

# SRS DOCUMENT

## INTRODUCTION

**PROJECT TITLE: N Queens Game**

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### 1. ACKNOWLEDGEMENT:

We are given with an excellent opportunity to learn computers by our Institute under the guidance of the best professors in Computer Science of India Dr.D.B.Phatak and Dr.Supratik Chakraborty. He increased the field of our knowledge by indulging us in such a good project which requires a good knowledge of C++ language and graphics. Lessons by sir during The classes proved to be of great help, also the lecture videos helped us a lot. We learned great qualities like Professionalism, Team work, Self-Assessment, etc. which are sure to play an important role in our life. Last but not the least we would also like to thank our very helping TA Sadagopan who was always there to help us in case of any difficulty and to clear our doubts.

### 2. INTRODUCTION:

Chess composer Max Bezzel published the eight queen's puzzle in 1848. Franz Nauck published the first solutions in 1850. Nauck also extended the puzzle to the n-queens problem, with n queens on a chessboard of  $n \times n$  squares.

***The problem is to place 'n' number of queens on 'n'X'n' chessboard such that no queen threatens each other.***

### 3. FUNCTIONS USED:

The following are the various code intercepts for various input and output operations. This includes only the main functions that are used. Minor functions have been avoided and details about those functions have been given as comment lines in the program.

**#include <iostream>**

**#include <ctime>**

To manipulate dates and times .This library is used to calculate the time taken by user. “time1” is the time when user started the game & “time2” is the time when user completes the problem. Total time elapsed is the difference of time1 & time2.

**#include<simplecpp>**

This is a very useful & simple library which is used for graphic part of our game. It is used to create simple rectangles, circles, symbols & to give instructions to user.

Here are the list of programs which are included in the main program.

1. **bool checkifvalid(int n, int\*\* A)**-This function is used to determine that the queen is placed correctly or not.
2. **bool checkiftrue(int n, int\*\* A)**-This function is used to check that user completed the problem or not.
3. **bool togetsquare(int i, int j, int n, int\*\* A)**-This is the major function we have used .In this function we are trying to get correct square for “n” number of queens .We ensure that the square is correct by checking column by column & there is any mistake we track this by backtracking method.
4. **difftime**
5. **mktime**

#### **4. SYSTEM REQUIREMENTS:**

Linux/Windows Operating System.  
SIMPLECPP should be installed .

#### **5. FUTURESCOPE:**

In the future, people can improvise upon our project like they can keep additional constraints on the game. For example, the user may be asked to fill the square such that no two queens are in a straight line.