Software Development Layout on “Online Examination System”

Abstract

This project focuses on developing a software for online examinations. The system implements the defence services selection process.

The objective of this project is to computerize the whole system of the examination, so that the process becomes fast, easy and transparent. The paper work is minimized. It works according to the need and lowers the workload of user.

The system will contain candidate's all information. It can also provide different details related to the defence services like SSB centre details, SSB Procedure, etc..

It provides easy management of details of students and their selection. It would provide easy navigation menu which a layman user can also use. This system clearly aims at reducing the paper work at the cost to be borne of the registers and other things

It will basically speed up the operation and decrease manpower, high cost. Increase security, speed, storing and accuracy.

This project can also be expanded for other selection services too like for government jobs, entrance exams for various courses.

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1. INTRODUCTION

Overview of the Project

The whole purpose of this software is to computerize the whole system of the selection of candidates for defence services, so that the process becomes fast, easy and transparent. The paper work is minimized. It lowers the workload of user.

It provides easy management of details of students and their selection. It would provide easy navigation menu which a layman user can also use. This system clearly aims at reducing the paper work at the cost to be borne of the registers and other things

It keeps record of all the information given to it according to the registration id and courses which makes locating a record quite easy.

It will basically speed up the operation and decrease manpower, high cost. Increase security, speed, storing and accuracy.

The software would be able to receive applications, display marks, list, etc. about candidates.

The system shows us the work of the defence services. It shows the procedure that how the right candidates are selected among the other candidates. It provides the way through which the students and candidates can register and it also provides the details of the various things related to defence services.

The existing system is work like that it can store the data of student, details about entrance exam and interview and It would also contain information about various courses and careers in defence services.. It stores the student details like their course, marks, personal details, address, and previous SSB experience. The information is very useful for the system to work on it. The student information having such information like stated above are taken and stored and the student is assigned a special registration id.

The study details would be updated by time for which it enrolled.

This software will be used to invite applications for the particular course, display notification, send timely notifications to the candidates about various details of the course, generate roll no for online entrance exam and allocate the centres to the candidates according to their preferences. Then they can give the entrance exam for their applied course. Also there would be the online practice sets for students to practice as the exam would be online. Also there will be previous year question papers. Then SSB Interview and then the final merit list. The admit card for SSB Interviews can be download from the portal by the candidates.

i. INTRODUCTION TO SYSTEM

The system implements the defence services selection process. It provides the candidates to have the whole stages involved during selection under one umbrella. The system will contain candidate's all information. It can also provide different details related to the defence services like SSB centre details, SSB Procedure, etc.

The existing system works like that. It collects candidate exam Paper, admit card, result, call letters, joining instructions information. The information is very useful for the system to work on it. The candidate information having such information like candidate name, candidate address, candidate D.O.B, candidate AADHAR number, educational qualifications, phone number and various things about SSB past experience and it also give one id as a registration id. By that the data can enter. There are security and some password facility for opening the system's work.

ii. PURPOSE

The purpose of this software is to computerize the manual system of the Selection Services Board, so that all the process becomes fast, transparent and easy. It replaces all paper work.

The aim of proposed system is to develop a system of improved facilities. The proposed system can overcome all the limitations of the existing system. The system provides proper security and reduces the manual work. It provides easy management of entrance exam marks and interview results. It provides an easy navigation menu which a layman user can also use.

iii. SCOPE

The main thing is that we can extend this project ahead to many others courses admission. The main thing is that the project can be further implemented for the well-being of society as it brings transparency, systematic things etc. This project can also be expanded for other selection services too like for government jobs, entrance exams for various courses.

OVERALL DESCRIPTION

Product Perspective

Addition, deletion and updating of records of candidates, generating reports are the basic part or you can also call the objective of this system. In detail below we explain it:

- ✓ If we want to check some history of candidate or anything else we can check easily and also update it too. So, the work is accurate.
- ✓ It does not require a huge number of people to work on it. It does not need such other documents. Only one person can also handle it but some people to help for other activities, and do the other helpful work.
- ✓ It has the facility of the password that helps for the security. That can save the document. It makes the high security.
- ✓ For having the online examination, it can easy for work and helpful. Anyone can handle it easily. So for the online examinations are easily handled. By that the examination are made too easy to manage and control. And it can be done fast and efficiently. The work is distributed for do it easily and understand the parts. By the distribution it can done properly and so easily.
- ✓ The answer sheets can be easily managed and checked and the result of examination is now easily compiled with less manpower, resources, time, etc.
- ✓ It also generates the final result and list and display easily and the remote area people got benefit as they have to face problems like the postal issues.

2. SOFTWARE DESIGN

a)Software Process Model

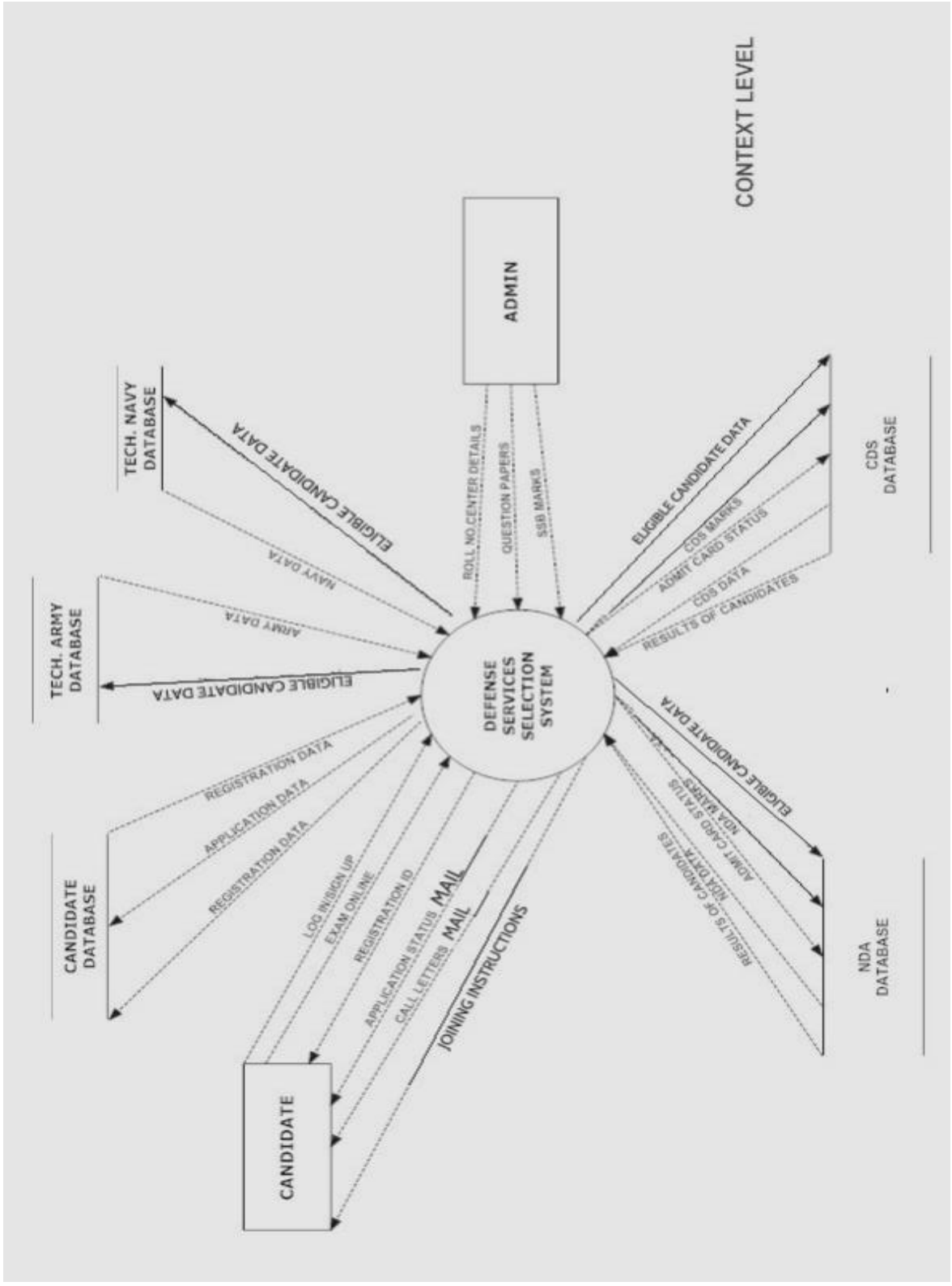
We are using **Spiral Model** as the process model in our project because

- ✓ In our project the software will be updated according to the needs of the defence service making software about the process.
- ✓ Also the defence services will give the feedback to the company about the whole procedure and time.
- ✓ The Risk related to the software need to be accessed timely and should be estimated.
- ✓ Also the spiral model provides with timely update of the software.
- ✓ Also our project is for the lifetime as the defence services will select the candidates with the life time.
- ✓ Also the software need to be updated according to the technology and server should be maintained.
- ✓ Reliability Requirement, so that data can be used on multiple platform.
- ✓ Reuse of component
- ✓ Tight Project scheduling so the working model is available in the time.

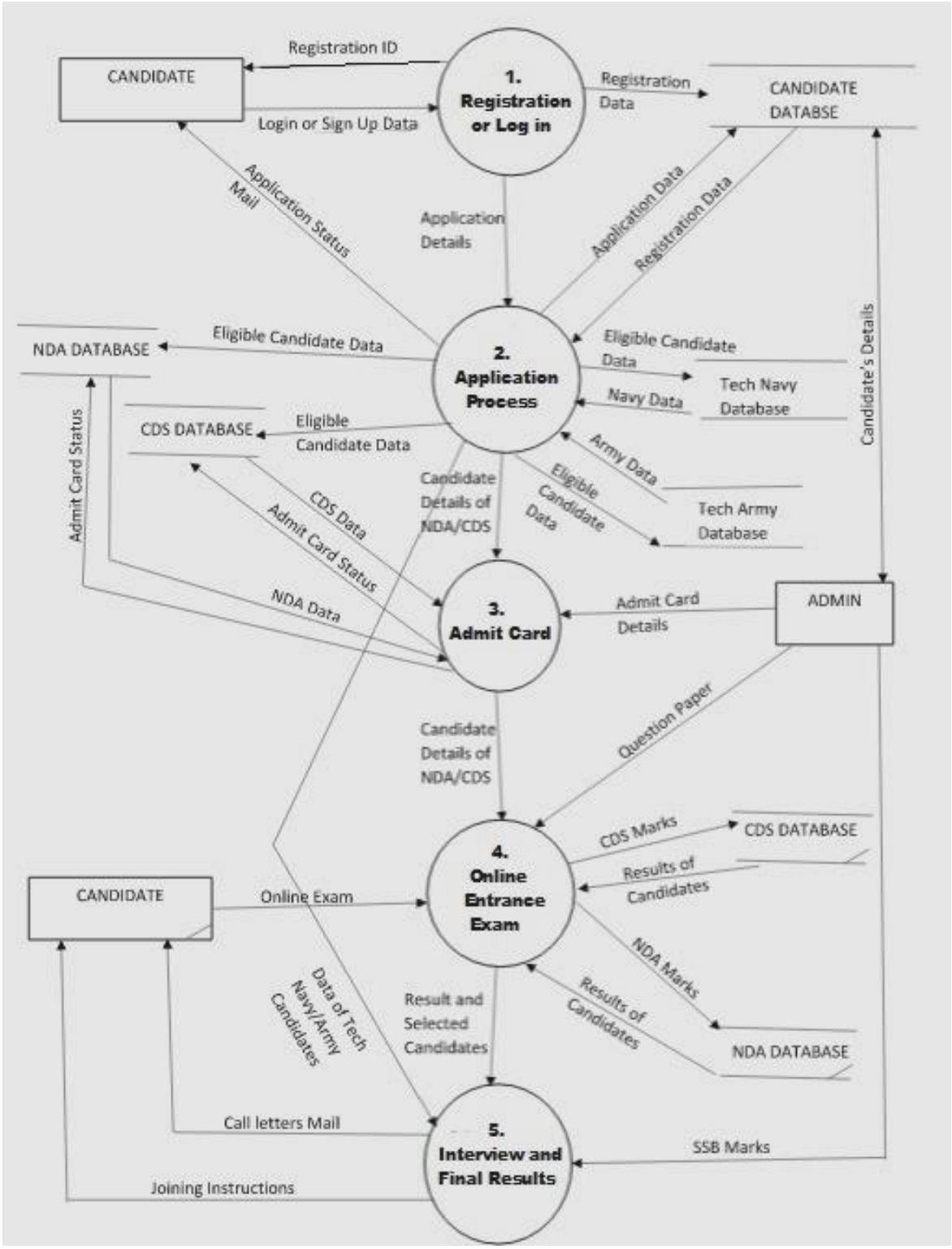
So The Spiral model works best for our project.

b) Data Flow Diagram (DFD)->

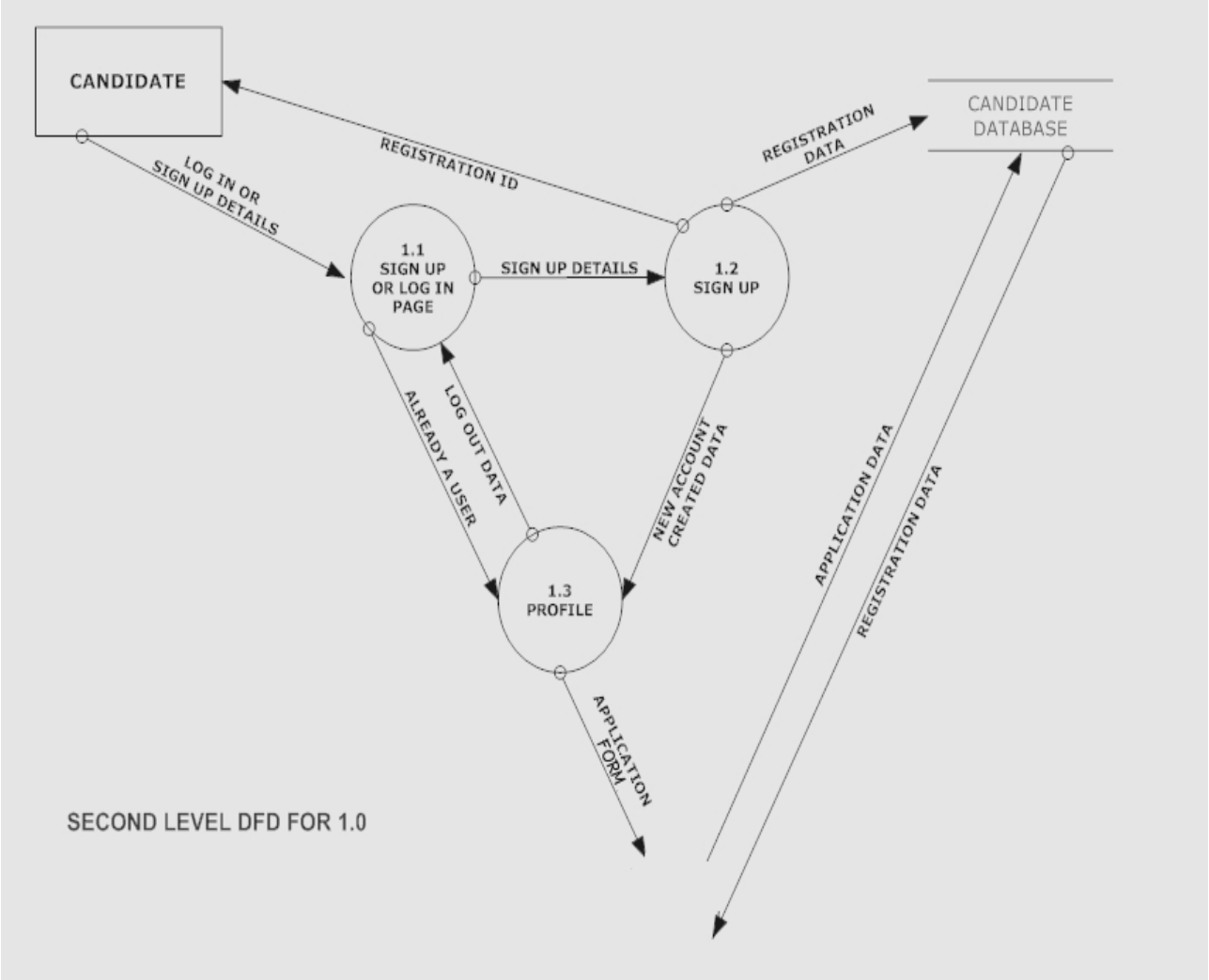
Context Level



First Level DFD



Second Level DFD For 1.0



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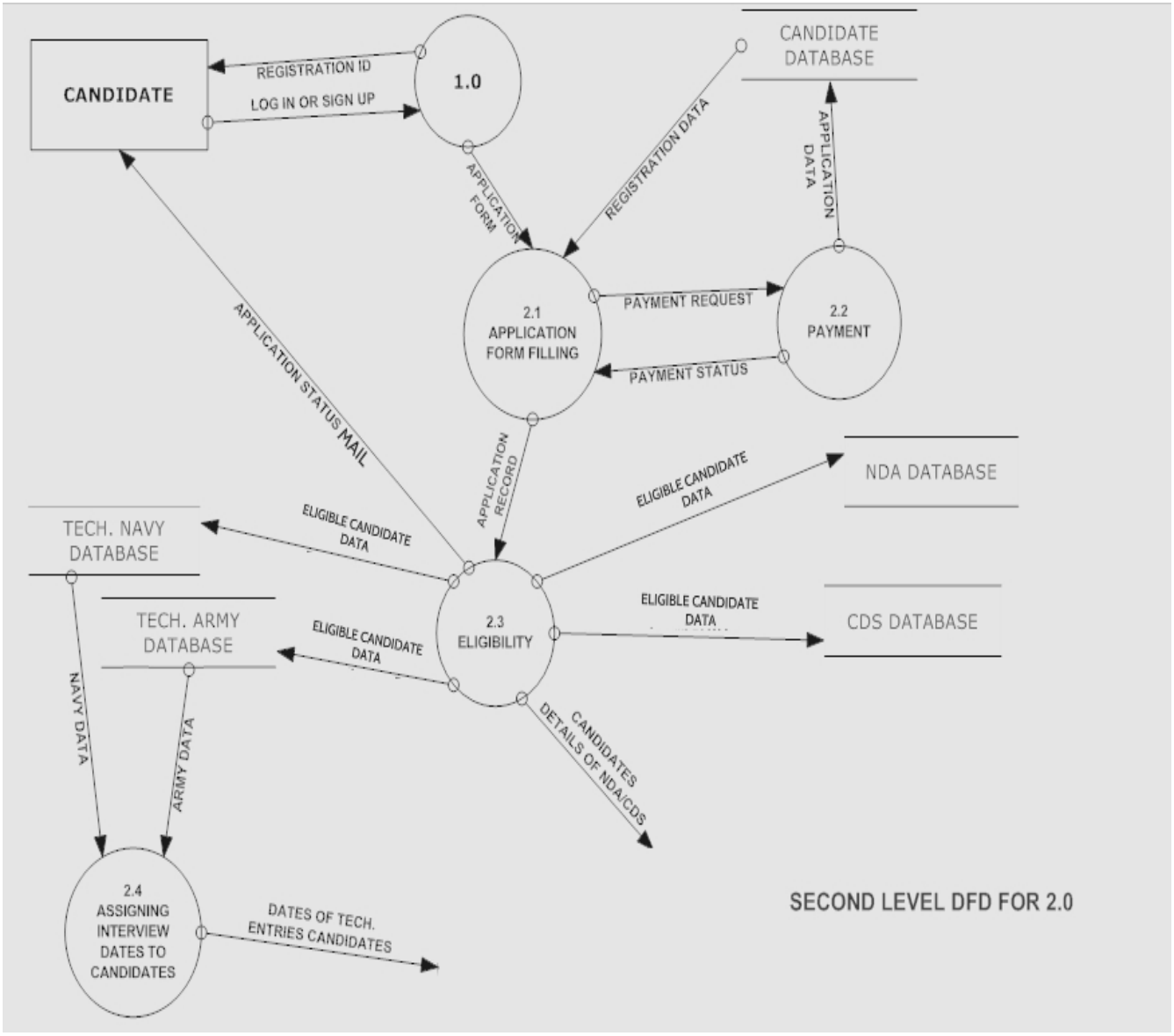
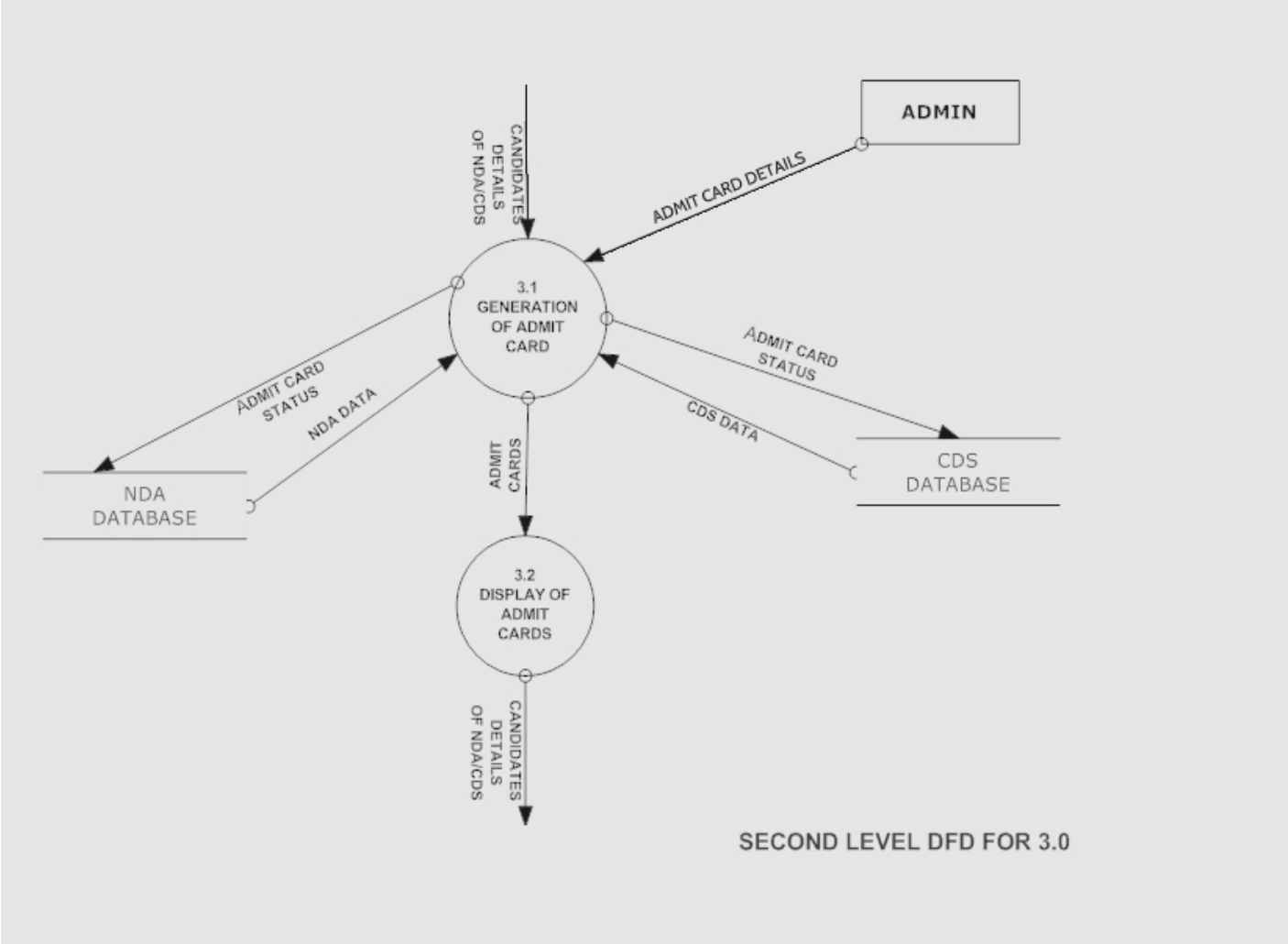
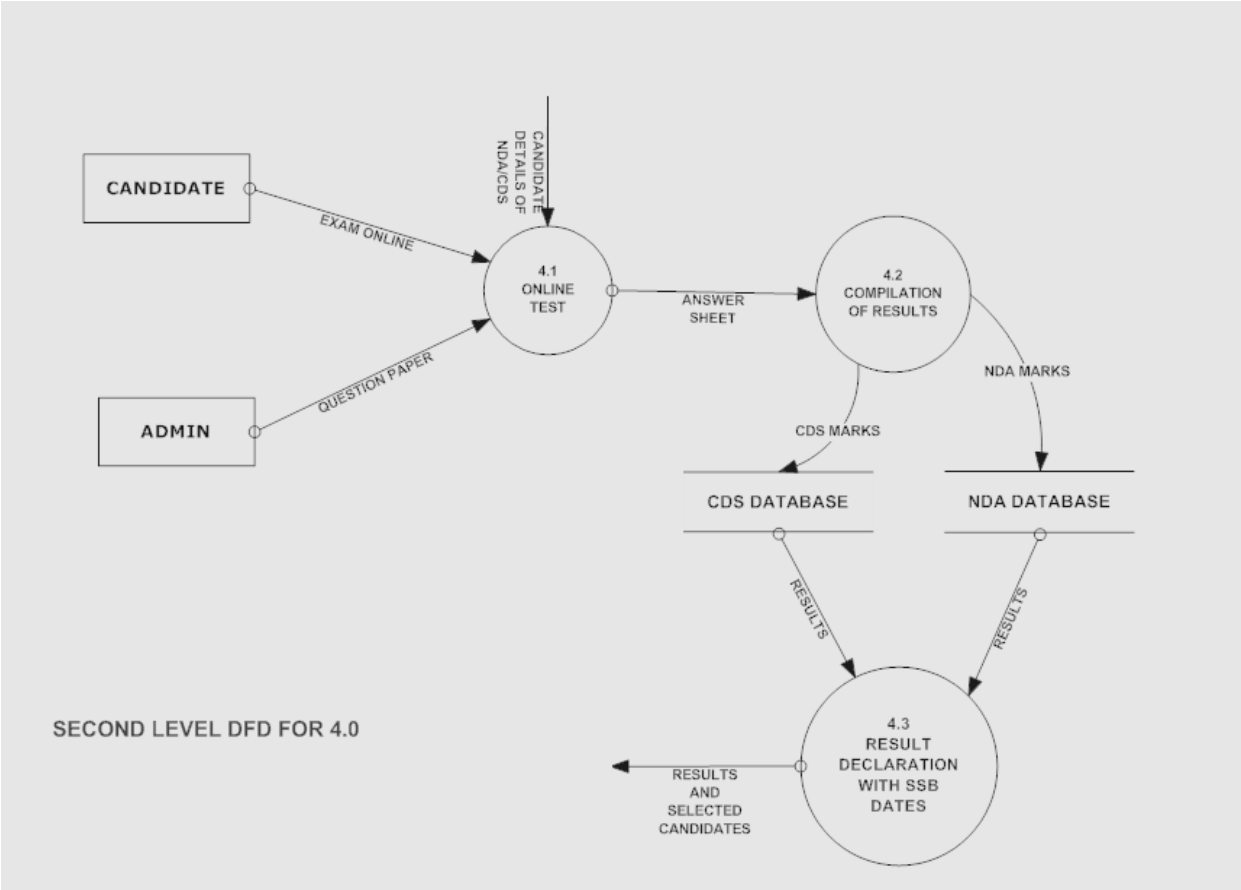


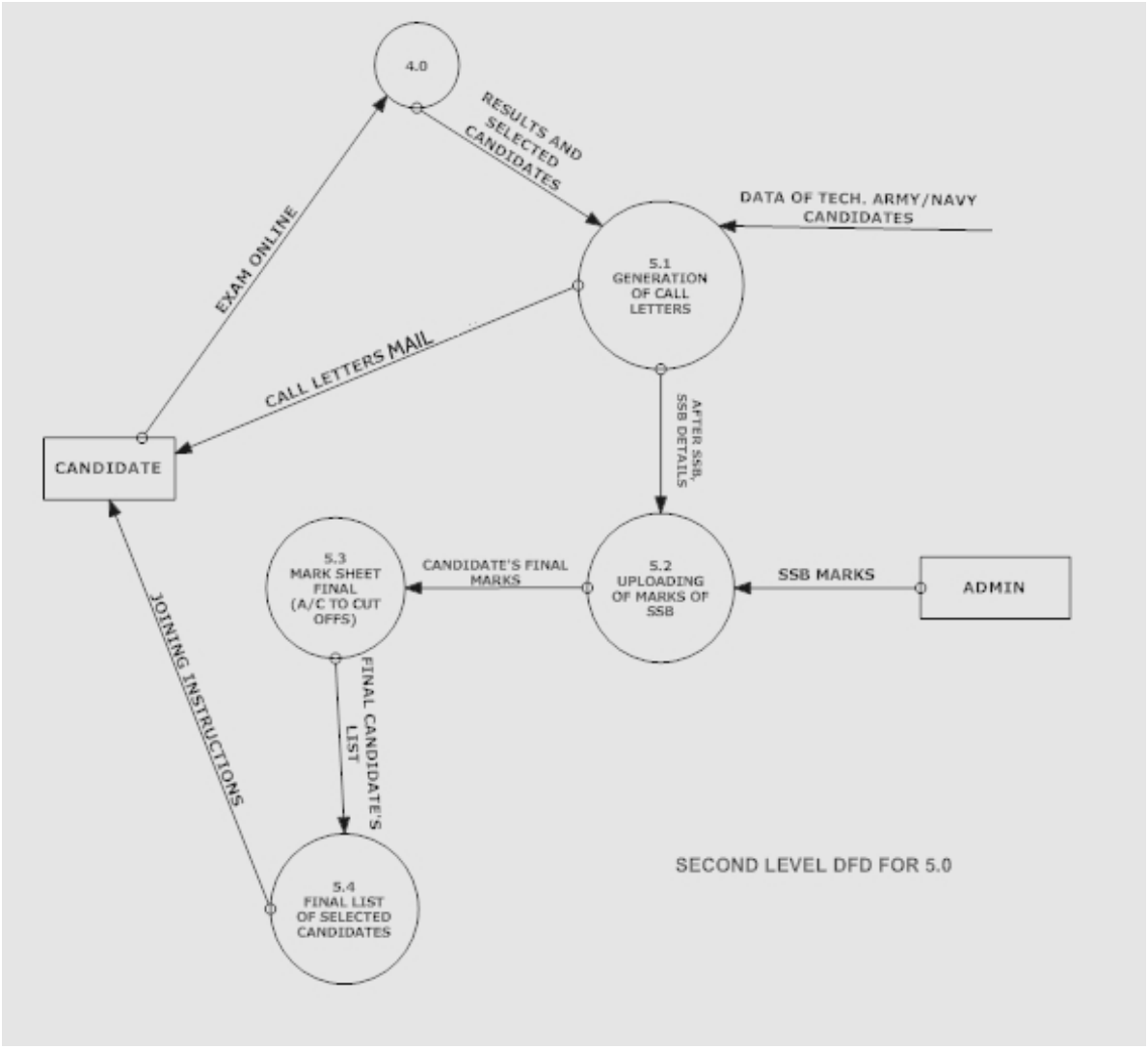
Second Level DFD For 3.0



Second Level DFD For 4.0



Second Level DFD For 5.0



c) Data Dictionary

LOG IN =Registration Id + Password

APPLICATION DETAILS = Name + Father's Name + DOB + AADHAR Card No. + (12th PCM Percentage) +Email + Address

ADMIT CARD DETAILS =Name + Registration Id + Roll No. + Centre Code + Exam Centre

CALL LETTERS =Name + Registration Id + Batch No. + Course + SSB Date + SSB Centre +SSB Instructions

RESULT AND SELECTED CANDIDATE =Written Marks + Name + Roll No.

JOINING INSTRUCTIONS =Name + Registration Id + Roll No. + Course + Place to Report + Reporting Date and Time + Instructions

Name =First name + (Middle Name) + (Last Name)

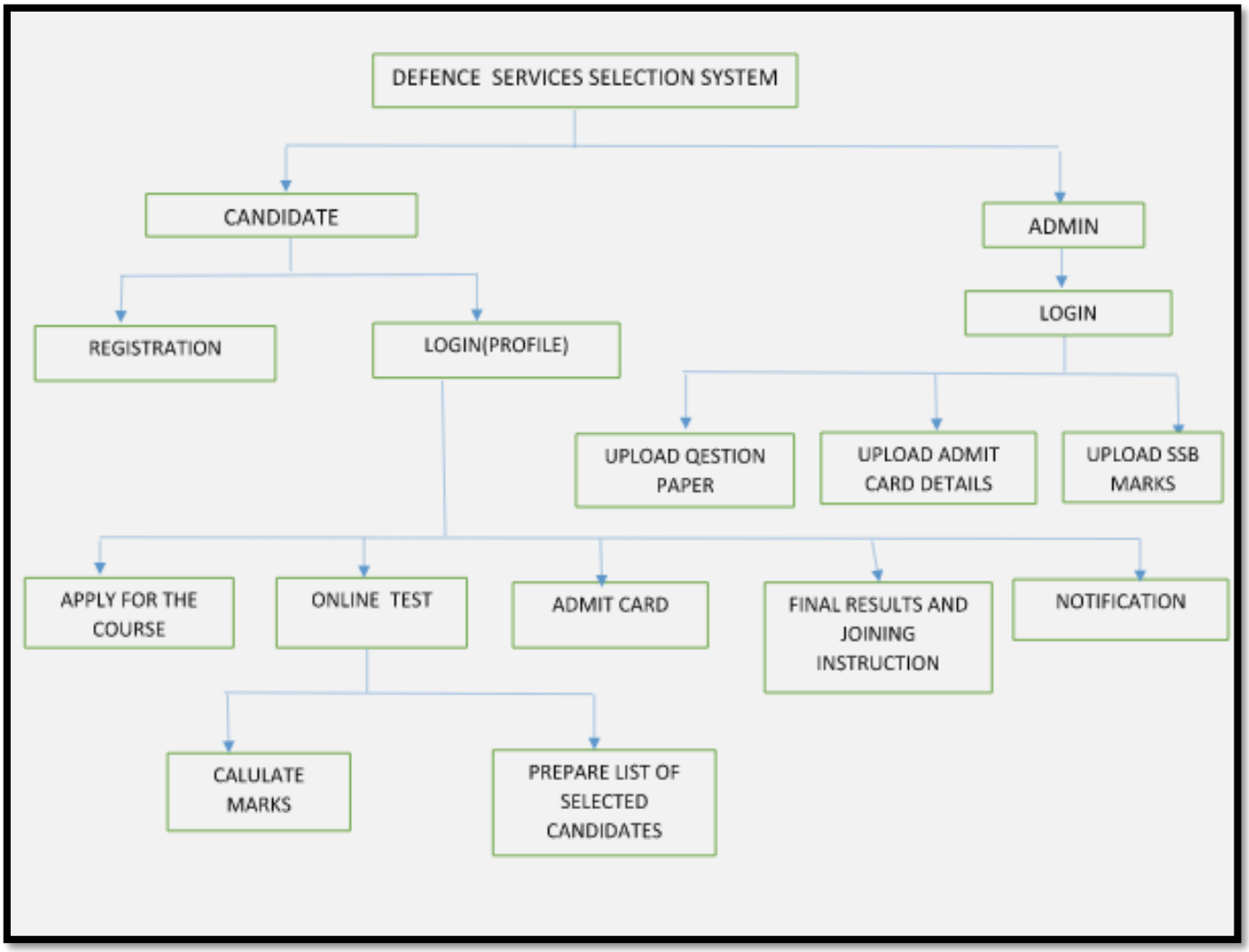
Address =House No. + (street/area) + City + State

Exam Centre =Centre name + Centre address + City + Pin code

SSB Centre =SSB Centre name + City + State +Pin code

3. DESIGN ENGINEERING

a) Architectural design



b) Data Design - Database Design

CANDIDATE DATABASE

TABLES

- LOG_IN TABLE

ATTRIBUTES	DATA TYPES	KEY SPECIFIED	DESCRIPTION
Reg_No	Varchar(20)	Primary key	Unique Registration no. for each candidate
Password	Varchar(16)	Not Null	Passwords corresponds to Registration No.
Email	Varchar(100)	Not Null, Unique	Email corresponds to Registration No.

- CANDIDATE_FORM TABLE

ATTRIBUTES	DATA TYPES	KEY SPECIFIED	DESCRIPTION
Reg_No	Varchar(20)	Primary key	Unique Registration no. for each candidate
Name	Varchar(50)	Not Null	Name of the candidate
F_Name	Varchar(50)	Not Null	Father's name of the candidate
DOB	Date	Not Null	Date of Birth of the candidate
PCM_PER	Number(5,3)	Not Null	Percentage in PCM in 12th class
AADHAR_NO	Number(12)	Not Null, Unique	Unique AADHAR no. for each candidate
Email	Varchar(100)	Not Null, Unique	Email for verification and to give account status
Eligibility	Boolean	Not Null	Give status for eligibility in any course
Phone_No	Number(10)	Not Null, Unique	Unique Phone no. For each candidate

- COURSES TABLE

ATTRIBUTES	DATA TYPES	KEY SPECIFIED	DESCRIPTION
Reg_No	Varchar(20)	Primary key	Unique Registration no. for each candidate
T_ARMY	Number(1)	Not Null	Attribute to store chances of course for each student
T_NAVY	Number(1)	Not Null	"
NDA	Number(1)	Not Null	"
CDS	Number(1)	Not Null	"

- PREV_RECORD TABLE

ATTRIBUTES	DATA TYPES	KEY SPECIFIED	DESCRIPTION
Reg_No	Varchar(20)	Primary key	Unique Registration no. for each candidate
SSB_Centre	Varchar(500)	Null	Previous centre details of SSB interviews of each candidate
SSB_Marks	Varchar(50)	Null	Previous marks obtained by candidate in SSB interviews
Batch_Number	Varchar(100)	Null	Previous batch numbers of SSB interview
NDA_Marks	Varchar(50)	Null	Previous NDA marks obtained by candidate in Entrance Exam
CDS_Marks	Varchar(50)	Null	Previous CDS marks obtained by candidate in Entrance Exam
Result	Varchar(500)	Null	Previous Results of candidates

NDA/CDS DATABASE

TABLES

- CANDIDATE_INF TABLE

ATTRIBUTES	DATA TYPES	KEY SPECIFIED	DESCRIPTION
Reg_No	Varchar(20)	Primary key	Unique Registration no. for each candidate
Name	Varchar(50)	Not Null	Name of the candidate
DOB	Date	Not Null	Date of Birth of the candidate
Payment_st	Boolean	Not Null	Payment status (Payee or not)
Pref_City	Varchar(20)	Not Null	Which city candidate would prefer for Entrance Exam

- ADMIT_CARD TABLE

ATTRIBUTES	DATA TYPES	KEY SPECIFIED	DESCRIPTION
Reg_No	Varchar(20)	Primary key	Unique Registration no. for each candidate
Roll_No	Varchar(50)	Not Null , Unique ,Foreign key	Unique Roll no. are required of entrance exam for candidates

C_CODE	Number(10)	Not Null, Foreign key	Centre code of entrance exam

EXAM_CENTRE TABLE

ATTRIBUTES	DATA TYPES	KEY SPECIFIED	DESCRIPTION
C_CODE	Number(10)	Primary key	Unique Centre codes
Cent_name	Varchar(50)	Not Null	Centre name corresponding to centre code
City	Varchar(20)	Not Null	City corresponding to centre

- MARKS TABLE

ATTRIBUTES	DATA TYPES	KEY SPECIFIED	DESCRIPTION
Reg_No	Varchar(20)	Primary key	Unique Registration no. for each candidate
Roll_No	Varchar(50)	Not Null, Unique	Unique Roll no. are required of entrance exam for candidates
GAT	Number(3)	Null	Present marks in General Ability Test out of 600
Mathematics	Number(3)	Null	Present marks in Mathematics out of 300
Cut_off	Number(3)	Not Null	Present cut off of the Entrance Exam
Result	Varchar(15)	Not Null	Result of the candidate (Qualified or not)

- SSB_INFO TABLE

ATTRIBUTES	DATA TYPES	KEY SPECIFIED	DESCRIPTION
Reg_No	Varchar(20)	Primary key	Unique Registration no. for each candidate
SSB_Cen	Varchar(50)	Not Null	Centre address for SSB interview
Marks	Number(4)	Null	Present marks in SSB interview (NDA/CDS marks + int. marks)/1800
Cut_off	Number(4)	Not Null	Cut off marks out of 1800
Batch_No	Number(10)	Null	Present batch no. in SSB interview
Result	Varchar(15)	Not Null	Result of the candidate

TECH ARMY/ TECH NAVY DATABASE

TABLES

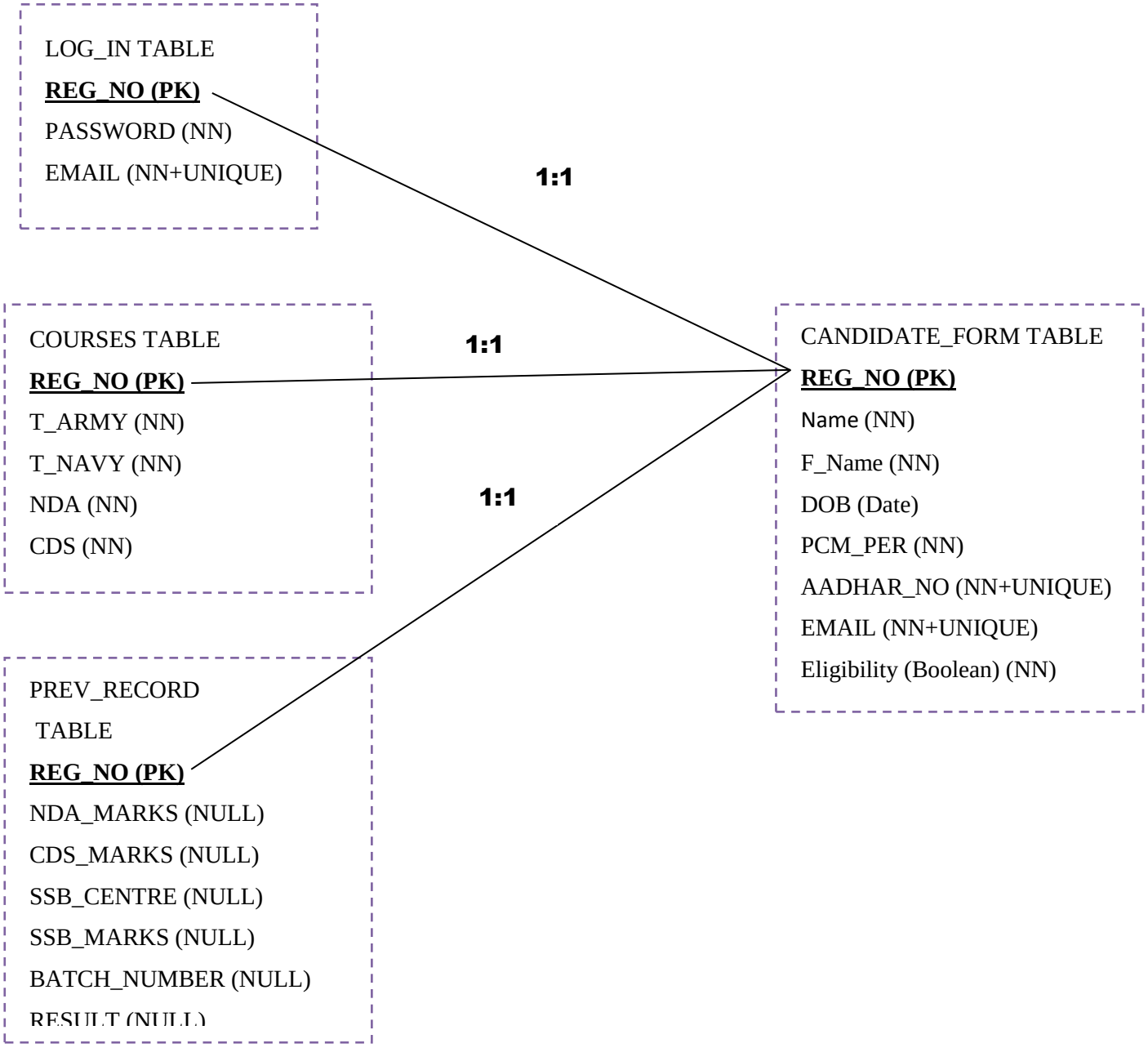
- CANDIDATE_INF TABLE

ATTRIBUTES	DATA TYPES	KEY SPECIFIED	DESCRIPTION
Reg_No	Varchar(20)	Primary key	Unique Registration no. for each candidate
Name	Varchar(50)	Not Null	Name of the candidate
DOB	Date	Not Null	Date of Birth of the candidate
Roll_12	Number(15)	Not Null, Unique	12th class roll no. of candidate
AADHAR_NO	Number(12)	Not Null, Unique	Email for verification and to give account status

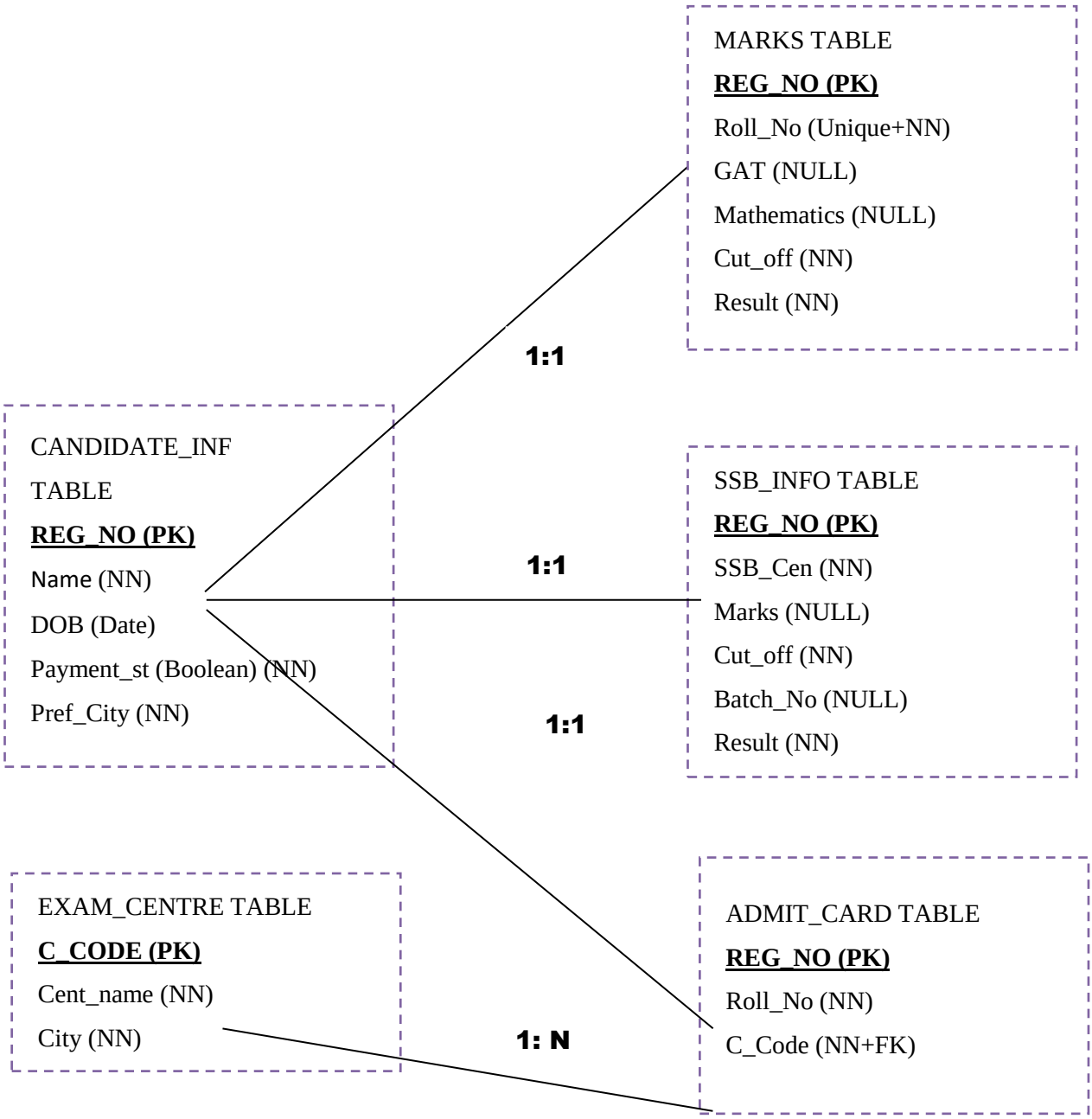
- SSB_INFO TABLE

ATTRIBUTES	DATA TYPES	KEY SPECIFIED	DESCRIPTION
Reg_No	Varchar(20)	Primary key	Unique Registration no. for each candidate
SSB_Cen	Varchar(50)	Not Null	Centre address for SSB interview
Marks	Number(4)	Null	Present marks in SSB interview
Cut_off	Number(4)	Not Null	Cut off marks
Batch_No	Number(10)	Null	Present batch no. in SSB interview
Result	Varchar(15)	Not Null	Result of the candidate

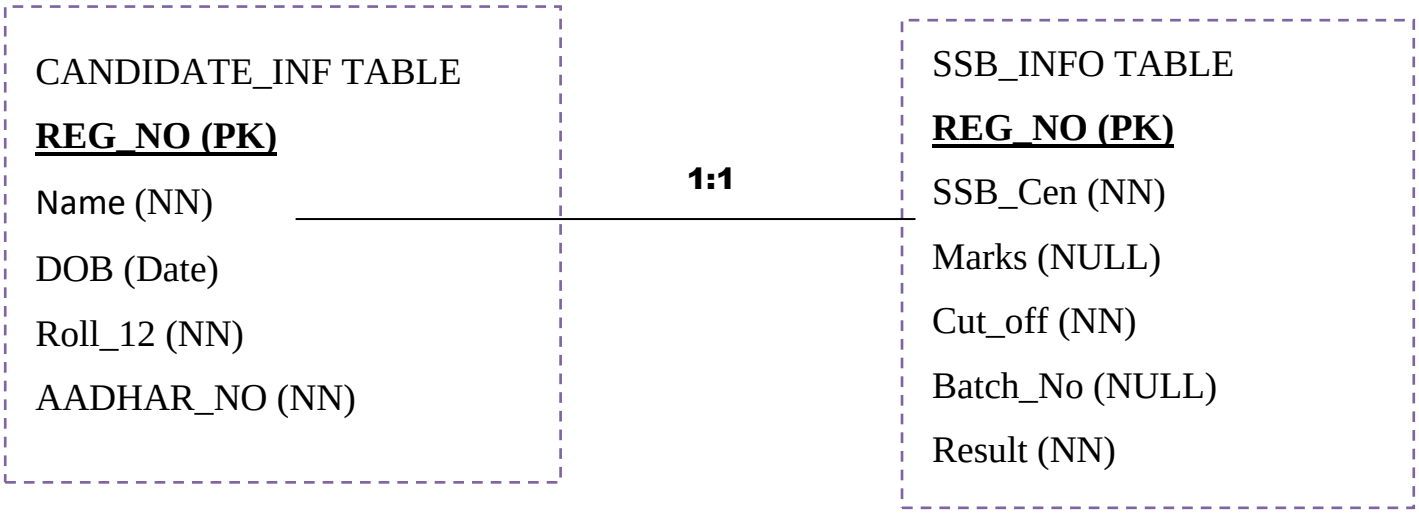
CANDIDATE DATABASE



NDA/CDS DATABASE



TECH ARMY/ TECH NAVY DATABASE



4. TESTING

a) Pseudo code or Algorithm

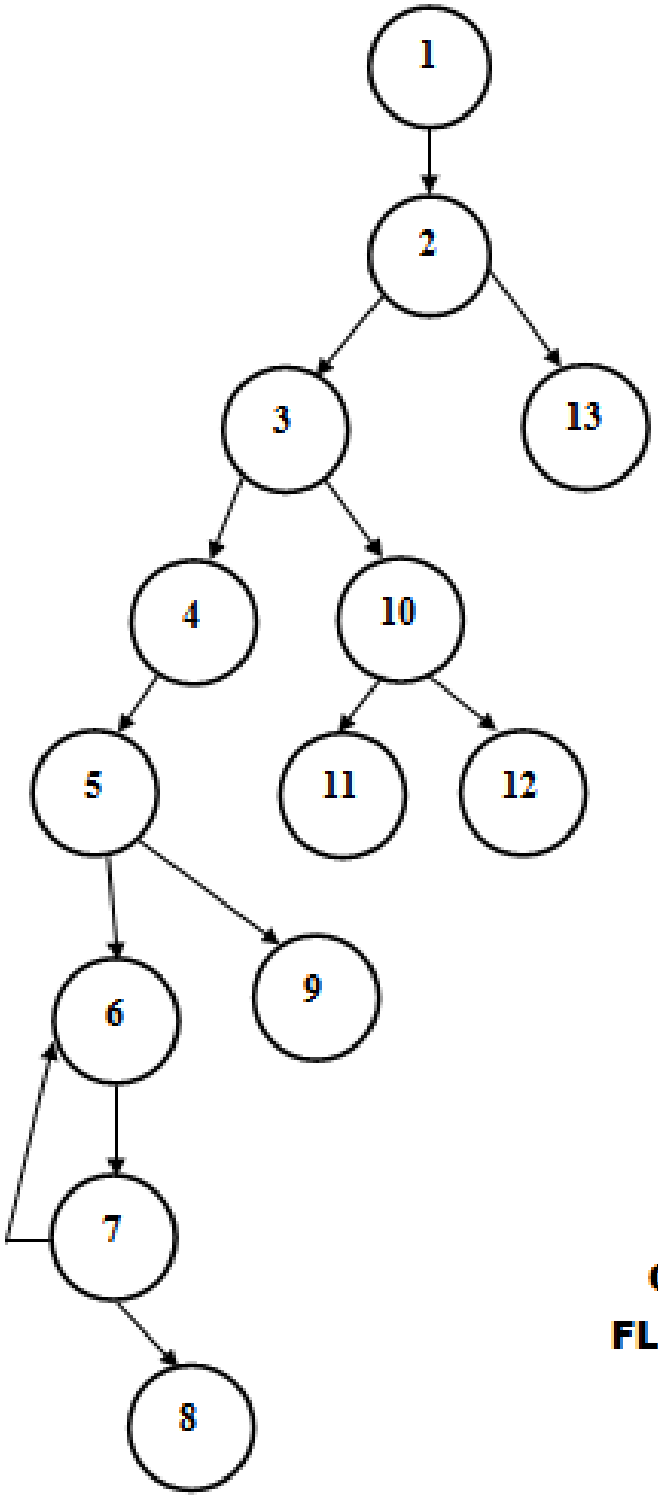
Application Process Module

```
1.  Apply for course
2.  If DOB is valid for Applied_course
3.      If Applied_course is NDA or CDS
4.          Data store in NDA/CDS database
5.          If Payment_st is not true
6.              While (payment! =Successful)
7.                  Payment window
8.              Data update in NDA/CDS database
                Print ("Registration for applied course is successful")
            Else
9.              Data update in NDA/CDS database
                Print ("Registration for applied course is successful")
        Else
10.         If Per_PCM is valid according to cut-offs
11.             Data store in Tech. Army/Tech. Navy database
                Print ("Registration for applied course is successful")
            Else
12.             Print ("You doesn't meet the cut-offs for this course")
    Else
```

13. Print ("You are not eligible for this course")

14. END

b) Control Flow Graph



CONTROL FLOW GRAPH