

## BACS2023 Object-Oriented Programming

### Practical #8A

#### Question 1

ABC Sdn. Bhd. has in employment a total of 50 full-time employees and 20 part-time staff. To inculcate the value of social responsibility among their employees, the management has decided to create 2 ways for full-time employees to contribute, i.e., either through contributing donations to or through doing volunteer work at one permanently adopted charity organization.

As a programmer working in the IT department, you are requested to write an application program to keep track of employees' monthly pay slip and social responsibility contribution details.

If a full-time employee chooses to donate, your program should prompt for the amount of donation the employee would like to contribute. Otherwise, employees will opt to volunteer as a "gotong-royong member".

The calculation of monthly salary for employees are as follows:

- A. A full-time employee's monthly salary is **basic salary + allowance**. If the employee has opted to donate to the charity fund, the donation amount should be deducted from the monthly salary.
- B. A part-time employee is paid by **hourly rate \* hours worked**. Assume that there is a standard hourly rate for all part-time employees.

Design the classes required for this problem and draw a class diagram to show your design. (Note: To simplify the solution, ignore all other salary deductions such as EPF, PCB, etc.)

Then, develop a program to solve this problem. Your program should display the total number of full-time employees who choose to contribute as volunteers and the total amount of donation contributed by the staff.

#### Question 2

- a) Provide Two reasons of using interface file.
- b) Explain the differences between abstract class and interface file in terms of the variable, constructor and methods declaration.