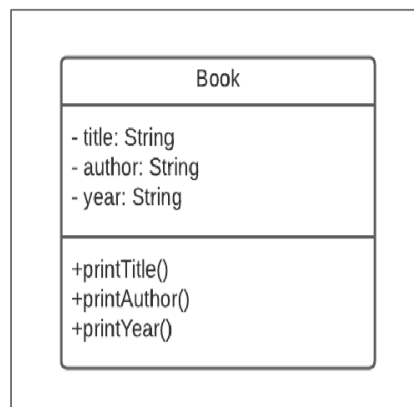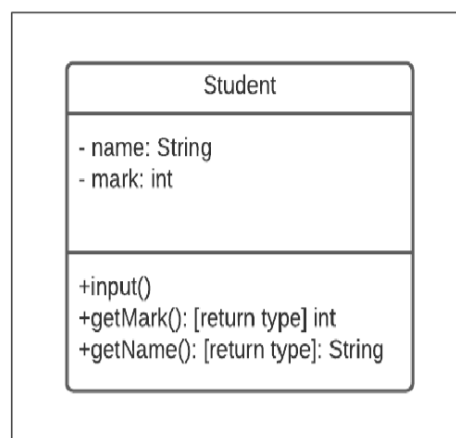UNIVERSITY OF
PLYMOUTH

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Set of activities to work through during your own time

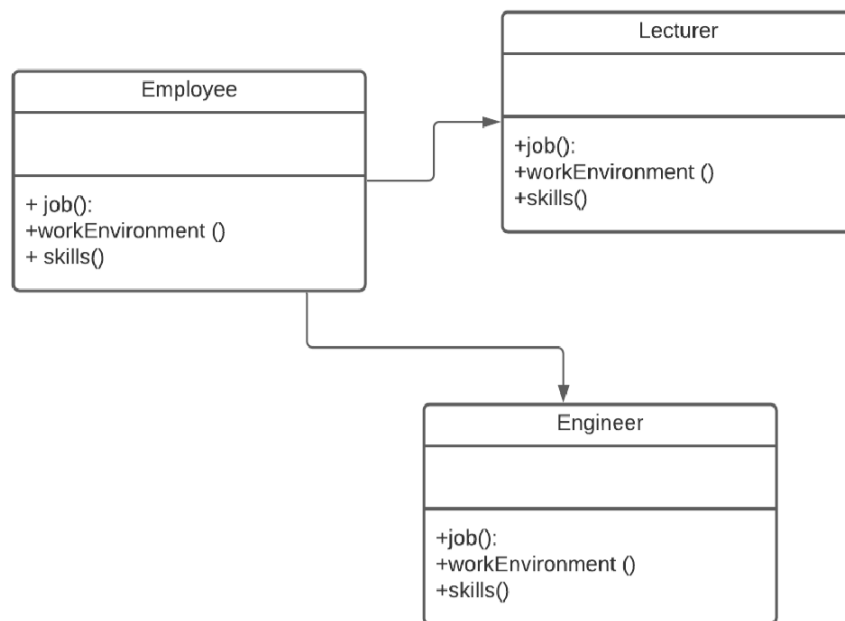Note: Consider any issues might arise (use Exception)

1. write a java program to create a list of Books considering the class Book below; call the related methods from a different class.

```
┌─────────────────────────────────┐
│       ┌───────────────────┐     │
│       │       Book        │     │
│       ├───────────────────┤     │
│       │ - title: String   │     │
│       │ - author: String  │     │
│       │ - year: String    │     │
│       ├───────────────────┤     │
│       │ +printTitle()     │     │
│       │ +printAuthor()    │     │
│       │ +printYear()      │     │
│       └───────────────────┘     │
└─────────────────────────────────┘
```

2. write a java program to store students in an Array List and then print out names of all students who are passed (the mark should be 40 or more to pass) – enable user input (5-10 students).

```
┌───────────────────────────────────────┐
│     ┌─────────────────────────────┐   │
│     │          Student            │   │
│     ├─────────────────────────────┤   │
│     │ - name: String              │   │
│     │ - mark: int                 │   │
│     │                             │   │
│     ├─────────────────────────────┤   │
│     │ +input()                    │   │
│     │ +getMark(): [return type] int │ │
│     │ +getName(): [return type]: String │
│     └─────────────────────────────┘   │
└───────────────────────────────────────┘
```

3. write a java program to create the classes, Lecturer and Engineer to extend the abstract class and implement its methods as shown the diagram below.

Employee
+ job(): +workEnvironment () + skills()

Lecturer
+job(): +workEnvironment () +skills()

Engineer
+job(): +workEnvironment () +skills()

4. Write a java program to create Rectangle and Cube Classes that implement the interface, Shape, that has two abstract methods draw() and howManySides().

5. Write a java program to create Apple, Banana and Tomato Classes to implement the interface, Plant, that has three abstract methods kind(), taste() and colour().

6. Write a java program to call the divide and add methods of the Calculator class that you implemented in previous activity list to add and divide two numbers x and y (user input). Note the call should be performed from a different class e.g. class Main.