IMPLEMENT A TO-DO LIST USING LINKED LIST

PROGRAM CODE:

```
#include <iostream>
#include <fstream>
#include <string>
using namespace std;
struct Task {
  string description;
  Task * next;
};
struct User {
  string Username;
  string Password;
  Task * taskHead;
  User * next;
}* head = NULL;
int nUsers = 0;
void saveData() {
  fstream file;
  file.open("users.csv", ios::out);
  if (file.is_open()) {
    for (User * tempU = head; tempU != NULL; tempU = tempU -> next) {
      file << tempU -> Username << "," << tempU -> Password << ",";
      Task * temp = tempU -> taskHead;
      while (temp != NULL) {
        file << temp -> description << ",";
        temp = temp -> next;
      }
      file << endl;
    }
  }
  file.close();
}
void loadData() {
  fstream file;
  file.open("users.csv", ios::in);
  if (file.is_open()) {
    if (!file.eof()) {
      string line;
      while (getline(file, line)) {
        string username, password, taskDesc;
        int i;
        for (i = 0; line[i] != ','; i++) {
          username = username + line[i];
        }
        for (i = i + 1; line[i] != ','; i++) {
          password = password + line[i];
        }
        User * user = new User;
        user -> Username = username;
        user -> Password = password;
        user -> taskHead = NULL;
        user -> next = NULL;
        while (line[i + 1] != '\0') {
          Task * newTask = new Task;
          newTask -> next = NULL;
          for (i = i + 1; line[i] != ','; i++) {
            newTask -> description = newTask -> description + line[i];
          }
          if (user -> taskHead == NULL) {
            user -> taskHead = newTask;
```

```
          } else {
            Task * temp = user -> taskHead;
            while (temp -> next != NULL) {
              temp = temp -> next;
            }
            temp -> next = newTask;
          }
        }
        if (head == NULL) {
          head = user;
        } else {
          User * temp = head;
          while (temp -> next != NULL) {
            temp = temp -> next;
          }
          temp -> next = user;
        }
      }
    }
    file.close();
  }
}
void registerUser() {
  string username, password;
  cout << "Enter username: ";
  cin >> username;
  cout << "Enter Password: ";
  cin >> password;
  User * newUser = new User;
  newUser -> Username = username;
  newUser -> Password = password;
  newUser -> taskHead = NULL;
  newUser -> next = NULL;
  if (head == NULL) {
    head = newUser;
  } else {
    User * temp = head;
    while (temp -> next != NULL) {
      temp = temp -> next;
    }
    temp -> next = newUser;
  }
  cout << "User Registered Successfully." << endl;
  saveData();
}
bool authUser(string username, string password) {
  for (User * tempU = head; tempU != NULL; tempU = tempU -> next) {
    if (tempU -> Username == username && tempU -> Password == password) {
      return true;
    }
  }
  return false;
}
void addTask(string username, string taskdesc) {
  for (User * tempU = head; tempU != NULL; tempU = tempU -> next) {
    if (tempU -> Username == username) {
      Task * newTask = new Task;
      newTask -> description = taskdesc;
      newTask -> next = NULL;
      if (tempU -> taskHead == NULL) {
        tempU -> taskHead = newTask;
      } else {
```

```
        Task * temp = tempU -> taskHead;
        while (temp -> next != NULL) {
          temp = temp -> next;
        }
        temp -> next = newTask;
      }
      saveData();
      cout << "Task added Successfully." << endl;
      return;
    } else {
      cout << "User not found" << endl;
    }
  }
}
void display(string username) {
  if (head == NULL) {
    cout << "Directory is empty." << endl;
  } else {
    for (User * tempU = head; tempU != NULL; tempU = tempU -> next) {
      if (tempU -> Username == username) {
        int j = 1;
        if (tempU -> taskHead != NULL) {
          for (Task * temp = tempU -> taskHead; temp != NULL; temp = temp -> next) {
            cout << "Task " << j << ": " << temp -> description << endl;
            j++;
          }
        } else {
          cout << "No Available Task." << endl;
          break;
        }
        return;
      }
    }
  }
}
void displayCurrent(string username) {
  if (head == NULL) {
    cout << "Directory is empty." << endl;
  } else {
    for (User * tempU = head; tempU != NULL; tempU = tempU -> next) {
      if (tempU -> Username == username) {
        if (tempU -> taskHead == NULL) {
          cout << "No Available Tasks." << endl;
          break;
        } else {
          cout << "Current Task: " << tempU -> taskHead -> description << endl;
        }
        return;
      }
    }
  }
}
void markDone(string username) {
  if (head == NULL) {
    cout << "Directory is empty." << endl;
  } else {
    for (User * tempU = head; tempU != NULL; tempU = tempU -> next) {
      if (tempU -> Username == username) {
        if (tempU -> taskHead == NULL) {
          cout << "No Task Available to mark as done." << endl;
          break;
        } else {
```

```
          cout << "Current Task: " << tempU -> taskHead -> description << " -> marked as Done."
<< endl;
          tempU -> taskHead = (tempU -> taskHead) -> next;
          cout << "Done";
          saveData();
        }
        return;
      }
    }
  }
}
void exportList(string username) {
  fstream file;
  file.open(username + ".txt", ios::out);
  if (file.is_open()) {
    file << "TO-DO LIST of " << username << endl;
    for (User * tempU = head; tempU != NULL; tempU = tempU -> next) {
      if (tempU -> Username == username) {
        int j = 1;
        for (Task * temp = tempU -> taskHead; temp != NULL; temp = temp -> next) {
          file << "Task " << j << ": " << temp -> description << endl;
          j++;
        }
        cout << "File Exported Successfully : " << username + ".txt" << endl;
        file.close();
        return;
      }
    }
  }
}
void changePassword(string username, string password) {
  for (User * tempU = head; tempU != NULL; tempU = tempU -> next) {
    if (tempU -> Username == username) {
      tempU -> Password = password;
      saveData();
      break;
    }
  }
  return;
}
int main() {
  loadData();
  int choice;
  string username, password, taskdescription;
  bool loggedIn = false;
  cout << "SKILL BASED MICRO PROJECT" << endl <<
    "TO-DO LIST" << endl <<
    "AKSHARA RATHORE (0901AD231008)" << endl <<
    "VAIBHAV SHARMA (0901AD231069)" <<
    endl;
  while (1) {
    cout << endl <<
      "1. Login" << endl <<
      "2. Register" << endl <<
      "3. Exit" << endl <<
      "Enter your choice: ";
    cin >> choice;
    switch (choice) {
    case 1: {
      cout << "Enter username: ";
      cin >> username;
      cout << "Enter Password: ";
```

```
      cin >> password;
      if (authUser(username, password)) {
        loggedIn = true;
        cout << "Logged in Successfully." << endl;
        cout << endl <<
          "Welcome " << username << endl;
      } else {
        cout << "Invalid username or password." << endl;
      }
    }
    break;
    case 2:
      registerUser();
      break;
    case 3: {
      cout << endl <<
        "SKILL BASED MICRO PROJECT BY: " << endl <<
        "AKSHARA RATHORE (0901AD231008)" << endl <<
        "VAIBHAV SHARMA (0901AD231069)" << endl <<
        endl <<
        "PROGRAM EXITED!!";
    }
    return 0;
    break;
    }
    while (loggedIn) {
      int ch;
      cout << endl <<
        "1. Add Task" << endl <<
        "2. Display Tasks" << endl <<
        "3. Display current task" << endl <<
        "4. Mark current task as done" << endl <<
        "5. Export To-Do List" << endl <<
        "6. Change Password" << endl <<
        "7. Logout" << endl <<
        "Enter choice: ";
      cin >> ch;
      switch (ch) {
      case 1: {
        cout << "Enter Task Description: ";
        cin.ignore();
        getline(cin, taskdescription);
        addTask(username, taskdescription);
      }
      break;
      case 2:
        display(username);
        break;
      case 3:
        displayCurrent(username);
        break;
      case 4:
        markDone(username);
        break;
      case 5:
        exportList(username);
        break;
      case 6: {
        string pass;
        cout << "Enter old password: ";
        cin >> pass;
        if (authUser(username, pass)) {
```

```
          cout << "Enter new password: ";
          cin >> password;
          changePassword(username, password);
          cout << "Password changed successfully." << endl;
        } else {
          cout << "Invalid Password." << endl;
        }
      }
      break;
      case 7:
        loggedIn = false;
        cout << "Logged out successfully." << endl;
        break;
      }
    }
  }
  return 0;
}
```

OUTPUT:

```
SKILL BASED MICRO PROJECT
PS A:\DSA AKSHARA RATHORE (08) & VAIBHAV SHARMA(69)> .\MicroProject
SKILL BASED MICRO PROJECT
TO-DO LIST
AKSHARA RATHORE (0901AD231008)
VAIBHAV SHARMA (0901AD231069)

1. Login
2. Register
3. Exit
Enter your choice: 2
Enter username: Akshara
Enter Password: 23102004
User Registered Successfully.

1. Login
2. Register
3. Exit
Enter your choice: 1
Enter username: Akshara
Enter Password: 23102004
Logged in Successfully.

Welcome Akshara

1. Add Task
2. Display Tasks
3. Display current task
4. Mark current task as done
5. Export To-Do List
6. Change Password
7. Logout
Enter choice: 1
Enter Task Description: Complete DSA Lab File
Task added Successfully.

1. Add Task
2. Display Tasks
3. Display current task
4. Mark current task as done
5. Export To-Do List
6. Change Password
7. Logout
Enter choice: 1
Enter Task Description: OOPs Assignment
Task added Successfully.

1. Add Task
2. Display Tasks
3. Display current task
4. Mark current task as done
5. Export To-Do List
6. Change Password
7. Logout
```

```
Enter choice: 1
Enter Task Description: OS numerical solve
Task added Successfully.

1. Add Task
2. Display Tasks
3. Display current task
4. Mark current task as done
5. Export To-Do List
6. Change Password
7. Logout
Enter choice: 1
Enter Task Description: MCA quiz and assignment
Task added Successfully.

1. Add Task
2. Display Tasks
3. Display current task
4. Mark current task as done
5. Export To-Do List
6. Change Password
7. Logout
Enter choice: 1
Enter Task Description: Chemistry Polymers
Task added Successfully.
```

```
1. Add Task
2. Display Tasks
3. Display current task
4. Mark current task as done
5. Export To-Do List
6. Change Password
7. Logout
Enter choice: 1
Enter Task Description: Discrete Structures Doubts
Task added Successfully.

1. Add Task
2. Display Tasks
3. Display current task
4. Mark current task as done
5. Export To-Do List
6. Change Password
7. Logout
Enter choice: 2
Task 1: Complete DSA Lab File
Task 2: OOPs Assignment
Task 3: OS numerical solve
Task 4: MCA quiz and assignment
Task 5: Chemistry Polymers
Task 6: Discrete Structures Doubts
```

```
1. Add Task
2. Display Tasks
3. Display current task
4. Mark current task as done
5. Export To-Do List
6. Change Password
7. Logout
Enter choice: 3
Current Task: Complete DSA Lab File

1. Add Task
2. Display Tasks
3. Display current task
4. Mark current task as done
5. Export To-Do List
6. Change Password
7. Logout
Enter choice: 5
File Exported Successfully : Akshara.txt

1. Add Task
2. Display Tasks
3. Display current task
4. Mark current task as done
5. Export To-Do List
6. Change Password
7. Logout
Enter choice: 4
Current Task: Complete DSA Lab File -> marked as Done.
Done
1. Add Task
2. Display Tasks
3. Display current task
4. Mark current task as done
5. Export To-Do List
6. Change Password
7. Logout
Enter choice: 2
Task 1: OOPs Assignment
Task 2: OS numerical solve
Task 3: MCA quiz and assignment
Task 4: Chemistry Polymers
Task 5: Discrete Structures Doubts

1. Add Task
2. Display Tasks
3. Display current task
4. Mark current task as done
5. Export To-Do List
6. Change Password
7. Logout
Enter choice: 3
Current Task: OOPs Assignment
```

```
1. Add Task
2. Display Tasks
3. Display current task
4. Mark current task as done
5. Export To-Do List
6. Change Password
7. Logout
Enter choice: 6
Enter old password: 23102004
Enter new password: 03072004
Password changed successfully.

1. Add Task
2. Display Tasks
3. Display current task
4. Mark current task as done
5. Export To-Do List
6. Change Password
7. Logout
Enter choice: 7
Logged out successfully.

1. Login
2. Register
3. Exit
Enter your choice: 1
Enter username: Akshara
Enter Password: 23102004
Invalid username or password.

1. Login
2. Register
3. Exit
Enter your choice: 1
Enter username: Akshara
Enter Password: 03072004
Logged in Successfully.

Welcome Akshara

1. Add Task
2. Display Tasks
3. Display current task
4. Mark current task as done
5. Export To-Do List
6. Change Password
7. Logout
Enter choice: 2
Task 1: OOPs Assignment
Task 2: OS numerical solve
Task 3: MCA quiz and assignment
Task 4: Chemistry Polymers
Task 5: Discrete Structures Doubts
```

```
1. Add Task
2. Display Tasks
3. Display current task
4. Mark current task as done
5. Export To-Do List
6. Change Password
7. Logout
Enter choice: 7
Logged out successfully.

1. Login
2. Register
3. Exit
Enter your choice: 2
Enter username: Vaibhav
Enter Password: 06042024
User Registered Successfully.
```

```
1. Login
2. Register
3. Exit
Enter your choice: 3

SKILL BASED MICRO PROJECT BY:
AKSHARA RATHORE (0901AD231008)
VAIBHAV SHARMA (0901AD231069)

PROGRAM EXITED!!
PS A:\DSA AKSHARA RATHORE (08) & VAIBHAV SHARMA(69)>
```

```
PS A:\DSA AKSHARA RATHORE (08) & VAIBHAV SHARMA(69)> .\MicroProject
SKILL BASED MICRO PROJECT
TO-DO LIST
AKSHARA RATHORE (0901AD231008)
VAIBHAV SHARMA (0901AD231069)

1. Login
2. Register
3. Exit
Enter your choice: 1
Enter username: Vaibhav
Enter Password: 06042024
Logged in Successfully.

Welcome Vaibhav

1. Add Task
2. Display Tasks
3. Display current task
4. Mark current task as done
5. Export To-Do List
6. Change Password
7. Logout
Enter choice: 1
Enter Task Description: DSA SKILL BASED File
User not found
Task added Successfully.
```

```
1. Add Task
2. Display Tasks
3. Display current task
4. Mark current task as done
5. Export To-Do List
6. Change Password
7. Logout
Enter choice: 1
Enter Task Description: Study MCST
User not found
Task added Successfully.

1. Add Task
2. Display Tasks
3. Display current task
4. Mark current task as done
5. Export To-Do List
6. Change Password
7. Logout
Enter choice: 1
Enter Task Description: Go to market
User not found
Task added Successfully.

1. Add Task
2. Display Tasks
3. Display current task
4. Mark current task as done
5. Export To-Do List
6. Change Password
7. Logout
Enter choice: 1
Enter Task Description: Read book
User not found
Task added Successfully.

1. Add Task
2. Display Tasks
3. Display current task
4. Mark current task as done
5. Export To-Do List
6. Change Password
7. Logout
Enter choice: 2
Task 1: DSA SKILL BASED File
Task 2: Study MCST
Task 3: Go to market
Task 4: Read book

1. Add Task
2. Display Tasks
3. Display current task
4. Mark current task as done
5. Export To-Do List
```

```
6. Change Password
7. Logout
Enter choice: 3
Current Task: DSA SKILL BASED File

1. Add Task
2. Display Tasks
3. Display current task
4. Mark current task as done
5. Export To-Do List
6. Change Password
7. Logout
Enter choice: 5
File Exported Successfully : Vaibhav.txt

1. Add Task
2. Display Tasks
3. Display current task
4. Mark current task as done
5. Export To-Do List
6. Change Password
7. Logout
Enter choice: 4
Current Task: DSA SKILL BASED File -> marked as Done.
Done
1. Add Task
2. Display Tasks
3. Display current task
4. Mark current task as done
5. Export To-Do List
6. Change Password
7. Logout
Enter choice: 4
Current Task: Study MCST -> marked as Done.
Done
1. Add Task
2. Display Tasks
3. Display current task
4. Mark current task as done
5. Export To-Do List
6. Change Password
7. Logout
Enter choice: 2
Task 1: Go to market
Task 2: Read book

1. Add Task
2. Display Tasks
3. Display current task
4. Mark current task as done
5. Export To-Do List
6. Change Password
7. Logout
Enter choice: 3
```

```
Current Task: Go to market

1. Add Task
2. Display Tasks
3. Display current task
4. Mark current task as done
5. Export To-Do List
6. Change Password
7. Logout
Enter choice: 7
Logged out successfully.

1. Login
2. Register
3. Exit
Enter your choice: 1
Enter username: Akshara
Enter Password: 03072004
Logged in Successfully.

Welcome Akshara

1. Add Task
2. Display Tasks
3. Display current task
4. Mark current task as done
5. Export To-Do List
6. Change Password
7. Logout
Enter choice: 3
Current Task: OOPs Assignment

1. Add Task
2. Display Tasks
3. Display current task
4. Mark current task as done
5. Export To-Do List
6. Change Password
7. Logout
Enter choice: 4
Current Task: OOPs Assignment -> marked as Done.
Done
1. Add Task
2. Display Tasks
3. Display current task
4. Mark current task as done
5. Export To-Do List
6. Change Password
7. Logout
Enter choice: 3
Current Task: OS numerical solve

1. Add Task
2. Display Tasks
```

```
3. Display current task
4. Mark current task as done
5. Export To-Do List
6. Change Password
7. Logout
Enter choice: 2
Task 1: OS numerical solve
Task 2: MCA quiz and assignment
Task 3: Chemistry Polymers
Task 4: Discrete Structures Doubts

1. Add Task
2. Display Tasks
3. Display current task
4. Mark current task as done
5. Export To-Do List
6. Change Password
7. Logout
Enter choice: 7
Logged out successfully.
```

```
1. Login
2. Register
3. Exit
Enter your choice: 3

SKILL BASED MICRO PROJECT BY:
AKSHARA RATHORE (0901AD231008)
VAIBHAV SHARMA (0901AD231069)

PROGRAM EXITED!!
PS A:\DSA AKSHARA RATHORE (08) & VAIBHAV SHARMA(69)>
```

users.csv

```
1  Akshara,03072004,OS numerical solve,MCA quiz and assignment,Chemistry Polymers,Discrete Structures Doubts,
2  Vaibhav,06042024,Go to market,Read book,
3
```

Akshara.txt

```
1   TO-DO LIST of Akshara
2   Task 1: Complete DSA Lab File
3   Task 2: OOPs Assignment
4   Task 3: OS numerical solve
5   Task 4: MCA quiz and assignment
6   Task 5: Chemistry Polymers
7   Task 6: Discrete Structures Doubts
8
```

Vaibhav.txt

```
1   TO-DO LIST of Vaibhav
2   Task 1: DSA SKILL BASED File
3   Task 2: Study MCST
4   Task 3: Go to market
5   Task 4: Read book
6
```