**Task 1:**

Consider UML diagram to create classes. Write given DM's & MF's in Employee class. Keep DM's protected in Employee class. Inside body of ***calcSal*** write return salary. Create Parameterized constructor of Employee class to set all DM's without any check. Also overload stream insertion operator for Employee class. Implement Derived classes details are:

* **RegEmp** (Regular Employee) has a fixed salary**,** however if employee works for additional hours employee will be paid at the rate of 100 per hour. Implement ***calcSal*** function of **RegEmp** accordingly.
* **ConEmp** (Contractual Employee) has a fixed salary and per hour rate. Salary is calculated by multiplying hours with hour rate and fixed salary is added.
* **DWageEmp** (Daily Wage Employee) has zero fixed salary, and each employee has hour rate accordingly to skills. Implement ***calcSal*** function of **DWageEmp** simply multiply hRate by hours.

Implement parameterized constructor in all child classes. Write main function to test code. Create pointer array size 10 of type Employee. Assign different type of employee at each index at random. Call function to calculate salary of all employees by calling appropriate calculate salary function. Finally using stream insertion operator of Employee to print all the employees complete name & salary

**Task 2:** Design a Ship class that has the following members:

* A member variable for the name of the ship (a string)
* A member variable for the year that the ship was built (a string)
* A constructor and appropriate accessors and mutators
* A virtual print function that displays the ship’s name and the year it was built

Design a CruiseShip class that is derived from the Ship class. The CruiseShip class should have the following members:

* A member variable for the maximum number of passengers (an int)
* A constructor and appropriate accessors and mutators
* A print function that overrides the print function in the base class. The CruiseShip class’s print

function should display only the ship’s name and the maximum number of passengers.

Design a CargoShip class that is derived from the Ship class. The CargoShip class should have the

following members:

* A member variable for the cargo capacity in tonnage (an int)
* A constructor and appropriate accessors and mutators
* A print function that overrides the print function in the base class. The CargoShip class’s print function should display only the ship’s name and the ship’s cargo capacity

Demonstrate the classes in a program that has an array of Ship pointers. The array elements should

be initialized with the addresses of dynamically allocated Ship.

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