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| Name of Course | **DATA STRUCTURE AND ALGORITHMS** | Course Code | **CSEB3213/CSEB324** |
| Lab Tutor | **DR AZHANA AHMAD** | Semester | **SEM 1 2023/24** |

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| Student Name | Muhammad Izzat Fikri Bin Zurilan |
| ID | SW01082295 |
| SECTION | 2A |
| Date | **18/12/2023** |

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| Assessment | Mock LabTest – Section 2A |
| Weightage | 2% |
| Course Outcome to achieve | |  | | --- | | CLO1: Describe the concepts and operations of data structures and common algorithms. (C2,PLO1) | |

***Source: Lab Test Semester 2 2021/2022***

Referring to the STL Queue program and output sample as shown below, complete the following questions:

1. Complete the **main()**. This function should be able to invoke all functions in the program. [5 marks]
2. Write a function named **insert()**. This function should be able to copy data from all arrays and store it into a STL queue. [5 marks]
3. Write a function named **update()**. This function should be able to update an employee’s salary based on input name from user. [5 marks]
4. Write a function named **display()**. This function should be able to display the updated details of employees. Refer to the sample of output provided below. [5 marks]

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| **Sample of Program** |
| **//preprocessor**  **//details of functions involved**    int main() {  string name [] = {"Ahmad","Siew May","Ravi","John","Mohammad","Jennifer"};  float salary [] = {12000.0, 4800.0,6000.0, 5500.0, 14000.0, 11000.0};  int service [] = {10,4,12,7,6,5};  queue <record> staff;  insert(/\*suitable argument\*/);  cout<<"\n # Menu : Current Record # "<<endl;  display(/\*suitable argument\*/);  cout<<"\n # Menu : Update Record # "<<endl;  update(/\*suitable argument\*/);  cout<<"\n # Menu : Updated Record # "<<endl;  display(/\*suitable argument\*/);  cout<<"\nEnd of program";  return 0;  } |

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| **Sample of Output** |
| **# Menu : Current Record #**  **List of Employee**  **---------------------------**  **1. Staff Name : Ahmad, Salary : RM 12000, Year of Service : 10**  **2. Staff Name : Siew May, Salary : RM 4800, Year of Service : 4**  **3. Staff Name : Ravi, Salary : RM 6000, Year of Service : 12**  **4. Staff Name : John, Salary : RM 5500, Year of Service : 7**  **5. Staff Name : Mohammad, Salary : RM 14000, Year of Service : 6**  **6. Staff Name : Jennifer, Salary : RM 11000, Year of Service : 5**  **# Menu : Update Record #**  **Enter name : Ravi**  **Press [1] for Salary or [2] for Year of Service : 2**  **Enter new year of service : 15**  **# Menu : Updated Record #**  **List of Employee**  **---------------------------**  **1. Staff Name : Ahmad, Salary : RM 12000, Year of Service : 10**  **2. Staff Name : Siew May, Salary : RM 4800, Year of Service : 4**  **3. Staff Name : Ravi, Salary : RM 6000, Year of Service : 15**  **4. Staff Name : John, Salary : RM 5500, Year of Service : 7**  **5. Staff Name : Mohammad, Salary : RM 14000, Year of Service : 6**  **6. Staff Name : Jennifer, Salary : RM 11000, Year of Service : 5**  **End of program** |

**Sample of Output**

# Menu : Current Record #

List of Employee

--------------------------------------------

1. Staff Name: Ahmad, Salary : RM 12000, Year of Service: 10

2. Staff Name: Siew May, Salary : RM 4800, Year of Service: 4

3. Staff Name: Ravi, Salary : RM 6000, Year of Service: 12

4. Staff Name: John, Salary : RM 5500, Year of Service: 7

5. Staff Name: Mohammad, Salary : RM 14000, Year of Service: 6

6. Staff Name: Jennifer, Salary : RM 11000, Year of Service: 5

# Menu : Update Record #

Enter name : Jennifer

Press [1] for Salary or [2] for Year of Service: 2

Enter new year of service: 11

# Menu : Updated Record #

List of Employee

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1. Staff Name: Ahmad, Salary : RM 12000, Year of Service: 10

2. Staff Name: Siew May, Salary : RM 4800, Year of Service: 4

3. Staff Name: Ravi, Salary : RM 6000, Year of Service: 12

4. Staff Name: John, Salary : RM 5500, Year of Service: 7

5. Staff Name: Mohammad, Salary : RM 14000, Year of Service: 6

6. Staff Name: Jennifer, Salary : RM 11000, Year of Service: 11

End of program