VOCATIONAL SKILLS CONTEST   **ABOVE 15 YRS.**

V05 – COMPUTER PROGRAMMING

1.   **OBJECTIVE**

To provide an opportunity to contestants to demonstrate their knowledge, skill and competence in computer programming.

2.   **TASK**

You are administrator of company which creates software for electronic security lockers which are offered to customers on rent. All lockers are connected to common database for authentications purpose. You have been given an assignment to create software for lockers which should satisfy below mentioned use cases:

1. To open a locker, locker should accept two passwords. First password will be punch-in by user who has taken locker on rent and second password is punch-in by the supervisor of company offering security lockers on rent.

2. There can be multiple supervisors in company and a single supervisor will have maximum 30 users under him.

3. Password is combination of numbers only and it can be of maximum 8 digits only

4. User password is unique for each user but individual supervisor password should be common for all user lockers under him.

5. If users enters wrong password 3 times in a sequence, user lockers will be locked for next 30 minutes. During such period, locker should not open even if user key in correct password.

6. Supervisor password needs to be changed after every 20 successful usages.

Please create below mentioned screens:

a.) Create a screen which can act as an interface for security locker. Screen should contain
   a. numbers from 0-9
   b. Enter button
   c. Reset button
   d. Delete button
   e. Change password button

b.) Create a screen to show list of failed/successful attempts for a particular user for a particular time interval.

c.) Create a screen to create/edit users and supervisor in system.

Tips: Show proper error messages wherever applicable.

3. **SPECIAL INSTRUCTIONS**

The package developed should be user friendly. The software JAWS/NVDA will be loaded for the visually impaired contestants.

4. **SOFTWARE**

The following compilers will be loaded for program development: -
   - JAVA/C /C++
   - Eclipse/Microsoft Visual Studio
   - Visual Basic 6
   - MS - Access

5. **WORK ENVORONMENT**

Computers will be placed on tables. In case of special working conditions requirement, the same should be asked for 24 hours prior to the contest.

6. **ALLOCATED TIME**

Maximum time 6 hrs (in two sessions of 3 hrs. each).

7. **EVALUATION CRITERIA**
Assessment of the skill of the participants will be based on the final work produced.

Items to be Evaluated	Maximum Marks Allotted
Code correctness, formatting, comments	30
Database/file design	30
Proper error handling and data validation	15
User interface	25
Total Marks	**100**