

Test Design Document

First Test Case: Testing the add method in the Company class, which is called in the addEmployee method in the Controller class, which is called when the Add Employee button is clicked in the GUI.

- case 1: Adding a valid part time employee
 - input: Doe,Jane, CS, 3/3/2021, Parttime, 12
 - function: Add Employee button
 - Output: "Employee added."
- case 2: Adding a valid full time employee
 - input: Doe,John, IT, 11/17/2014, Fulltime, 56000
 - function: Add Employee button
 - Output: "Employee added."
- case 3: Adding a valid management employee with a manager role
 - input: Doe,Mike, ECE, 8/16/2005, Management, Manager, 89000
 - function: Add Employee button
 - Output: "Employee added."
- case 4: Adding a valid management employee with a director role
 - input: Smith,James, CS, 12/31/2015, Management, Director, 74500
 - function: Add Employee button
 - Output: "Employee added."
- case 5: Adding a valid management employee with a department head role
 - input: Johnson,Robert, IT, 1/23/2020, Management, Department Head, 32670
 - function: Add Employee button
 - Output: "Employee added."
- case 6: Adding a duplicate employee
 - input: Doe,John, IT, 11/17/2014, Fulltime, 56000
 - function: Add Employee button
 - Output: "Employee is already on the list."

Second Test Case: Testing the remove method in the Company class, which is called in the removeEmployee method in the Controller class, which is called when the user clicks the Remove Employee button.

- case 1: Removing an employee that does not exist
 - input: Farmer,Peggy, CS, 3/2/2021
 - function: Remove Employee button
 - output: "Employee does not exist."
- case 2: Removing a part time employee that exists in the database
 - add employee: Farmer,Peggy, CS, 3/2/2021, Parttime, 45.70

- input: Farmer,Peggy, CS, 3/2/2021
- function: Remove Employee button
- output: "Employee removed."
- case 3: Removing a full time employee that exists in the database
 - add employee: Styles,Harry, ECE, 2/1/2017, Fulltime, 75000
 - input: Styles,Harry, ECE, 2/1/2017
 - function: Remove Employee button
 - output: "Employee removed."
- case 4: Removing a management employee with a manager role that exists in the database
 - add employee: Smith,Bob, IT, 10/15/2012, Management, 67000, Manager
 - input: Smith,Bob, IT, 10/15/2012
 - function: Remove Employee button
 - output: "Employee removed."
- case 5: Removing a management employee with a department head role that exists in the database
 - add employee: Obama,Michelle, CS, 11/25/2015, Management, 52700, Department Head
 - input: Obama,Michelle, CS, 11/25/2015
 - function: Remove Employee button
 - output: "Employee removed."
- case 6: Removing a management employee with a director role that exists in the database
 - add employee: Obama,Barack, ECE, 4/8/2016, Management, 94600, Director
 - input: Obama,Barack, ECE, 4/8/2016
 - function: Remove Employee button
 - output: "Employee removed."

Third test case: Testing the setHours method in the Company class, which is called in the setHours method in the Controller class, which is called when the user clicks the SET HOURS button.

- case 1: Setting the hours of a employee that does not exist
 - input: Johnson,Janet, ECE, 9/14/2019, 42
 - function: SET HOURS button
 - output: "Employee does not exist."
- case 2: Setting the hours of a part time employee that exists in the database (we will use Jane Doe from add)
 - input: Doe,Jane, CS, 3/3/2021
 - function: SET HOURS button

- output: "Working hours set."
- case 3: Setting the hours of a part time employee that exists in the database to be negative
 - add employee: Ansari,Nida, ECE, 8/1/2020, Parttime, 34
 - input: Ansari,Nida, ECE, 8/1/2020 -25
 - function: SET HOURS button
 - output: "Working hours cannot be negative."
- case 4: Setting the hours of a part time employee that exists in the database to be over 100 (we will use Nida Ansari from case 3)
 - input: Ansari,Nida, ECE, 8/1/2020 150
 - function: SET HOURS button
 - output: "Invalid Hours: over 100."
- case 5: Setting the hours of a full time employee that exists in the database (we will use John Doe from add)
 - input: Doe,John, IT, 11/17/2014, 76
 - function: SET HOURS button
 - output: "Employee does not exist."
- case 6: Setting the hours of a full time employee that exists in the database (we will use Mike Doe from add)
 - input: Doe,Mike, ECE, 8/16/2005, 65
 - function: SET HOURS button
 - output: "Employee does not exist."

Fourth test case: Testing invalid dates

- case 1: Adding an employee with a date after the current date (today)
 - input: Smith,Mary, CS, 4/12/2023, Parttime, 19
 - function: add employee
 - output: "4/12/2022 is not a valid date!"
- case 2: Adding an employee with a date before 1900 (we will use John Doe from add)
 - input: Doe,John, IT, 6/18/1896
 - function: add employee
 - output: "6/18/1896 is not a valid date!"
- (Valid date tests can be seen in add employee test cases. Datepicker also handles other forms of invalid dates such as 3/32/2012 or 13/5/2004)

Fifth test case: Testing invalid salaries

- case 1: salary of full time employee is negative
 - input: Ansari,Zubair, ECE, 3/12/2021, Fulltime, -56000

- function: add employee button
- output: "Salary cannot be negative."
- case 2: salary of management employee with department head role is negative
 - input: Ansari,Zubair, ECE, 3/12/2021, Management, -34000, Department Head
 - function: add employee button
 - output: "Salary cannot be negative."
- case 3: salary of management employee with manager role is negative
 - input: Ansari,Zubair, ECE, 3/12/2021, Management, -204000, Manager
 - function: add employee button
 - output: "Salary cannot be negative."
- case 4: salary of management employee with director role is negative
 - input: Ansari,Zubair, ECE, 3/12/2021, Management, -79370, Director
 - function: add employee button
 - output: "Salary cannot be negative."

Sixth test case: Testing invalid hourly rates

- case 1: hourly rate of a part time employee is negative
 - input: Ansari,Zubair, ECE, 3/12/2021, Parttime, -39
 - function: add employee button
 - Output: "Pay rate cannot be negative."
- (A valid version of an hourly rate can be seen in the add test case.)

Seventh test case: testing the calculatePayment() method

- case 1: calculating the payment of a part time employee that worked less than 80 hours
 - input: hourly rate = 45, hours worked = 70
 - function: calculate payment button
 - output: \$3150
- case 2: calculating the payment of a part time employee that worked more than 80 hours
 - input: hourly rate = 27, hours worked = 87
 - function: calculate payment button
 - output: \$2443.50
- case 3: calculating the payment of a full time employee
 - input: salary = 43000
 - function: calculate payment button
 - output: \$1653.85
- case 4: calculating the payment of a management employee with a manager role
 - input: salary = 58670
 - function: calculate payment button

- output: \$2448.85
- case 5: calculating the payment of a management employee with a department head role
 - input: salary = 30570
 - function: calculate payment button
 - output: \$1541.15
- case 6: calculating the payment of a management employee with a director role
 - input: salary = 20420
 - function: calculate payment button
 - output: \$1246.92
- case 7: calculating the payment when the database is empty
 - output: "Employee database is empty."

Eighth test case: Testing the import method

- case 1: importing an empty file
 - input: empty.txt
 - function: import button
 - output: File is empty!
- case 2: importing a properly formatted file
 - input: properFormat.txt
 - function: import button
 - output: "Database Imported!"
- case 3: importing a file with improper format
 - input: improperformat.txt
 - function: import button
 - output: File Not Found.
- case 4: file is not selected
 - input: (nothing)
 - function: import button
 - output: Import failed. Invalid file selection.

Ninth test case: Testing the export method

- case 1: exporting an empty file
 - input: empty.txt
 - function: export button
 - output: File is empty!

- case 2: exporting a non empty file
 - input: nonEmpty.txt
 - function: export button
 - output: File is not empty!
- case 3: file is not selected
 - input: (nothing)
 - function: export button
 - output: Export failed. Invalid file selection.

Tenth test case: Testing the print method

- case 1: print all employees with an empty database
 - function: print all employees from drop down menu
 - output: "Employee database is empty."
- case 2: print all employees by department with an empty database
 - function: print by department from drop down menu
 - output: "Employee database is empty."
- case 3: print all employees by date with an empty database
 - function: print by date from drop down menu
 - output: "Employee database is empty."

Eleventh test case: Inputs left blank

- case 1: all blank inputs
 - input: (no inputs)
 - function: Add Employee button, Remove Employee button
 - output: Please enter valid input.
- case 2: only name is not left blank:
 - input: Jane Doe
 - function: Add Employee button, Remove Employee button
 - output: Please enter valid input.
- case 3: only name and department are not left blank
 - input: Jane Doe, CS
 - function: Add Employee button, Remove Employee button
 - output: Please enter valid input.
- case 4: only name, department, and date are not left blank
 - input: Jane Doe, CS, 3/3/2021
 - function: Add Employee button
 - output: Please enter valid input.

- case 5: hourly rate for a parttime employee is left blank
 - input: Jane Doe, CS, 3/3/2021, Parttime
 - function: Add Employee button
 - output: Please enter valid input.
- case 6: annual salary for a full time employee is left blank
 - input: Jane Doe, CS, 3/3/2021, Fulltime
 - function: Add Employee button
 - output: Please enter valid input.
- case 7: a managerial role for a management employee is not selected
 - input: Jane Doe, CS, 3/3/2021, Management
 - function: Add Employee button
 - output: Please enter valid input.
- case 8: annual salary for a management employee is left blank
 - input: Jane Doe, CS, 3/3/2021, Management, Manager (or Department Head, or Director)
 - function: Add Employee button
 - output: Please enter valid input.