

St. Xavier's School, Doranda
Topics for the Project work
Class - X
Session: 2020 - 2021

Class	Subjects	Project Topics	Date of Submission
X	English - I	Formal letters of different kinds: 1 Complain, 2 Apology, 3 to the principal of your School, 4 to the editor, 5 Application for job, 6 to the police, 8 letters of each kind.	15 July 2020
X	English - II	How friendship, loyalty and concern have been portrayed in the play Merchant of Venice, throwing light on their characters.	15 July 2020
X	Hindi	Bharat ka atit Gaurav - Ajanta Ki Chitrakala	15 July 2020
X	Mathematics	SHARES AND DIVIDEND	15 July 2020
X	History & Civics	Gandhi And National Movement – Non- Cooperation Movement, Civil Disobedience Movement and Quit India Movement.	15 July 2020
X	Geography	Wildlife Conservation Efforts in India	15 July 2020
X	Computer	COMPUTER APPLICATIONS ASSIGNMENT	15 July 2020

COMPUTER APPLICATIONS ASSIGNMENT

Class: X

- Question 1.** Write a program to input a sentence and find the no. of words which begin and end with a vowel. Also print those words.
- Question 2.** Write a program to input a sentence and print those words which do not contain a vowel. Also count those words.
- Question 3.** Write a program to input a sentence and find the no. of Palindromes present in it. Also count the no. of Palindromes words.
- Question 4.** Write a program to input a word and convert it to its PigLatin form.
- Question 5.** Write a program to input a word and reprint after arranging it alphabetically.
- Question 6.** Write a program to input a name and display it in bibliography form.

- Question 7.** Write a program to input a sentence and reprint after exchanging the first and last words of the sentence.
- Question 8.** Write a program to input a sentence and print the word the word containing the maximum no. of vowels. Also print the no.of vowels in that word.
- Question 9.** Write a program to input a sentence. Develop a menu based upon which print:
 (i)Word formed by combing first letters of each word.
 (ii)Word formed by combing last letters of each word.
- Question 10.** Write a program to input a name and check whether it is a unique name or not. A name is said to be unique in which the letters do not repeat.
- Question 11.** Write a program which will input the number of calls made and find the telephone bill according to following rates.
- | UNITS CONSUMED | BILL AMOUNT |
|-----------------|-----------------------------|
| Upto 100 calls | Rental of Rs. 500 only |
| Next 200 calls | Additional Rs.1.50 per call |
| Next 200 calls | Additional Rs.2.00 per call |
| Rest Additional | Rs.2.50 per call |
- Question 12.** Write a program which will input a number and check whether it is a special number or not. A number is said to be special if the sum of the factorials of the digits is equal to the original number Example: $145 = 1! + 4! + 5! = 1+24+120=145$
- Question 13.** Write a program which will ask the user to input a choice ch and the height of the triangle h and print either of the following patterns based on the user's selection.
 Ch=1 h=4 output :
 1
 12
 123
 1234
 Ch=2 h=5
 output : 12345
 1234
 123
 12
 1
- Question 14.** Write a program which will be using function overloading to do the following:
 a. void findarea(int a): to find the area of the equilateral triangle
 b. void findarea(int b, int h) : to find the area of the right angled triangle
 c. void findarea(int a , int b, int c): to find the area of the scalene triangle
 The main function should call above methods
- Question 15:** Using the switch statement, write a menu driven program to:
 (i) Input a sentence and count the number of vowels present in it
 (ii) Input a word and check if it is a palindrome or not
 A palindrome is a word which is same even after reversing the letters of the word.
 E.g. MADAM, NITIN

Question 16: Design a class to overload a function calculate () as follows:

(a) void calculate (int a, int b, char ch)– to find the sum of x and y if ch is ‘s’ otherwise find their average.

(b) void calculate(char ch1, char ch2) – to print the difference between the ASCII codes of the two characters.

(c) void calculate (String s)– to print the letters of s in separate lines: Eg.: If s=”INDIA”

Output: I

N

D

I

A

Question 17: Design a class to overload a function print () as follows:

(a) void print (int x, int y, char c)– to find the average of x and y if c is ‘a’ otherwise find the bigger of the two.

(b) void print (char ch1, char ch2) – to print the difference between the ASCII codes of the two characters.

(c) void print (char ch, int n)– to print the character ch, n number of times in the given format: Eg.: If ch = ‘\$’ and n = 4 Output: \$ \$ \$ \$

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\$ \$

\$

Question 18: Write a program to perform the following

(a) To print the series 2, 5, 10, 17, 26 upto n terms (value of ‘n’ is to be an input by

the user).

(b) To find the sum of the series given: $S = 1/2 + 3/4 + 5/6 + 7/8 + \dots + 19/20$.

Question 19: Using the switch statement, write a menu driven program to:

(i) Generate and display the first n elements of the Fibonacci series

0,1,1,2,3,5,8,13,21.....

(ii) Input a number and check whether it is an automorphic number or not.

An automorphic number is a number which is present in the last digit(s) of its square.

Example: 25 is an automorphic number as its square is 625 and 25 is present as the

last digits

For an incorrect choice, appropriate error message should be displayed.

Question 20: Write a program which will input a sentence and display the number of

1. Upper Case Letters

2. Lower Case Letters

3. Digits

4. Blank Space

5. Special Characters

Question 21: Write a program to input ten numbers each in two different arrays and find the sum of the two arrays.

Question 22: Write a program that asks the user to enter an integer (N). Create a single-dimensional array of N double values. Ask the user to enter the N double values to populate this array. Sort this array in reverse (descending) order using the selection sort method, and print the same on a single line, each element separated by a space

Question 23: The annual examination results of 50 students in a class is tabulated as follows.

Roll no.	Subject A	Subject B	Subject C
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Write a program to read the data, calculate and display the following:

- Average mark obtained by each student.
- Print the roll number and average marks of the students whose average mark is above 80.
- Print the roll number and average marks of the students whose average mark is below 40.

Question 24: Write a program to input numbers in a 4 X 5 matrix. Display the numbers in a tabular form. Also display the sum of elements of each row.

Question 25: Write a program to input 10 numbers in a Single Dimension array. Using Selection Sort Technique Arrange the elements in ascending order. Input a number and using Binary Search Technique check whether the number is present in the array or not