

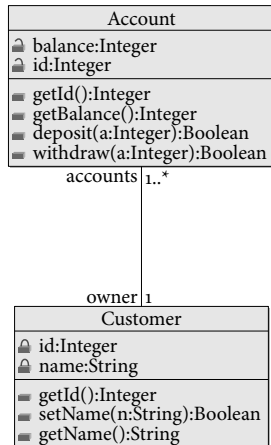
# Frame Conditions for OCL

Achim D. Brucker, SAP SE

```
Context Account::deposit(a:Integer)=Boolean
```

```
pre: a >= 0
```

```
post: balance = balance@pre +a
```



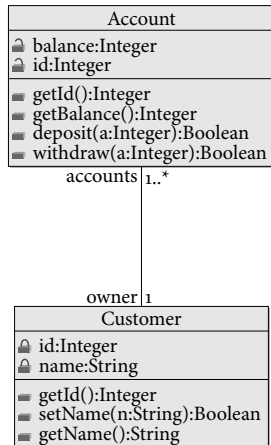
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post: balance = balance@pre +a  
      and id = id@pre
```



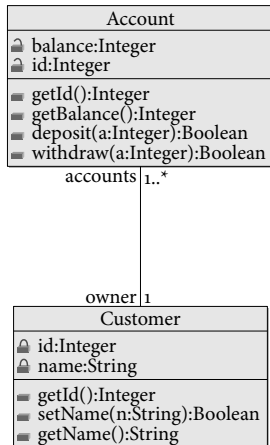
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```
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pre: a >= 0
```

```
post: balance = balance@pre + a  
      and id = id@pre  
      and owner = owner@pre
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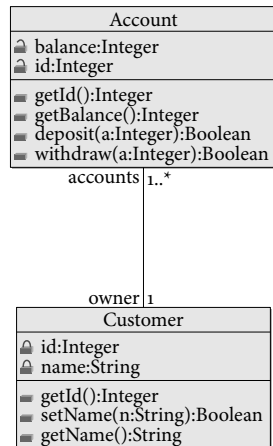
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```
post: balance = balance@pre +a
```

```
and id = id@pre
```

```
and owner = owner@pre
```

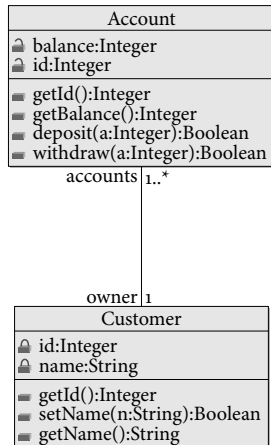
```
and ...
```



# Frame Conditions for OCL

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```
Context Account::deposit(a:Integer)=Boolean
pre: a >= 0
post: balance = balance@pre +a
      {self.balance}->modifiesOnly()
```



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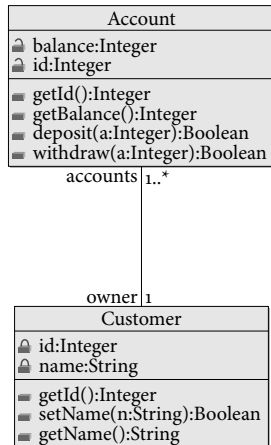
```
post: balance = balance@pre + a  
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## ■ Let f be a

- side-effect-free
- potentially recursive

function that enumerates the set of all modified references :

```
f()->oclIsModifiedOnly()
```



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- side-effect-free
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function that enumerates the set of all modified references :

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f()->oclIsModifiedOnly()
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## ■ Exercise:

Consider insert/delete for a doubly linked list

