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INTRODUCTION TO C++

C++ is a programming Language Developed by Bjarne Stroustrup. It was originally named as C with classes, was renamed as C++ in 1983 by Rick Mascitti. It is regarded as an intermediate-level language, as it comprises both high-level and low-level features.

Features of C++:

- C++ supports for data abstraction and data encapsulation through the use of 'private', 'protected' and 'public' members of a class.
- C++ being an OOP (Object Oriented Programming) language supports inheritance and polymorphism.
- C++ also supports modularity through the header files which contain in-built functions.
- It is a portable language. One can use a program on multiple systems.

OBJECTIVE OF E-LEARNING

The objective and scope of my Project E-Learning Portal is to develop a platform on which both students and teachers can interact and get benefitted. It will simplify the task and reduce the paper work.

It will help the students sitting in far corners of the world to get the best Education facilities.

During implementation, every user must have a password at the time of creation of their account to ensure data-security.

I observed that during class tests, all get similar question paper sets so it gives them a chance to use unfair means. Also, it is seen that if a number of sets are present then, the level of question papers is not exactly the same for all. This is possible that a question paper contains almost all the questions easy while the other contains the toughest of all the questions.

So, the 'test system' must be user friendly and must remove all the deficiency from which the traditional system is suffer.

Also, the system must be self-sustained i.e. there not be any need of the developer or anyone else for maintenance but the users would themselves do this.

ABSTRACT

The program uses C++ and maintains the records of teachers and students. When the records are changed there is a need to update them. For Example, a student studying in class XI at present will be in class XII next year, or a student may want to make his/her password more strong, etc. So, there is a feature to modify profile.

The system ensures data-security as to log-in, one requires to enter a password.

The 'Question Bank' and 'Notes' are updated by the authenticated teachers time-to-time.

During the test, all students would get random questions but the level of questions would remain the same for all.

This E-Learning System is used to overcome the entire problem which we are facing currently, and making complete atomization of manual system to computerized system.

WORKING

The E-Learning Portal works on two levels-

(i) Teacher level
(ii) Student level

So, accordingly, 2 classes 'st' and 'teach' are derived from the abstract class 'user'.

(i) Teacher:-

A new teacher can enter all his details along with a password to create an account. These details are stored in a file 'T_REC.txt'.

When he tries to login, his first name and password are searched in the file, if they match, he enters the teacher's menu, where he can perform the following tasks:

(a) Adding notes for a subject:-

The user is first required to choose, to which chapter he wanted to add notes. The program opens the existing "C++.txt" or "Netw.txt" file, as per user's choice, writes strings accepted from user, one by one and then closes the file.

(b) Adding questions for test:-

The user is required to enter the question along with its 4 options, the correct option, the explanation and the difficult level of question (Easy/Medium/Difficult). Then, the file 'Q_LIST.dat' is opened and the question is written in the file and the file is closed.

(c) View test questions:-

The file 'Q_LIST.dat' is opened, all the questions are read and displayed on the screen one by one along with the options and the file is closed.

(d) Modify Profile:-

The user is asked to re-enter the details he wants to modify. Then the record with modified details is re-entered at the appropriate position in 'T_REC.txt' file.

(e) View Profile:-

The details of the user are displayed on the screen.

(ii) **Student:-**

A new student can enter all his details along with a password to create an account. These details are stored in a file 'S_REC.txt'.

When he tries to login, his first name and password are searched in the file, if they match, he enters the student's menu, where he can perform the following tasks:

(a) Learn a subject:-

The user is first required to choose, which chapter he wants to learn. Then the program opens the existing "C++.txt" or "Netw.txt" file, as per user's choice, reads and displays strings from the file, one by one and then closes the file.

(b) Take a test:-

To perform this task the program uses the technique of opening the existing "Q_LIST.dat" file for reading, a "Easy.dat" and a "Hard.dat" file for writing. The existing questions are read from the "Q_LIST.dat" file, the easy ones are written in the "Easy.dat" file and the hard ones are written in the "Hard.dat".

Then at random, a question from “Easy.dat” is displayed and user’s response is asked, then that question is deleted from the file and this process repeats to ask 3 easy and 2 hard questions. Then, the user’s score is displayed accordingly.

(c) Modify Profile:-

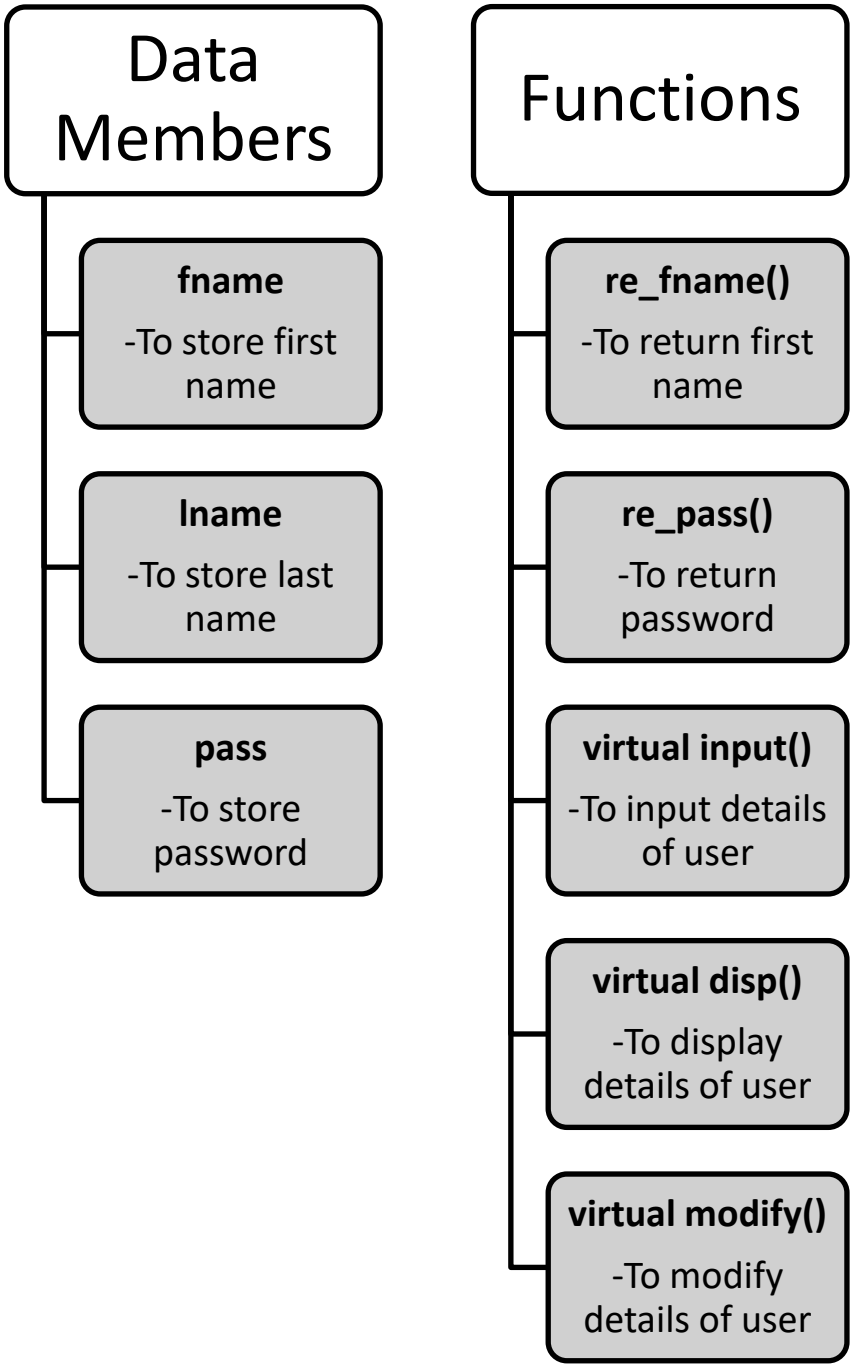
The user is asked to re-enter the details he wants to modify. Then the record with modified details is re-entered at the appropriate position in ‘S_REC.txt’ file.

(d) View Profile:-

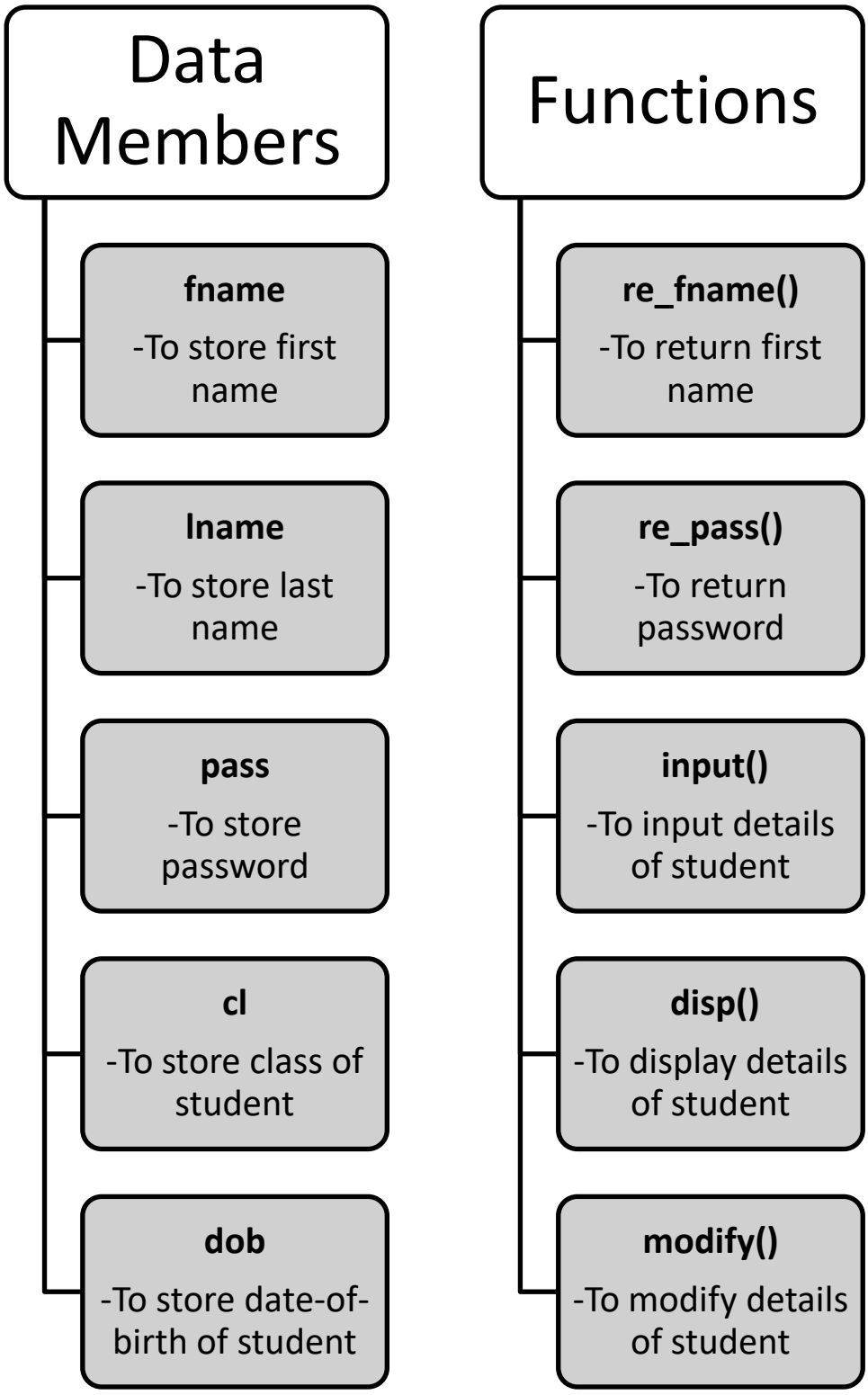
The details of the user are displayed on the screen.

CLASS CHARTS

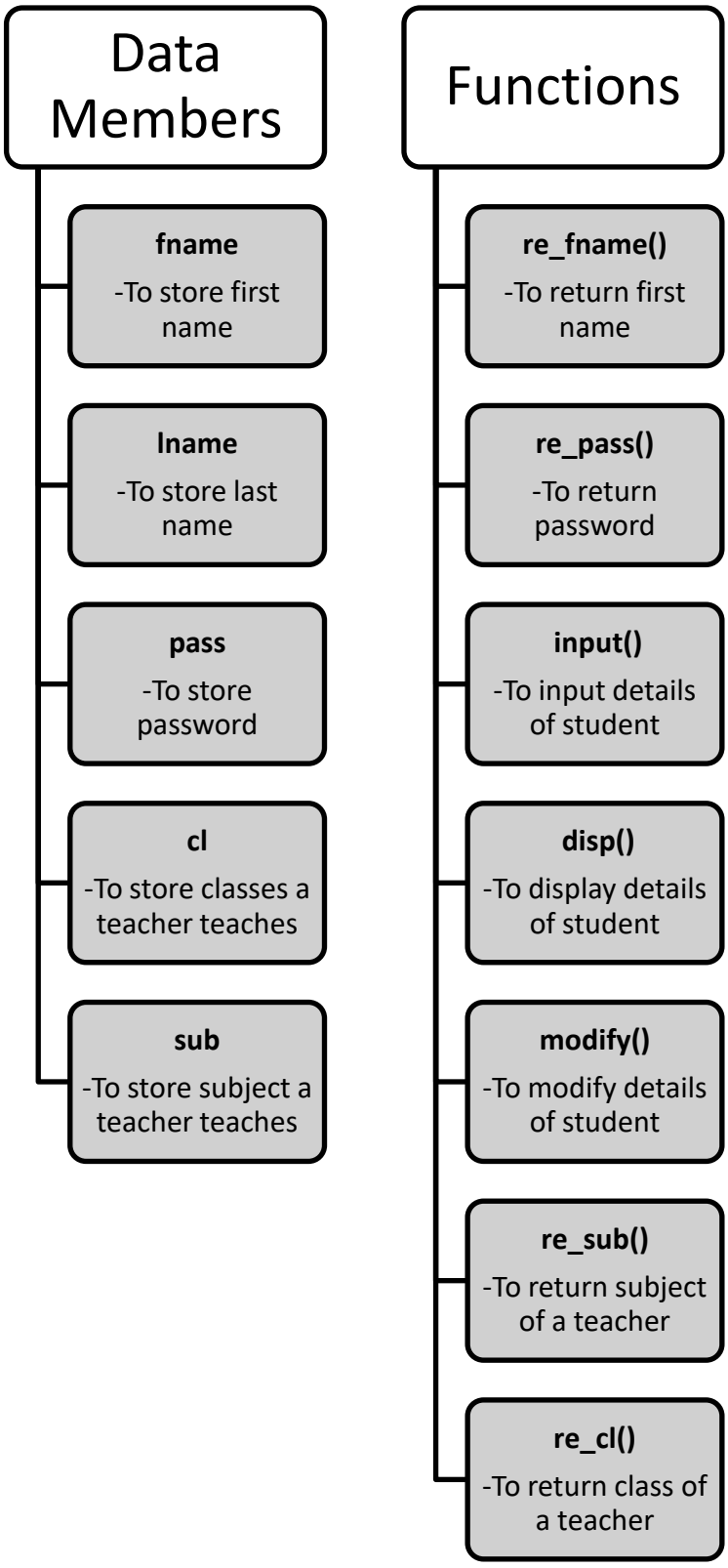
1. Abstract Class 'User'



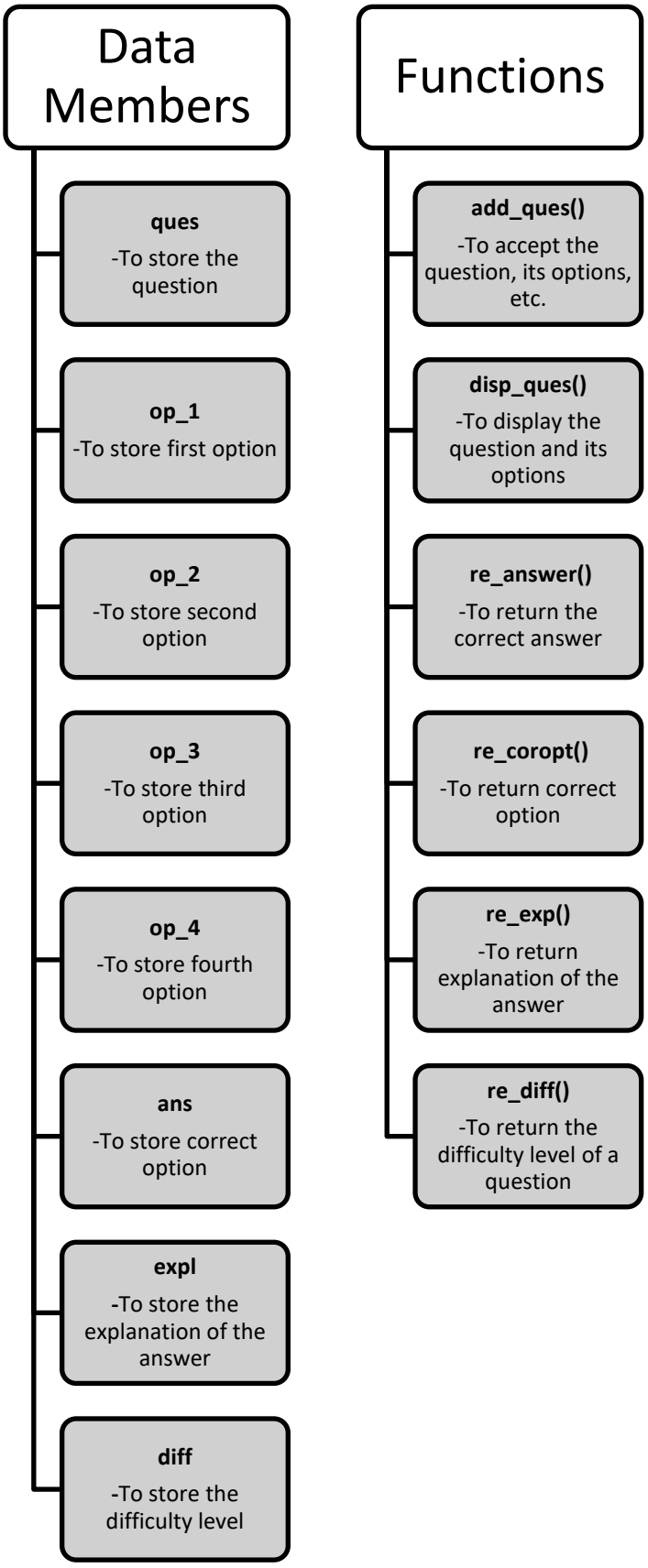
2. Derived Class 'st'



3. Derived Class 'teach'



4. Class 'question'



DATA FILES USED

- **T_REC.txt :-**
  To store details of teachers.

- **S_REC.txt :-**
  To store details of students.

- **C++.txt :-**
  To store notes for 'C++'.

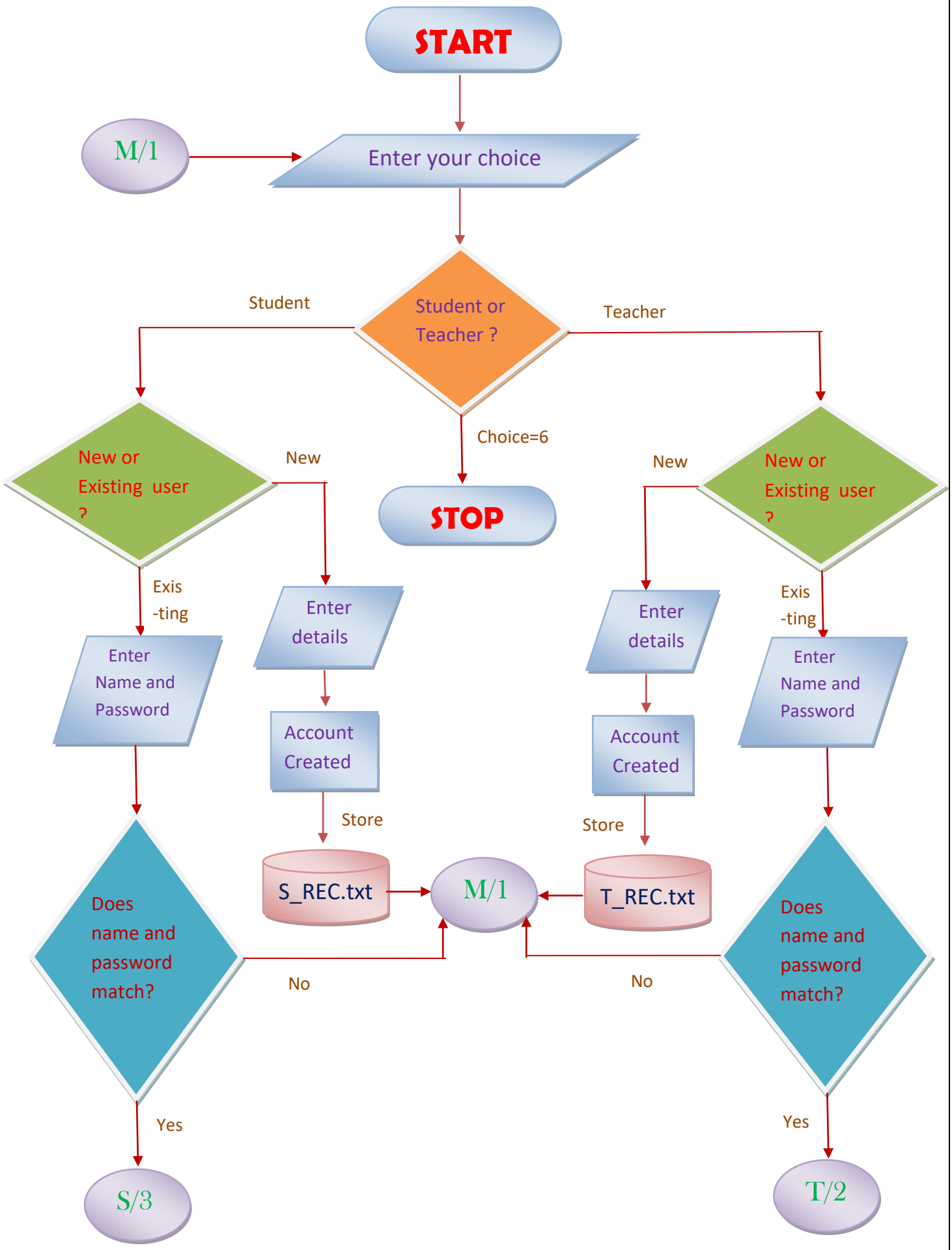
- **Netw.txt :-**
  To store notes for 'Networking Concepts'.

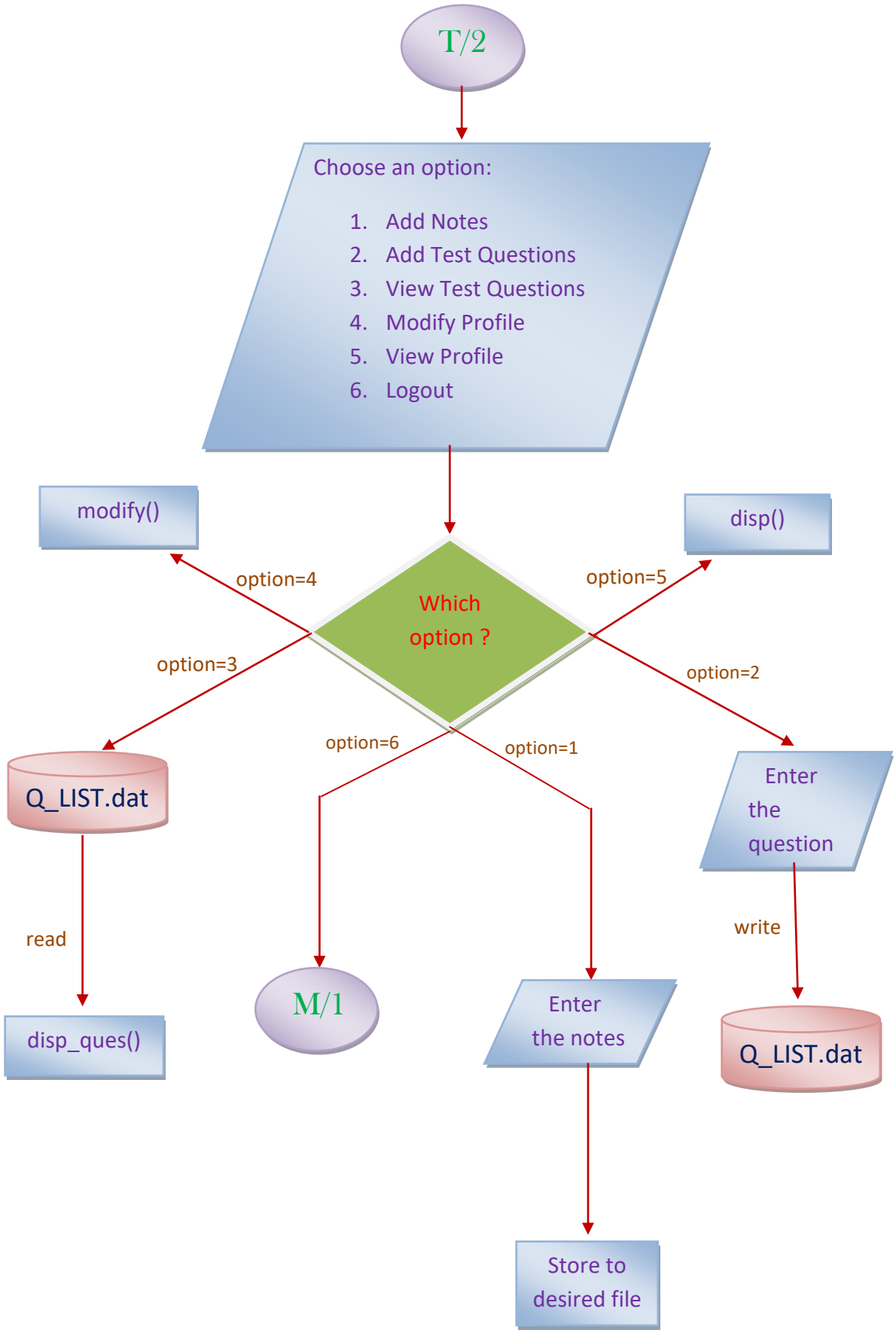
- **Q_LIST.dat :-**
  To store the questions.

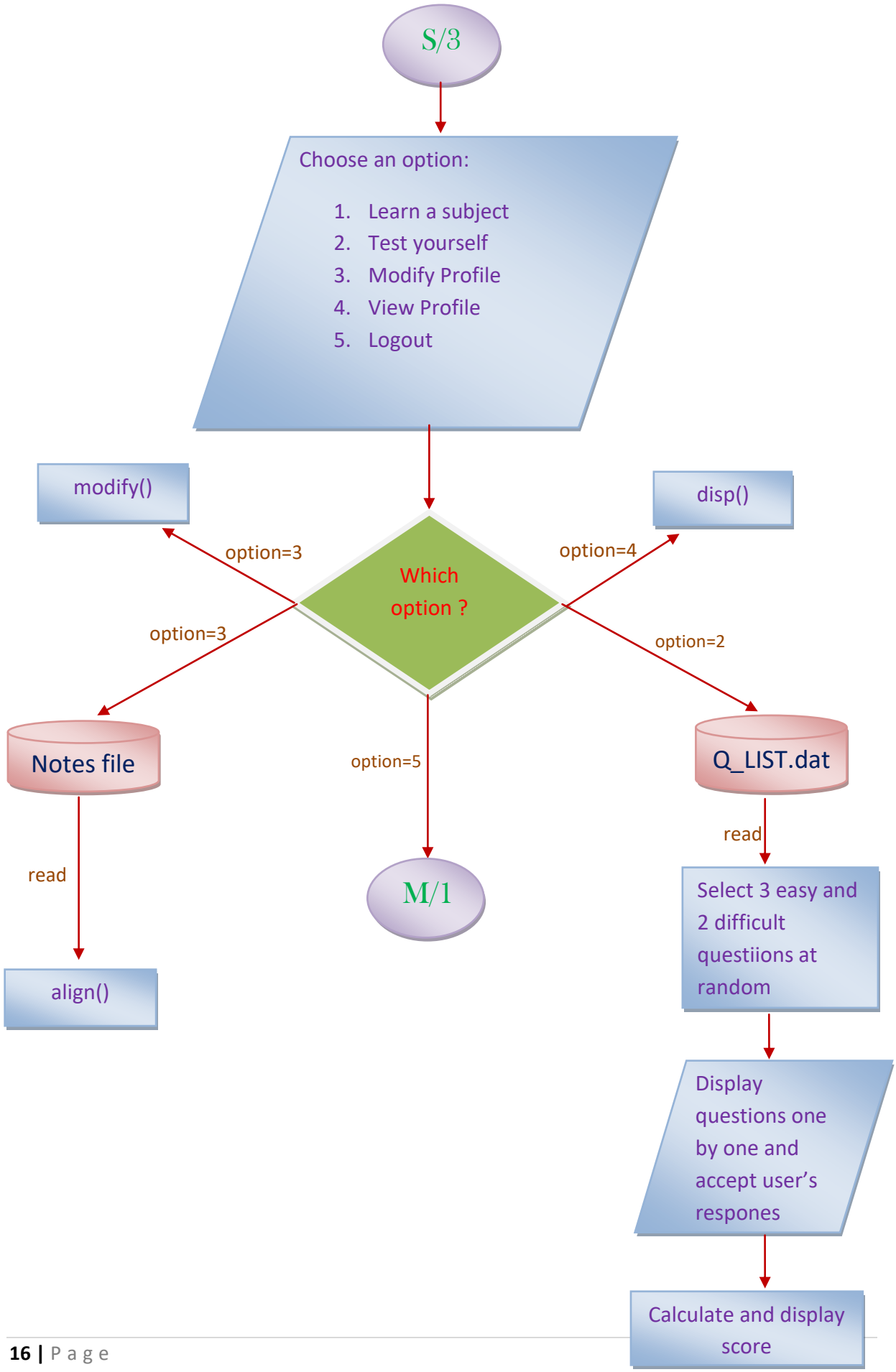
- **Easy.dat :-**
  To sort out the easy questions.

- **Hard.dat :-**
  To sort out the easy questions.

FLOWCHART


START
M/1
Enter your choice
Student or Teacher ?
Student
Teacher
Choice=6
STOP
New or Existing user ?
New
Exis -ting
Enter details
Account Created
Store
Enter Name and Password
S_REC.txt
T_REC.txt
M/1
Does name and password match?
No
Yes
S/3
T/2


T/2
Choose an option:
1. Add Notes
2. Add Test Questions
3. View Test Questions
4. Modify Profile
5. View Profile
6. Logout
Which option ?
modify()
disp()
option=4
option=5
option=3
option=2
option=6
option=1
Q_LIST.dat
Enter the question
read
write
M/1
Enter the notes
disp_ques()
Q_LIST.dat
Store to desired file


S/3
Choose an option:
1. Learn a subject
2. Test yourself
3. Modify Profile
4. View Profile
5. Logout
modify()
disp()
option=3
option=4
Which option ?
option=3
option=2
Notes file
option=5
Q_LIST.dat
read
read
M/1
Select 3 easy and 2 difficult questiions at random
align()
Display questions one by one and accept user's respones
Calculate and display score