



**NAMIBIA UNIVERSITY**  
OF SCIENCE AND TECHNOLOGY

## Topic: **Phonebook Application**

**Group Leader**

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DSA Project

Group: 20

## Search Module

**Function:** SearchContact(String name)

**Purpose:** Searches for a contact by name and returns the contact details.

## Efficiency Analysis

**Efficiency Analysis:** Analyse the performance of the search function.

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## Pseudocode

### Search Module:

Start

FUNCTION SearchContact(phonebook, name)

    CURRENT = phonebook

    WHILE CURRENT IS NOT NULL DO

        IF CURRENT.name == name THEN

            RETURN CURRENT.phoneNumber

        END IF

        CURRENT = CURRENT.next

    END WHILE

    RETURN "Contact not found"

END FUNCTION

End

## Analyse the efficiency of your search Algorithm

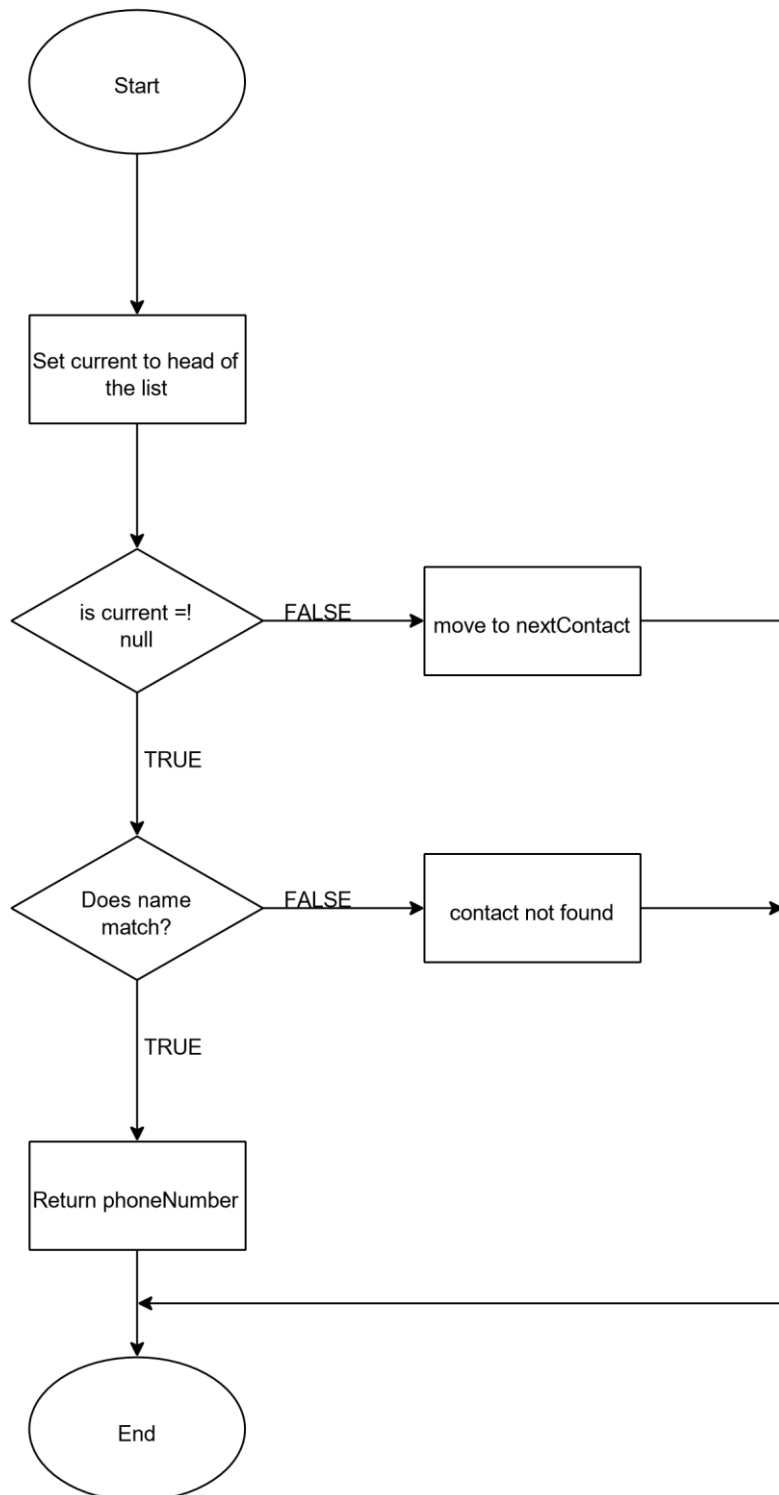
Start

```
FUNCTION AnalyzeSearchEfficiency(phonebook, name)
START_TIME = CURRENT_TIME()
    result = SearchContact(phonebook, name)
    END_TIME = CURRENT_TIME()
    TIME_TAKEN = END_TIME - START_TIME
    PRINT "Search result:", result
    PRINT "Time taken:", TIME_TAKEN
END FUNCTION
```

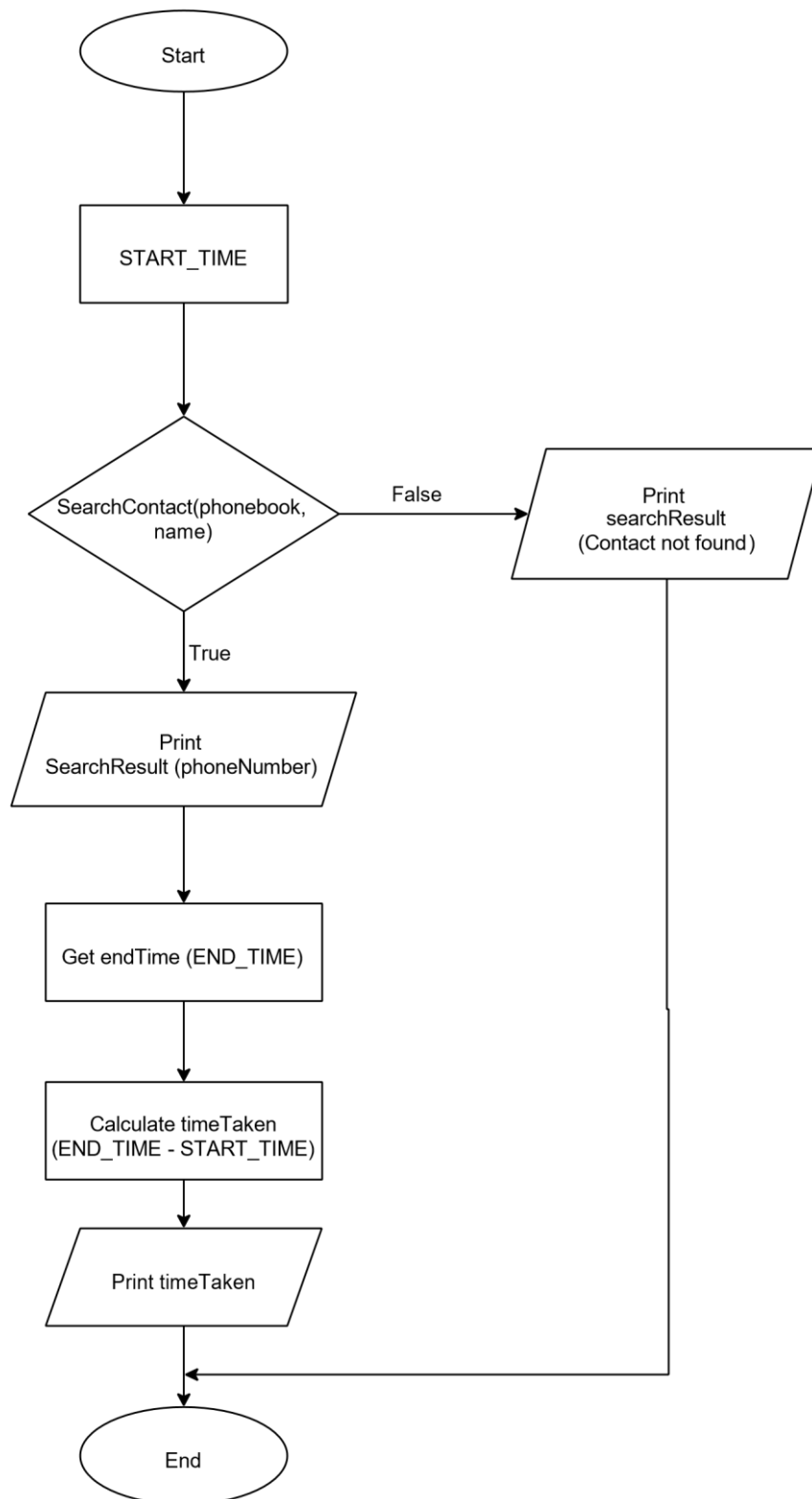
End

# Flowchart

## Search Module:



## Analyse the efficiency of your search Algorithm



## Code

```
private void cnSearchActionPerformed(java.awt.event.ActionEvent evt) {
String searchQuery = inputName.getText();

    // Database connection
    String url = "jdbc:mysql://localhost:3306/connector";
    String user = "root";
    String password = "6161586";

    try (Connection conn = DriverManager.getConnection(url, user, password)) {
        String sql = "SELECT * FROM contact WHERE Id LIKE ? OR firstName LIKE ?
OR lastName LIKE ? OR phoneNumber LIKE ?";

        try (PreparedStatement pstmt = conn.prepareStatement(sql)) {
            pstmt.setString(1, "%" + searchQuery + "%");
            pstmt.setString(2, "%" + searchQuery + "%");
            pstmt.setString(3, "%" + searchQuery + "%");
            pstmt.setString(4, "%" + searchQuery + "%");
            ResultSet rs = pstmt.executeQuery();

            StringBuilder results = new StringBuilder();
            while (rs.next()) {
                results

                    .append(", ID: ").append(rs.getString("Id"))
                    .append(", First Name: ").append(rs.getString("firstName"))
                    .append(", Last Name: ").append(rs.getString("lastName"))
                    .append(", Phone Number: ").append(rs.getString("phoneNumber"))
                    .append("\n");
            }

            if (results.length() > 0) {

                JOptionPane.showMessageDialog(this, results.toString());
            } else {

                JOptionPane.showMessageDialog(this, "No contacts found.");
            }
        }
    }
}
```

```
    }  
    } catch (SQLException ex) {  
        ex.printStackTrace();  
  
        JOptionPane.showMessageDialog(this, "Error searching contact: " +  
ex.getMessage());  
    }  
  
}
```