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Course Name: Advanced System Analysis and Software Design

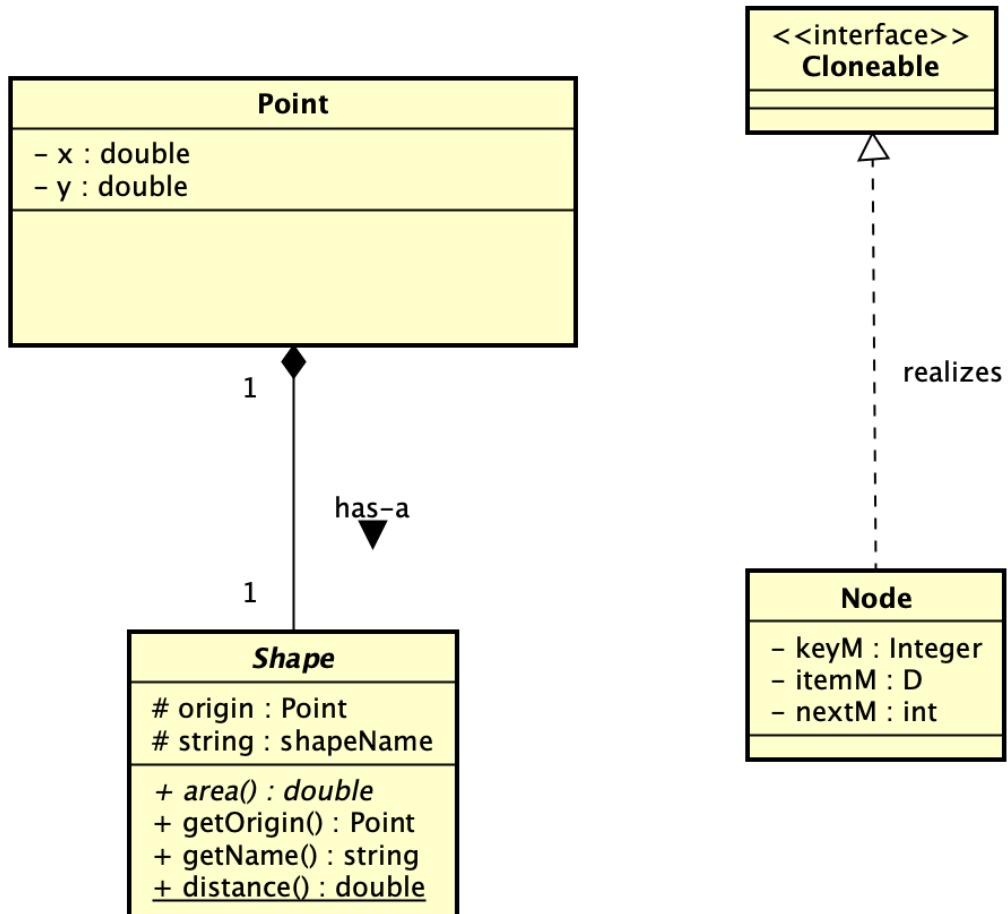
Course Code: ENSF 614

Assignment Number: Lab 04

Submission Date: 07/10/2025

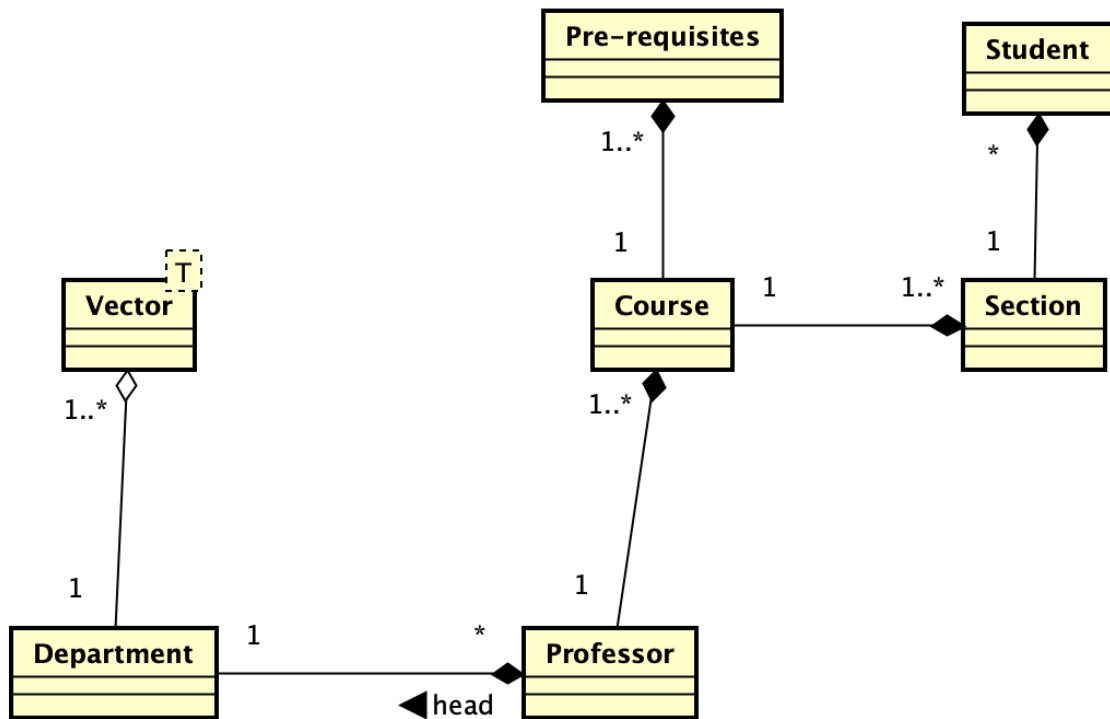
Exercise A

UML Diagram (Created with Astah UML):



Exercise B

UML diagram:



Exercise C

```
/*
 * File Name: EXC.cpp
 * Assignment: Lab 4 Exercise C
 * Lab Section: B01
 * Completed by: Jack Shenfield & William Watson
 * Submission Date: Oct 7, 2025
 */

// Class declaration similar to a .h file

using namespace std;
#include <string>

class Resizeable{

public:
    void enlarge (int n);
    void shrink (int n);

};

class Vehicle: public Resizeable, public Removeable{ // this class is abstract

protected:
    string name;

public:
    Vehicle(string name);
    virtual void move() = 0; // pure virtual

};

class Car final : public Vehicle{
```

```
private:
```

```
    int seats;
```

```
public:
```

```
    void turn();
```

```
};
```

```
class Moveable{
```

```
public:
```

```
    void forward() = 0; // pure virtual
```

```
    void backward() = 0; // pure virtual
```

```
};
```

Exercise D

