



**Universiti
Malaysia
PAHANG**

Engineering • Technology • Creativity

DCS2103 – DATA STRUCTURE & ALGORITHM

SEMESTER 1 -2013/2014

MINI PROJECT TITLE

STAFF ATTENDANCE

GROUP MEMBERS:

- | | |
|-------------------------|----------------|
| 1. AHMAD SOLEHIN | CC11379 |
| 2. AMERULLAH | CC11251 |

LECTURER:

SITI NORMAZIAH IHSAN

TOPIC AND INTRODUCTION

In this mini project, we are considering one out of the nine chapters from DCS 2103 Data Structure & Algorithms. The binary tree is a useful data structure for rapidly storing sorted data and rapidly retrieving stored data.

1. BINARY TREES

a. RECURSION

- Recursive take more storage and time than the iterative version.
- To display all data from staff attendance system by using Inorder Traversal.

b. STRUCTURE (Records)

- Can collect the data of the staff attendance.
- Each field of data can be store and manipulate in order to process large amount of similar data.

c. LINKED LIST

- Typically arrangement of data that record from the structure.
- Appropriate use when the structures are large or need to hold large records.
- Flexibility is needed also during insertion, deletions and reordering of elements in staff attendance system.
- Can also using for delete or insert the data to the staff attendance system.

d. BINARY SEARCH TREE

- Binary search tree is much important during the checking for status in staff attendance records that save in binary tree.
- It is important because the system may be stored a lot of data in the system:
 - The data maybe large and take large amount of time to accomplish the task.
 - For admin accessing the staff information quickly.
 - The searching is done recursively until the key value is found.

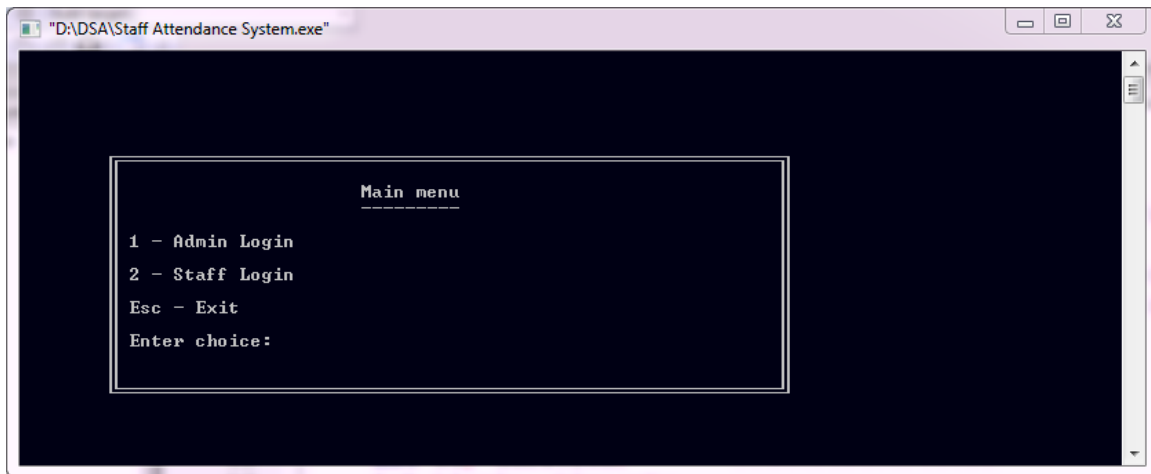
e. INORDER TRAVERSAL

- Inorder traversal is a part binary tree.
- The data will be shown ascending.
- Starting from smallest value of staff id to the bigger value.
- It is also improve the time of access the data.

f. SORTING

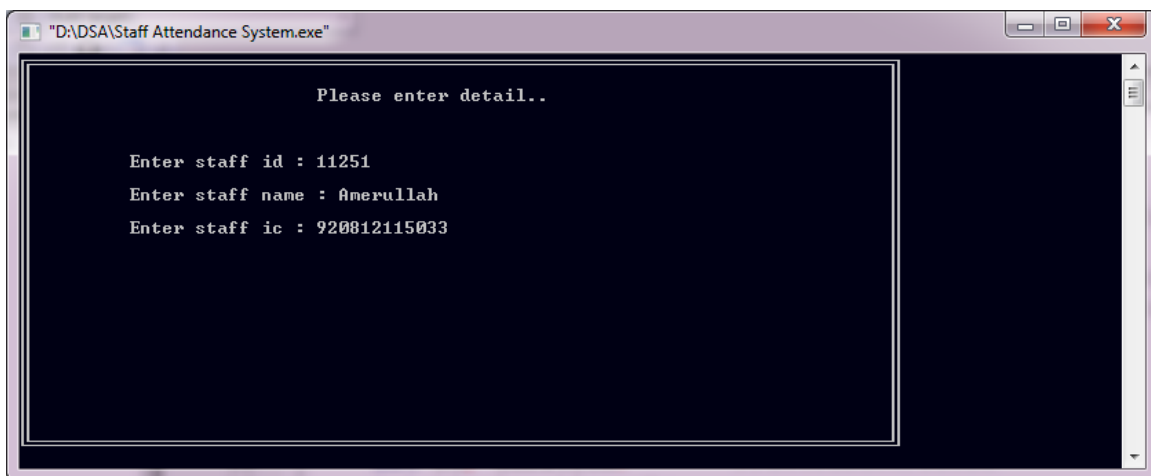
- Sorting is automatically done in binary tree when staff enter the input in staff attendance system.
- It is also improve the time of access the data.
- Without sorting, it will take a longer time to access the information of the staff attendance system in a large database

OUTPUT



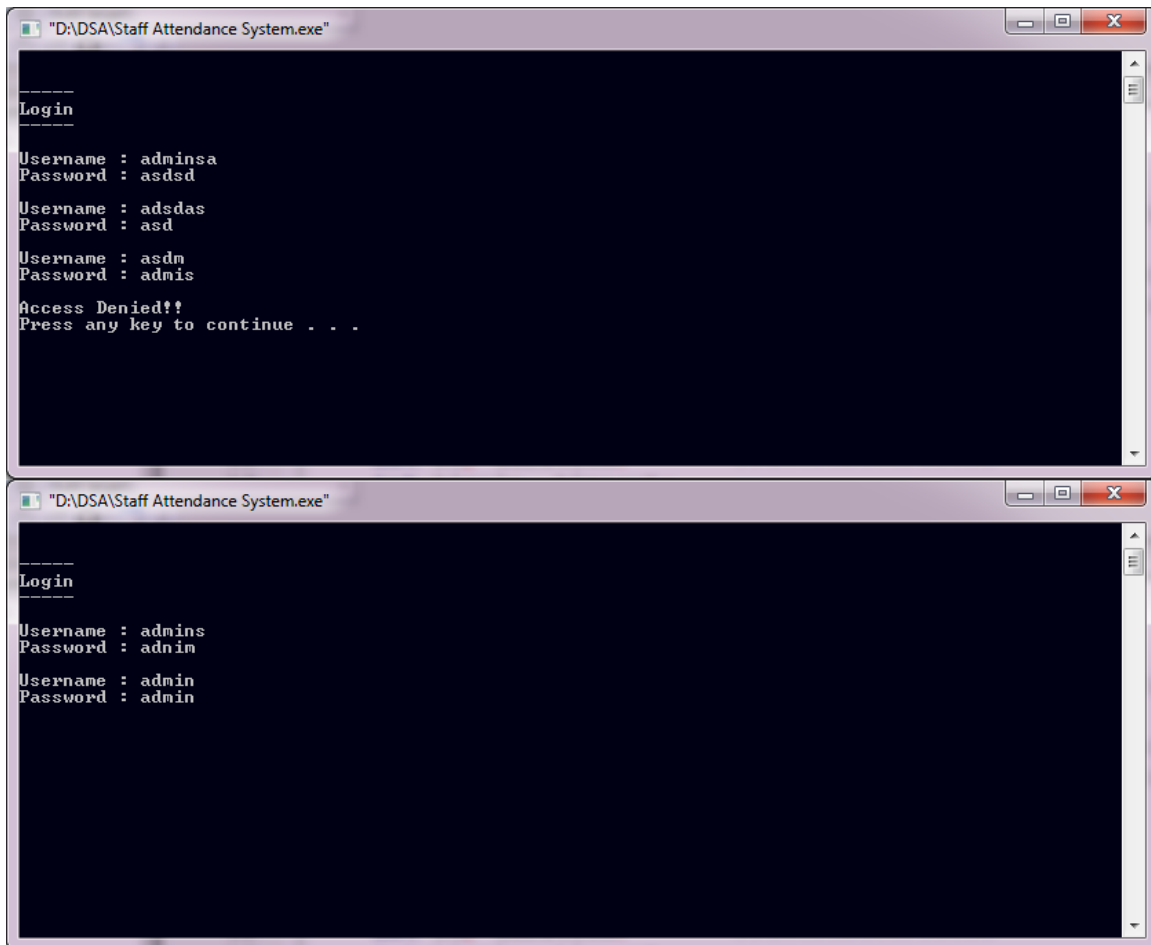
Homepage

- ✓ Have 3 options ('1' for Admin Login, '2' for Staff Login, 'Esc' for Exit)
- ✓ The system scan for the char input only.



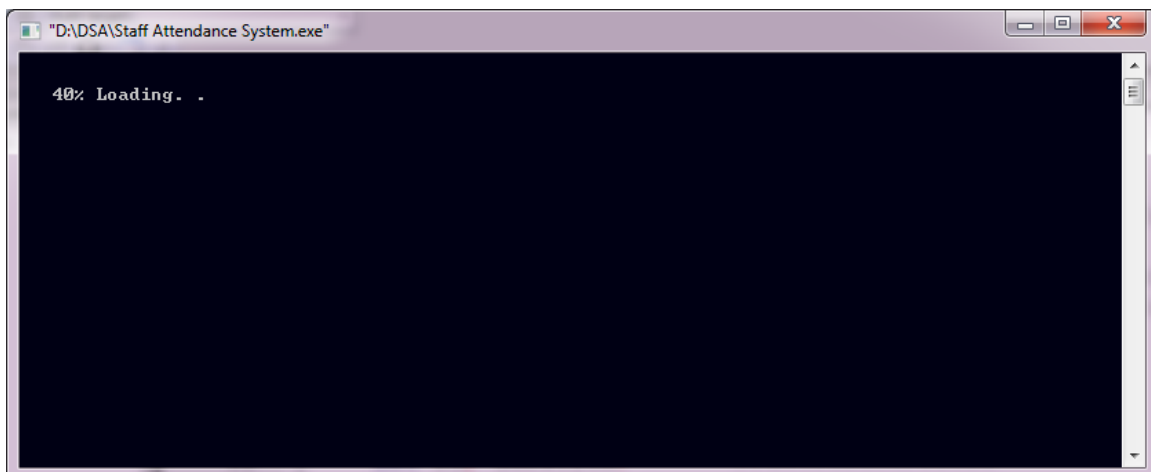
STAFF LOGIN PAGE

- ✓ Staff required to enter staff id.
- ✓ After user key in the staff id, system will search the staff data is exist or not.
- ✓ If staff data has found, the timeout and duration will be update.
- ✓ If staff data has not found, the system prompt staff to enter staff name and staff ic.
- ✓ The system automatically records the time for the timein and timeout.



ADMIN LOGIN PAGE

- ✓ Two screenshot in above is admin login page.
- ✓ Admin must enter the true username and password.
- ✓ System will be loop for any incorrect of username and password.
- ✓ For example, we use 'admin' as username and 'admin' as a password.



LOADING

- ✓ This page will show when admin enter the correct username and password

```
"D:\DSA\Staff Attendance System.exe"

Thu Jan 02 08:47:54 2014

      STAFF ATTENDANCE SYSTEM

l - List all staff
d - Delete a staff
s - Search a staff
p - Print staff data
x - Exit

Enter choice: l

      All Staff Data..

Id          Ic          Time in   Time out   Duration   Status   Name
-----
11251      920012115033      045       045 0       Bad..      Amerullah

Press any key to continue . . .
```

LIST ALL STAFF

- ✓ This page have 5 options ('l' for list of staff, 'd' for delete a staff, 's' for search a staff, 'p' for print staff data and 'x' for exit).
- ✓ Enter choice: l
- ✓ All of staff data will be show in the list.

```
"D:\DSA\Staff Attendance System.exe"

Thu Jan 02 08:49:20 2014

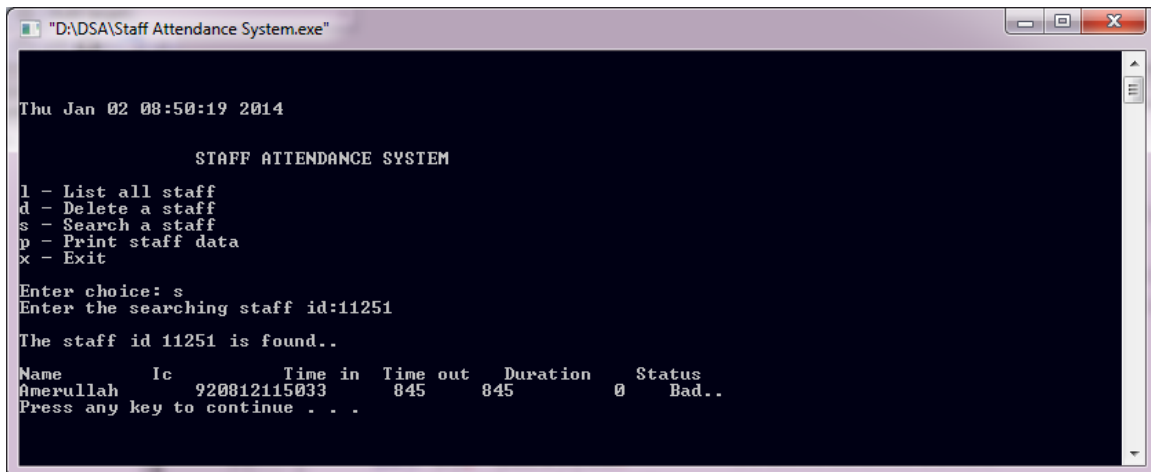
      STAFF ATTENDANCE SYSTEM

l - List all staff
d - Delete a staff
s - Search a staff
p - Print staff data
x - Exit

Enter choice: s
Enter the searching staff id:123
The staff id 123 is not found..
Press any key to continue . . .
```

SEARCH A STAFF

- ✓ This page shown when user choose 's' and enter the system cannot find the staff id.



```
"D:\DSA\Staff Attendance System.exe"

Thu Jan 02 08:50:19 2014

      STAFF ATTENDANCE SYSTEM

l - List all staff
d - Delete a staff
s - Search a staff
p - Print staff data
x - Exit

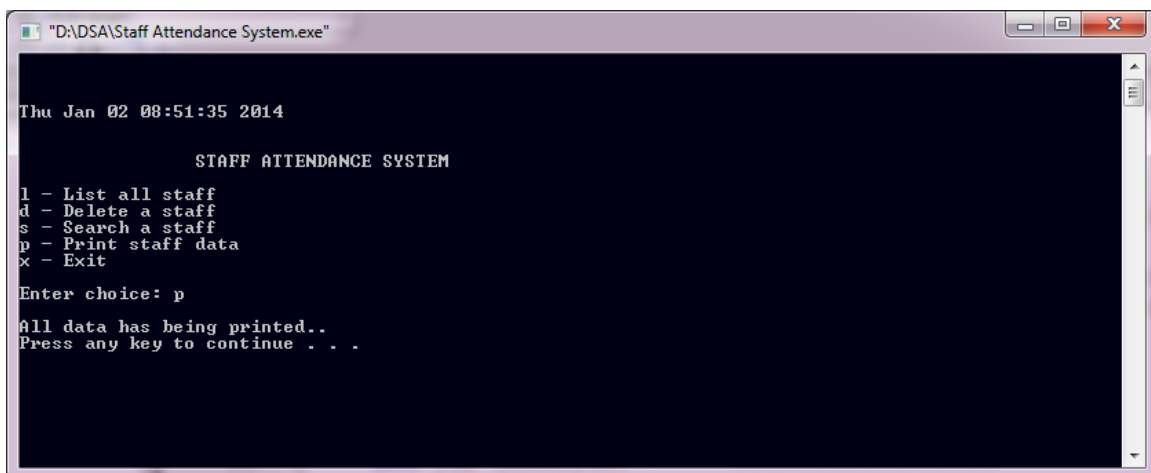
Enter choice: s
Enter the searching staff id:11251

The staff id 11251 is found..

Name      Ic      Time in  Time out  Duration  Status
Amerullah  920012115033    845      845      0      Bad..
Press any key to continue . . .
```

SEARCH A STAFF

- ✓ This page shown when user choose 's' and the staff id is match to record data.



```
"D:\DSA\Staff Attendance System.exe"

Thu Jan 02 08:51:35 2014

      STAFF ATTENDANCE SYSTEM

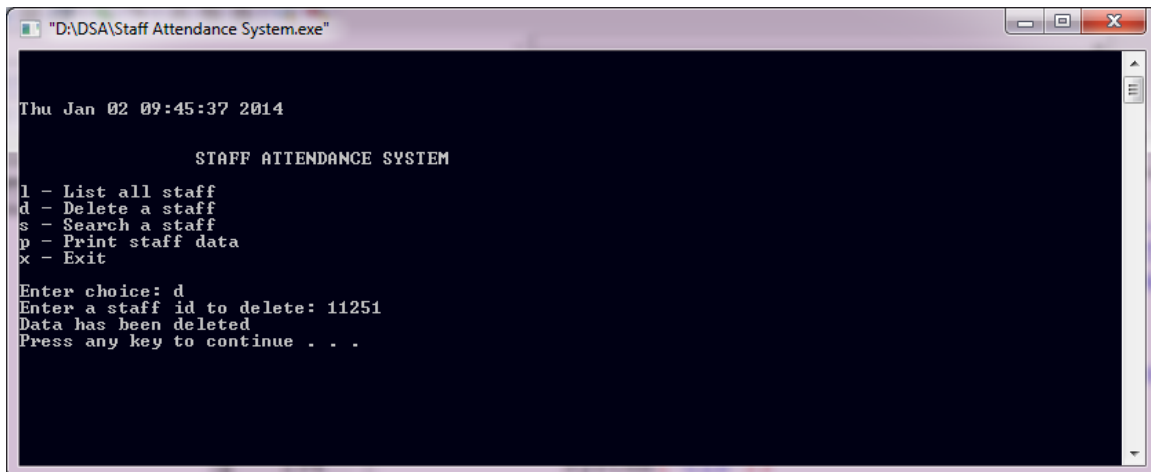
l - List all staff
d - Delete a staff
s - Search a staff
p - Print staff data
x - Exit

Enter choice: p

All data has being printed..
Press any key to continue . . .
```

PRINT STAFF DATA

- ✓ This page shown when user choose 'p'.
- ✓ All data will be save in output file named staffData.txt.



The screenshot shows a Windows application window titled "D:\DSA\Staff Attendance System.exe". The application is running on a dark blue background. At the top, it displays the date and time: "Thu Jan 02 09:45:37 2014". Below this, the title "STAFF ATTENDANCE SYSTEM" is centered. A menu of options is listed: "l - List all staff", "d - Delete a staff", "s - Search a staff", "p - Print staff data", and "x - Exit". The user has entered 'd' for the choice. Then, a prompt "Enter a staff id to delete: 11251" is shown, followed by the message "Data has been deleted" and "Press any key to continue . . .".

```
Thu Jan 02 09:45:37 2014

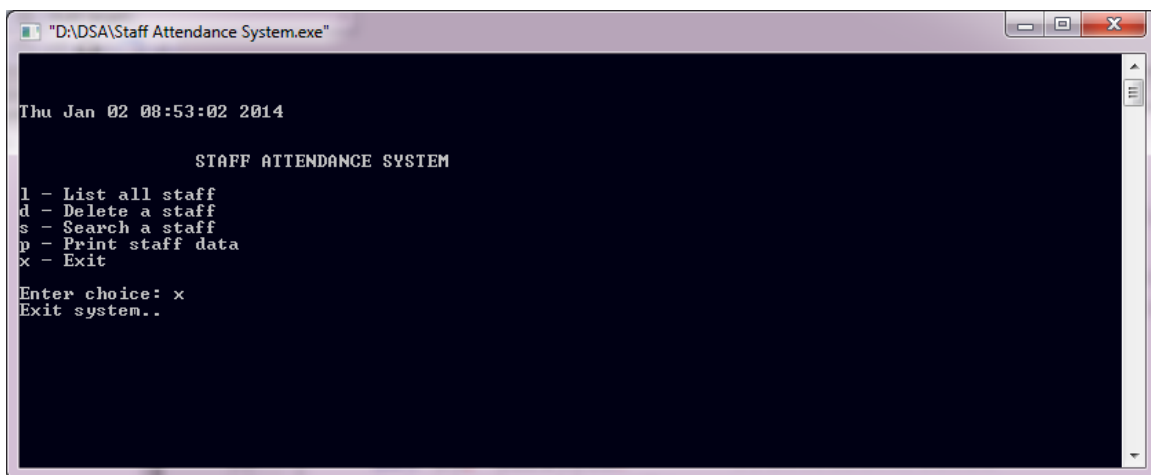
      STAFF ATTENDANCE SYSTEM

l - List all staff
d - Delete a staff
s - Search a staff
p - Print staff data
x - Exit

Enter choice: d
Enter a staff id to delete: 11251
Data has been deleted
Press any key to continue . . .
```

DELETE A STAFF

- ✓ This page shown when user choose 'd' and enter the exist staff id.



The screenshot shows the same application window. The date and time are now "Thu Jan 02 08:53:02 2014". The menu options are the same. The user has entered 'x' for the choice, and the application displays "Exit system..".

```
Thu Jan 02 08:53:02 2014

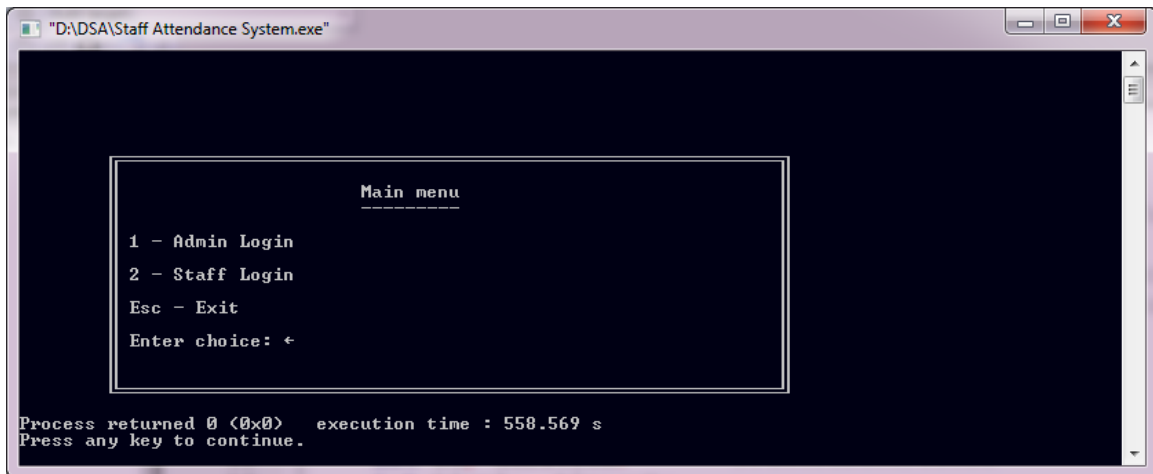
      STAFF ATTENDANCE SYSTEM

l - List all staff
d - Delete a staff
s - Search a staff
p - Print staff data
x - Exit

Enter choice: x
Exit system..
```

EXIT

- ✓ This system will back to Homepage.



EXIT SYSTEM

- ✓ This system will stop running when input is 'esc'.