

## Project 4 Sample Run

```
Programmer:      Mohamed Kaid
Course:          COSC 311, W '22
Project:         4
Due date:        3-24-22
Welcome!!
1- Create a random-access file
2- Display a random-access file
3- Build the index
4- Display the index
5- Retrieve a record
6- Modify a record
7- Add a new record
8- Delete a record
9- Exit
Choice: |
```

*Figure 1 Main Menu*

```
Choice: 1
Cerating new Random File
Enter an Input File: students.txt
Enter an output file: data
Data sent to File
```

*Figure 2 Creating Random Access File*

## Project 4 Sample Run

```
Choice: 2
Enter Random Access File Name: data
Display Records
Tom           Wiely           1234           3.76
Mike          Johnson          1111           2.78
Alex          Shafer            3333           4.0
Nancy         Koffman           4444           3.56
Karen         Thomson            2222           3.2

What would you like to do next:
M: to return to main menu
N: for next screen
A: to display all
Choice: a
Sara          Dorthy            9999           1.79
Adam          Nelson            7777           2.7
Kate          Peterson          6666           3.5
Carla         Howard            3325           3.9
Ben           Jones             5555           2.42
Dan           Fuhr              1156           3.97
File done
```

*Figure 3 displaying the random File*

```
Choice: 3
Enter a database name: data
|
DONE
```

*Figure 4 Creating the Index using BST*

## Project 4 Sample Run

```
Choice: 4

(1234,0)
(1111,1) (3333,2)
(1156,10) (2222,4) (4444,3)
(3325,8) (9999,5)
(7777,6)
(6666,7)
(5555,9)
```

*Figure 5 displaying the tree level by level*

```
Choice: 5
Enter student ID: 1111
Mike                Johnson                1111        2.78
```

*Figure 6 pulling a record*

```
Choice: 6
Enter student ID: 1111
Mike                Johnson                1111        2.78
1- Change the first name:
2- Change the last name:
3- Change GPA:
4- Done:
Choice: 1
Enter Student First Name:
Mohamed
1- Change the first name:
2- Change the last name:
3- Change GPA:
4- Done:
Choice: 4
File Modified
```

*Figure 7 Modifying a record*

## Project 4 Sample Run

```
Choice: 5
Enter student ID: 1111
Mohamed           Johnson           1111       2.78
```

*Figure 8 checking modified record*

```
Choice: 7
Adding a new Record
Enter New Student's First Name: Mohamed
Enter New Student's Last Name: Kaid
Enter Student ID: 1001
Enter Student GPA: 3.56
Student has been added
```

*Figure 9 Adding a new record*

```
Choice: 5
Enter student ID: 1001
Mohamed           Kaid           1001       3.56
```

*Figure 10 checking new Record*

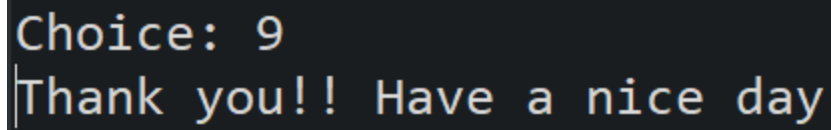
```
Choice: 8
Enter student ID: 1001
Mohamed           Kaid           1001       3.56
Record Deleted
```

*Figure 11 Deleting a record*

```
Choice: 5
Enter student ID: 1001
Record does not exist!
```

*Figure 12 checking Deleted record*

Project 4 Sample Run

A screenshot of a terminal window with a dark background. The text 'Choice: 9' is on the first line, and 'Thank you!! Have a nice day' is on the second line. A vertical cursor is visible at the start of the second line.

```
Choice: 9  
Thank you!! Have a nice day
```

*Figure 13 Exiting the Program*