

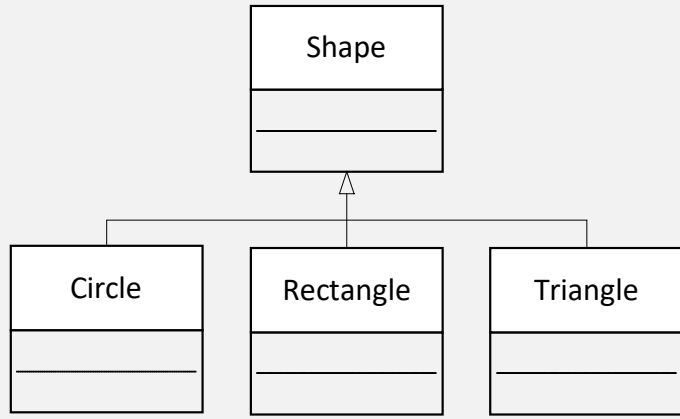
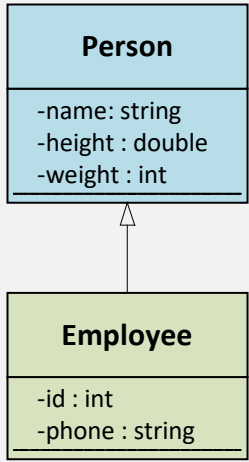


SAFE CASTING

Upcasting is safe but downcasting is not

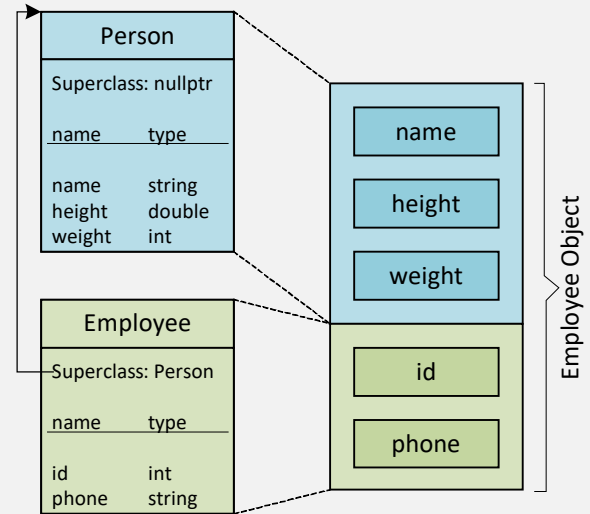
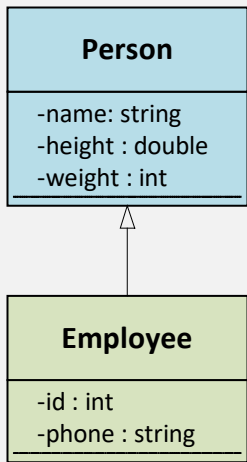


CASTING CHOICES





THE SYMBOL TABLE

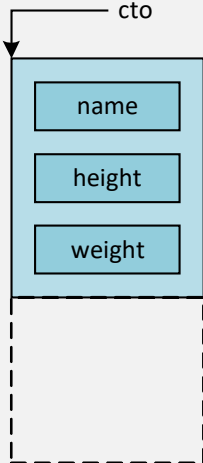
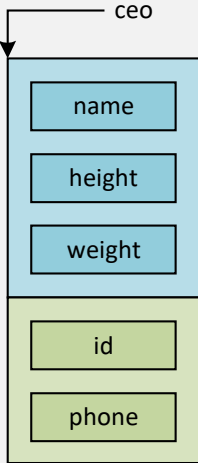




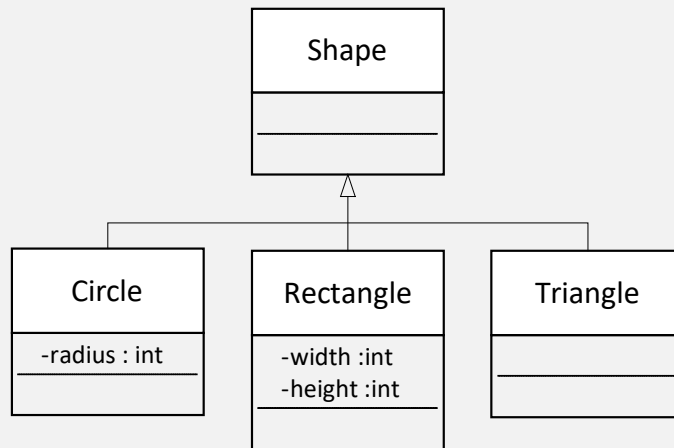
DOWNCASTING VS UPCASTING

```
PERSON* CEO = NEW EMPLOYEE(...);
```

```
EMPLOYEE* CTO = (EMPLOYEE *)NEW PERSON(...);
```



INCORRECT DOWNCASTING



- `Shape* s = new Circle(...);`
- `Rectangle* r = (Rectangle *)s;`
- Data misinterpretation
 - radius becomes width
 - height is undefined
 - Different data types have different sizes
- Polymorphism reduces the need to downcast

SLICING: UPCASTING WITH VALUES

