

Pseudocode for phonebook application:

START

// The contact below is an object that holds the contact details

// It contains attributes like name and phone number name

CONTACT

 name

 phone number

FUNCTION createContact(name, phoneNumber)

 contact.name = name

 contact.phonenumber = phoneNumber

 RETURN contact

ENDFUNCTION

NODE //Purpose is to store a contact

 contact

 nextNode

FUNCTION createNode(contact)

 node.contact = contact

```
node.nextNode = null
RETURN node
ENDFUNCTION

PHONEBOOK= headNode

FUNCTION createPhonebook()
    phonebook.headNode = null
    RETURN phonebook
ENDFUNCTION

FUNCTION addContact(phonebook, name, phoneNumber)
//function to add contacts to the phonebook
    newContact = createContact(name, phoneNumber)
    newNode = createNode(newContact)

    IF (phonebook.headNode = null) THEN
        phonebook.headNode = newNode
    ELSE
        currentNode = phonebook.headNode
        WHILE (currentNode.nextNode != null AND
currentNode.nextNode.contact.name < name)
```

```

        currentNode = currentNode.nextNode
    ENDWHILE

    newNode.nextNode = currentNode.nextNode
    currentNode.nextNode = newNode
ENDIF
ENDFUNCTION

FUNCTION findContact(phonebook, name) //This function
searches for a specific contact

    currentNode = phonebook.headNode
    WHILE (currentNode != null)
        IF (currentNode.contact.name == name) THEN
            RETURN currentNode.contact
        END IF
        currentNode = currentNode.nextNode
    END WHILE

    RETURN null //This means the contact is not found
END FUNCTION

```

```

FUNCTION removeContact(phonebook, name) //To delete a
contact in the phonebook

    IF (phonebook.headNode = null) THEN

```

```
    RETURN false //list is empty
ENDIF
```

```
IF (phonebook.headNode.contact.name == name) THEN
    phonebook.headNode = phonebook.headNode.nextNode
    RETURN true
ENDIF
```

```
currentNode = phonebook.headNode

WHILE (currentNode.nextNode != null AND
currentNode.nextNode.contact.name != name)
    currentNode = currentNode.nextNode
ENDWHILE
```

```
IF (currentNode.nextNode != null) THEN
    currentNode.nextNode =
currentNode.nextNode.nextNode

    RETURN true
ENDIF
```

```
RETURN false //The contact is not found contact
ENDFUNCTION
```

```
FUNCTION updateContact(phonebook, oldName, newName,  
newPhone) //This function allows you update a contact
```

```
    contact = findContact(phonebook, oldName)
```

```
    IF (contact != null) THEN
```

```
        contact.name = newName
```

```
        contact.phonenumber = newPhoneNummber
```

```
    ENDIF
```

```
ENDFUNCTION
```

```
FUNCTION listAllContacts(phonebook) // function for  
displaying all contacts
```

```
    contactsList = empty list
```

```
    currentNode = phonebook.headNode
```

```
    WHILE (currentNode != null)
```

```
        ADD currentNode.contact TO contactsList
```

```
        currentNode = currentNode.nextNode
```

```
    ENDWHILE
```

```
    RETURN contactsList
```

```
ENDFUNCTION
```

```
FUNCTION main()
```

```
phonebook = createPhonebook()
```

```
// The user can add, search, update, or delete contacts here.
```

```
ENDFUNCTION
```

```
END
```