| **Test** | **Checkpoints** | **Pass** |
| --- | --- | --- |
| **1** | The menu gets displayed on startup. |  |
| **2** | The menu should be displayed after completing each section. |  |
| **3** | Names are required to be at least one character long. |  |
| **4** | Ages must be between 5 and 100 inclusive |  |
| **5** | Number of duties must not be a negative number. |  |
| **6** | Genders must be either ‘m’ or ‘f’. |  |
| **7** | Employee details should be displayed correctly. |  |
| **8** | Deleted employees should not show up in any tables. |  |
| **9** | There is a limit of 10 employees in the system. |  |
| **10** | Employees should be saved to the text file when the program is closed. |  |
| **11** | Employees should be loaded from the text file when the program is started. |  |
| **12** | Tables should be correctly formatted. |  |
| **13** | Questions should keep repeating until a valid answer is given. |  |
| **14** | The thank you message should be displayed when program is closed. |  |
| **15** | When modifying or deleting an employee, the user should be asked to confirm the changes. |  |
| **16** | Employees with most jobs should work. |  |
| **17** | Employees with no jobs should work. |  |
| **18** | Employees within a specified age group should work. |  |

| **Test** | **Purpose** | **Input** | **Expected Output** | **Pass** |
| --- | --- | --- | --- | --- |
| **1** | Program startup | java TUIStart | Text: “Welcome to the ABC Company Employee System”  Should show the Main Menu and 9 options.  Text: “Number of employees in system: 0” |  |
| **2** | List all employees | 4 | Title: “List of All Employees”  Should show an empty table.  Text: “Number of employees in system: 0”  Should display main menu. |  |
| **3** | Add employee | 1 | Title: “Add Employee”  Question: “Enter name:” |  |
|  |  |  | Text: “Error! A value must be entered”  Question: “Enter name:” |  |
|  |  | John | Question: “Enter gender (m/f):” |  |
|  |  | x | Text: “Error! Please enter ‘m’ of ‘f’”  Question: “Enter gender (m/f):” |  |
|  |  | m | Question: “Enter age in years:” |  |
|  |  | 140 | Text: “Error! Age must be between 5 and 100 inclusive”  Question: “Enter age in years:” |  |
|  |  | 23 | Question: “Number of jobs assigned:” |  |
|  |  | -5 | Text: “Error! Negative values are not allowed”  Question: “Number of jobs assigned:” |  |
|  |  | 4 | Text: “Employee ID is 101”  Should display menu. |  |
| **4** | List all employees | 4 | Should show 1 employee in the system and the employee details  Should display main menu. |  |
| **5** | Modify employee | 3 | Title: “Modify Employee”  Question: “Enter Employee ID:” |  |
|  |  | 20 | Error: “Invalid ID”  Shows menu again. |  |
|  |  | 3 | Title: “Modify Employee”  Question: “Enter Employee ID:” |  |
|  |  | 101 | Should current print employee details for John.  Question: “Enter name:” |  |
|  |  | Jim | Question: “Enter gender (m/f):” |  |
|  |  | m | Question: “Enter age in years:” |  |
|  |  | 24 | Question: “Number of jobs assigned:” |  |
|  |  | 5 | Question: “Are you sure you want to modify this record? (Y/n)?” |  |
|  |  | y | Text: “Record modified”  Should display main menu. |  |
| **6** | List all employees | 4 | Should show 1 employee in the system and the modified employee details.  Text: “Number of employees in system: 1”  Should display main menu. |  |
| **7** | Delete employee | 2 | Title: “Delete Employee”  Question: “Enter Employee ID:” |  |
|  |  | 20 | Error: “Could not find employee 20”  Should display menu screen. |  |
|  |  | 2 | Title: “Delete Employee”  Question: “Enter Employee ID:” |  |
|  |  | 101 | Should display employee details for Jim.  Question: “Are you sure you want to delete this record? (y/N)” |  |
|  |  | y | Text: “Employee 101 has been deleted.”  Should display main menu. |  |
| **8** | List all employees | 4 | Should show that there are zero employees in the system.  Text: “Number of employees in system: 0”  Should display main menu. |  |
| **9** | Add multiple employees | 1 | Title: “Add Employee”  Questions for name, gender, age and duties. |  |
|  |  | Mary, f, 35, 10 | Text: “Employee ID is 102” |  |
|  |  | 1 | Title: “Add Employee”  Questions for name, gender, age and duties. |  |
|  |  | Sam, m, 20, 0 | Text: “Employee ID is 103” |  |
|  |  | 1 | Title: “Add Employee”  Questions for name, gender, age and duties. |  |
|  |  | Mike, m, 25, 5 | Text: “Employee ID is 104” |  |
| **10** | View single employee details | 5 | Title: “Details for a Single Employee”  Question: “Enter ID:” |  |
|  |  | 20 | Text: “Could not find an employee with that ID.”  Question: “Would you like to view another employee? (Y/n):” |  |
|  |  | y | Title: “Details for a Single Employee”  Question: “Enter ID:” |  |
|  |  | 103 | Should print details for the employee of Sam.  Question: “Would you like to view another employee? (Y/n):” |  |
|  |  | n | Should display main menu |  |
| **11** | List employees in age group | 6 | Title: “Employees in Age Group”  Question: “Minimum age:” |  |
|  |  | 24 | Question: “Maximum age:” |  |
|  |  | 36 | Should show the ID, Name and Age of two employees Mary and Mike.  Text: “There are 2 employee(s) in the age range of 24 to 36.  Should display main menu. |  |
| **12** | Show employees with most jobs | 7 | Title: “Employee with Most Jobs Assigned”  Should print details for Mary.  Should display main menu. |  |
| **13** | List employees with no jobs | 8 | Title: “Employees with No Jobs Assigned”  Should print the details for Sam.  Text: “There are 1 employee(s) with no jobs assigned.  Should display main menu. |  |
| **14** | Exit program | 9 | Title: “Exit”  Text: “Number of employee records written to employees.txt file: 3”  Text: “Thank you for using the ABC Company Employee System” |  |
| **15** | Program should read from save file | java TUIStart | Text: “Number of employees in system: 3”  Should display menu |  |
|  | Should list all employees | 4 | Title: “List of All Employees”  Should print the details of all the employees in the system.  Text: “Number of employees in system: 3”  Should display main menu. |  |