

ASSIGNMENT- 4 OF C PROGRAMMING

- 1) Firstly, I have included the standard input output library by use of include directive. Then I have created a structure of data type complex by using typedef (to rename the type struct complex to complex) which is a user defined data type. I have taken two members for each complex number (structure) of type complex and they are real and imaginary of both float data type. Then I have declared three functions i.e., add, subtract and multiply before the main function. Then in the main function I have created two structures naming n1 and n2 of type complex. Then I am reading the real and imaginary parts of two complex numbers by the user through keyboard using scanf function. Then I have made an operation code (add-0, subtract-1, multiply-2) which is also being read from the user in the program. I have used the switch case to particularly select the operation code and to execute the things (till break statement is found) after the case of matched label. I am doing the operation on both complex numbers in the function and returning a structure of same type complex containing the answer and then I am printing it on the screen using printf function. So, by this I can add, subtract or multiply any two complex numbers according to the user's need.
- 2) In the second question firstly, I have included the standard libraries like standard input output, standard library and string library. Then I have created a structure of tag info (used typedef to rename struct information to info). I have made members like email, name, age, roll_no and the hosteladdress. Then I have declared the three functions according to the demand of the question. Then in the main function I have firstly asked the user to tell the total number of students for whom the data will be stored. Now stored the data of all the students

using the concepts of loops and structures. After this I have called the three functions. Then I have declared the three functions before the main method and defining them afterwards according to the need of the question.

3) Firstly, I have included the needed libraries to my program.

Then I have made an array to store the data being read from the file. Then I have made a file pointer of type FILE and use it to open the file and to read everything inside it into the array. Then I have used a function modify to change all the first and the last letters of every word in the file to uppercase using the concepts of array subscripting. Then using another file pointer, I have again opened another file and write everything stored in the array. So now I am able to see that how first and last letter of every word has changed to uppercase. Also, I have taken care of that if the file is not opened successfully then I can detect the null pointer and immediately exit the program.

4) Firstly, I have included all the needed libraries to the program using directive “#include”. Then I have created a structure of type student using typedef. I have taken the members in it as email, name, roll no and marks in three assignments as an array of length 3. Then in main method I have taken input from user the total number of students. Also, I have created an array of structures named database of type student. Then I have scanned all the details of students using scanf function and stored it in the database. Now I have opened a file using file pointer and write all the details to the file using fprintf function. Now I have closed the above file and reopen it again in read mode and by using fgetc I have read everything that is present in the file opened. Also, at the time of opening I have checked whether the pointer may be a null pointer and if it is then I have used the exit to exit from the program.