to print prime numbers between 1 to n.
6. Write a C program to print table of any number.
7. Write a C program to enter any number and calculate sum of all natural numbers between 1 to n
8. Write a c program to print all numbers from 1 to 10 without number 5.
1 2 3 4 6 7 8 9 10
9. Write a c program to print all numbers from 1 to
10 where all even numbers will be 0.
1 0 3 0 5 0 7 0 9 0
10. Write a c program to print the following series

1	2
3	4
5	6
.	.
.	.
19	20

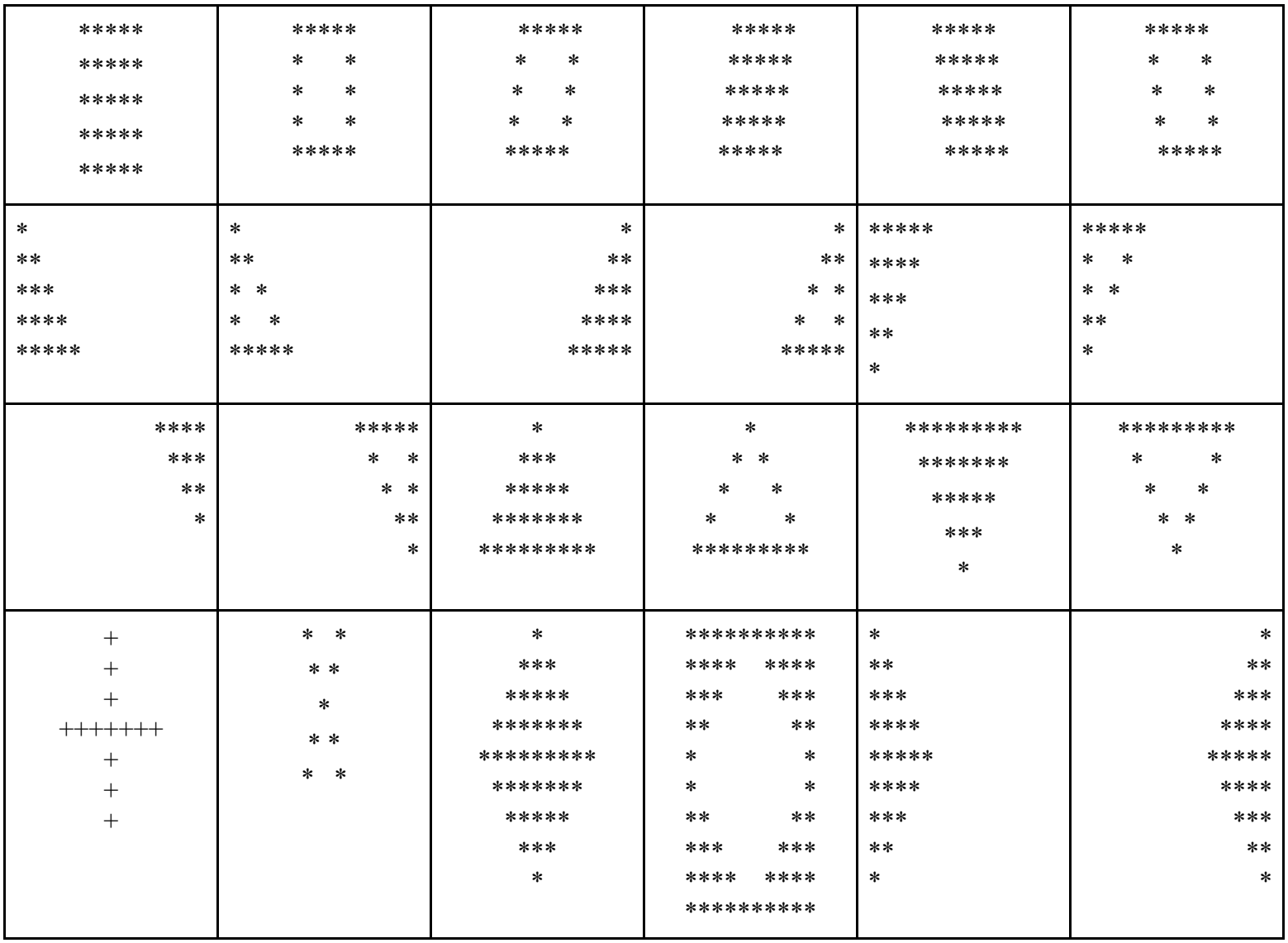
11. Write a c program to print the following series –

1	10
2	9
3	8
.	.
.	.
10	1

12. Write a c program to print the result of 5!.
13. Write a c program to find out the vowel and consonant by using for loop and mark it via ‘v’ and ‘c’ respectively.
14. Write a c program to find and count the vowel, consonant and total character from ‘a’ to ‘m’ by using ‘for loop’ and mark it via ‘v’ and ‘c’ respectively.

#Practice Problems:

1. Write the same problems using for loop, while loop, and do-while loop.
2. Print patterns:



Function, recursion

#Lab Report 06

1. Write a C program to find cube of any number using function
2. Write a C program to find diameter, circumference and area of circle using functions
3. Write a C program to find maximum and minimum between two numbers using functions
4. Write a C program to check whether a number is even or odd using functions
5. Write a C program to print all perfect numbers between given interval using functions
6. Write a C program to find power of any number using function
7. Write a C program to print numbers between 1 to n using function
8. Write a C program to print all even or odd numbers in given range using function
9. Write a C program to find sum of all even or odd numbers in given range using function
10. Write a C program to find factorial of a given number using function

#Practice Problems:

1. Write loop problems using recursion.
2.

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1. Write a C program to print all even or odd numbers in given range using recursion.
2. Write a C program to find sum of all natural numbers between 1 to n using recursion.
3. Write a C program to find sum of all even or odd numbers in given range using recursion.
4. Write a C program to find reverse of any number using recursion.
5. Write a C program to check whether a number is palindrome or not using recursion.
6. Write a C program to find sum of digits of a given number using recursion.
7. Write a C program to find factorial of any number using recursion.
8. Write a C program to generate nth Fibonacci term using recursion.
9. Write a C program to find GCD (HCF) of two numbers using recursion.
10. Write a C program to find LCM of two numbers using recursion.
11. Write a C program to display all array elements using recursion.
12. Write a C program to find sum of elements of array using recursion.
13. Write a C program to find maximum and minimum elements in array using recursion.
14. Write a C program to read and print elements of array. – using recursion.
15. Write a C program to find sum of all array elements. – using recursion.
16. Write a C program to find maximum and minimum element in an array. – using recursion.

Array

#Lab Report 05

1. Write a C code to read and print elements of an array
2. Write a C code to print all negative elements in an array
3. Write a C code to find sum and average of all array elements in an array
4. Write a C code to find maximum and minimum element in an array
5. Write a C code to find a value from an array with its position
6. Write a C code to copy all values from an array into another array
7. Write a C code to insert a values to a specific position
8. Write a C code to delete a values to a specific position

#Practice Problems

1. Make a diagonal Matrix using 2D array
2.

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1. Write a C program to print all negative elements in an array.
2. Write a C program to find second largest element in an array.
3. Write a C program to count total number of even and odd elements in an array.
4. Write a C program to count total number of negative elements in an array.
5. Write a C program to copy all elements from an array to another array.
6. Write a C program to insert an element in an array.
7. Write a C program to delete an element from an array at specified position.
8. Write a C program to count frequency of each element in an array.
9. Write a C program to print all unique elements in the array.
10. Write a C program to count total number of duplicate elements in an array.
11. Write a C program to delete all duplicate elements from an array.
12. Write a C program to merge two array to third array.
13. Write a C program to find reverse of an array.
14. Write a C program to put even and odd elements of array in two separate array.
15. Write a C program to search an element in an array.
16. Write a C program to sort array elements in ascending or descending order.
17. Write a C program to sort even and odd elements of array separately.
18. Write a C program to left rotate an array.
19. Write a C program to right rotate an array.

#Practice Problems

1. Show usage of string functions: (strlen, strcpy, strcat, strcmp, strlwr, strupr, gets, puts, strrev)
2. Show usage of string function manually
3.

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1. Write a C program to toggle case of each character of a string.
2. Write a C program to find total number of alphabets, digits or special character in a string.
3. Write a C program to count total number of vowels and consonants in a string.
4. Write a C program to count total number of words in a string.
5. Write a C program to check whether a string is palindrome or not.
6. Write a C program to find first occurrence of a character in a given string.
7. Write a C program to find last occurrence of a character in a given string.
8. Write a C program to search all occurrences of a character in given string.
9. Write a C program to count occurrences of a character in given string.
10. Write a C program to find highest frequency character in a string.
11. Write a C program to find lowest frequency character in a string.
12. Write a C program to count frequency of each character in a string.
13. Write a C program to remove first occurrence of a character from string.
14. Write a C program to remove last occurrence of a character from string.
15. Write a C program to remove all occurrences of a character from string.
16. Write a C program to remove all repeated characters from a given string.
17. Write a C program to replace first occurrence of a character with another in a string.
18. Write a C program to replace last occurrence of a character with another in a string.
19. Write a C program to replace all occurrences of a character with another in a string.
20. Write a C program to find first occurrence of a word in a given string.
21. Write a C program to find last occurrence of a word in a given string.
22. Write a C program to search all occurrences of a word in given string.
23. Write a C program to count occurrences of a word in a given string.
24. Write a C program to remove first occurrence of a word from string.
25. Write a C program to remove last occurrence of a word in given string.
26. Write a C program to remove all occurrence of a word in given string.
27. Write a C program to trim leading white space characters from given string.
28. Write a C program to trim trailing white space characters from given string.
29. Write a C program to trim both leading and trailing white space characters from given string.
30. Write a C program to remove all extra blank spaces from given string.

Pointer

1. We know that “Call by value” in a function returns only 1 value. Use “Call by reference” to return two values or, work with two values and print them in the main function.
2.

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1. Write a C program to create, initialize and use pointers.
2. Write a C program to add two numbers using pointers.
3. Write a C program to swap two numbers using pointers.
4. Write a C program to input and print array elements using pointer.
5. Write a C program to copy one array to another using pointers.
6. Write a C program to swap two arrays using pointers.
7. Write a C program to reverse an array using pointers.
8. Write a C program to search an element in array using pointers.
9. Write a C program to access two dimensional array using pointers.
10. Write a C program to add two matrix using pointers.
11. Write a C program to multiply two matrix using pointers.
12. Write a C program to find length of string using pointers.
13. Write a C program to copy one string to another using pointers.
14. Write a C program to concatenate two strings using pointers.
15. Write a C program to compare two strings using pointers.
16. Write a C program to find reverse of a string using pointers.
17. Write a C program to sort array using pointers.
18. Write a C program to return multiple value from function using pointers.