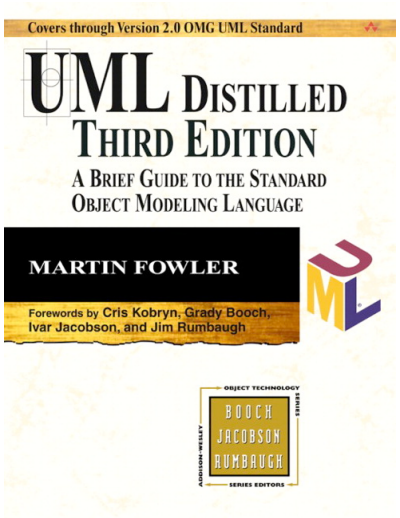
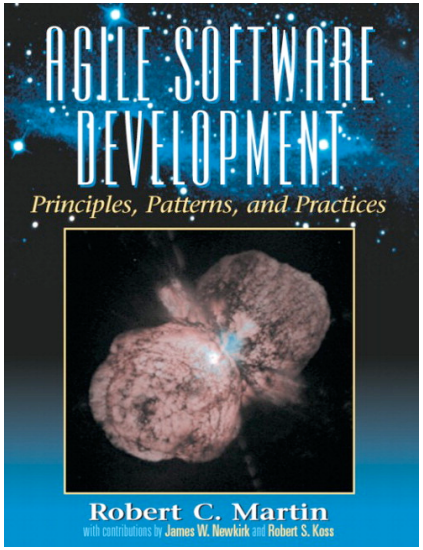
UML in a nutshell

Baris Aktemur
CS 534 | Ozyegin University

UML

- Unified Modeling Language
- Graphical notation for object-oriented systems
- Open standard by OMG
- Static and dynamic views





Note

- Note that the code samples in the following slides are in C#.

Class Diagrams

```
public class Dialer
{
}
```

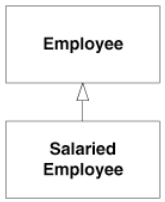
```
public class Dialer
{
  private ArrayList digits;
  private int nDigits;
  public void Digit(int n);
  protected bool RecordDigit(int n);
}
```


Association

```
public class Phone
{
  private Button itsButtons[15];
}
```

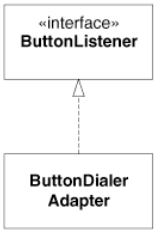
```
public class Phonebook
{
  private ArrayList itsPnos;
}
```


Inheritance

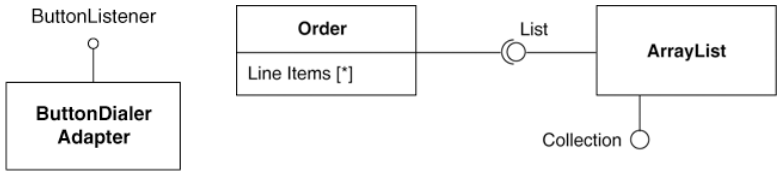


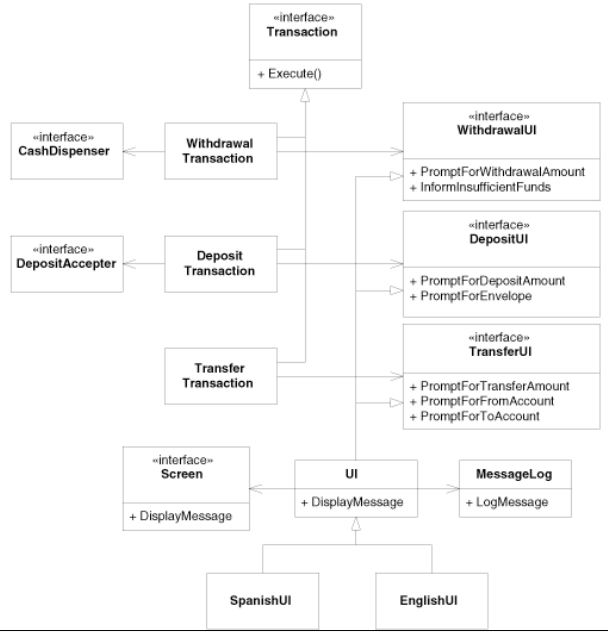

```
public class Employee
{
  ...
}

public class SalariedEmployee : Employee
{
  ...
}
```

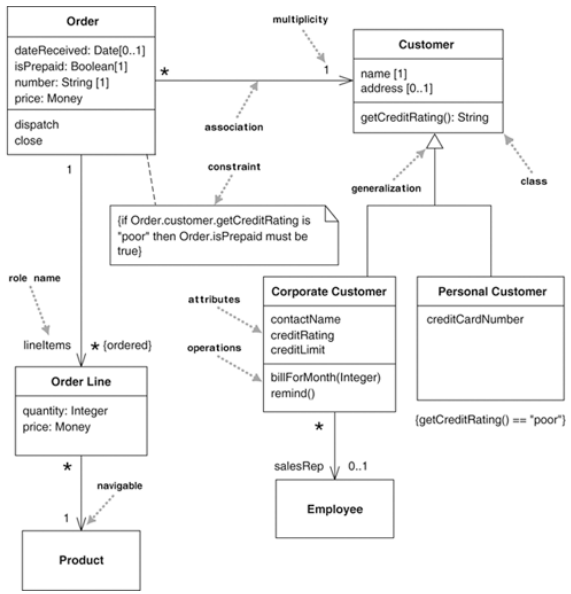
Interface Implementation



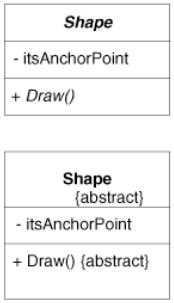

```
interface ButtonListener
{
  ...
}

public class ButtonDialerAdapter
  : ButtonListener
{
  ...
}
```







Abstract Classes

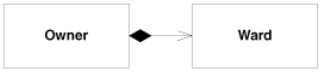



```
public abstract class Shape
{
  private Point itsAnchorPoint;
  public abstract void Draw();
}
```

Aggregation

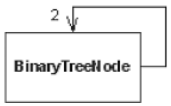
```
public class Whole
{
  private Part itsPart;
}
```


Composition

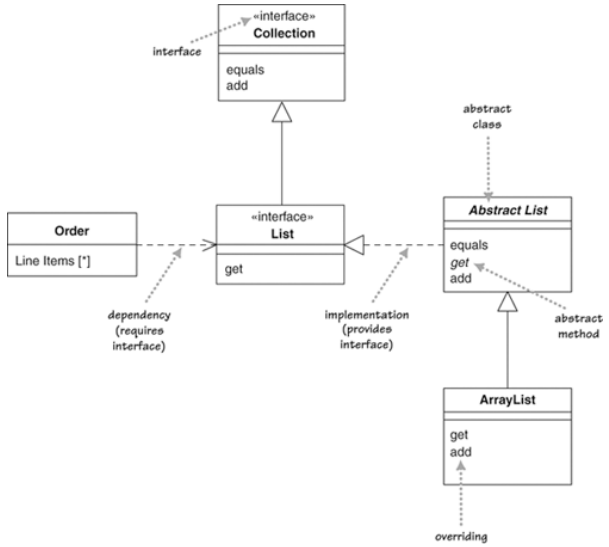



```
public class Owner
{
  private Ward itsWard;
}
```

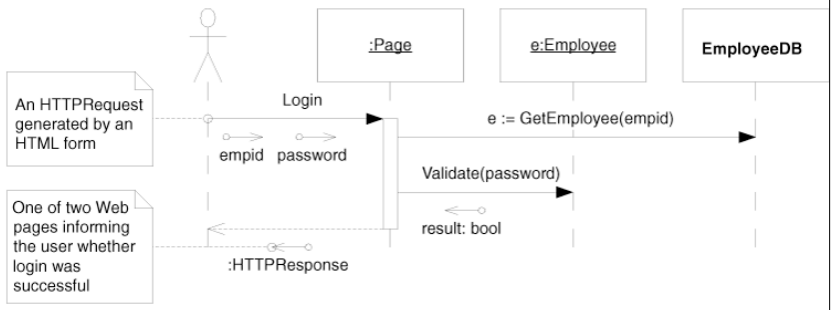

Multiplicity



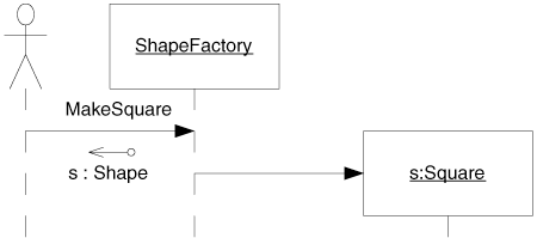

```
public class BinaryTreeNode
{
  private BinaryTreeNode leftNode;
  private BinaryTreeNode rightNode;
}
```

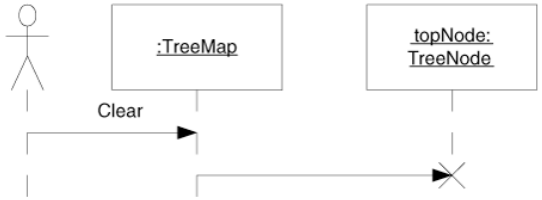
Sequence Diagrams



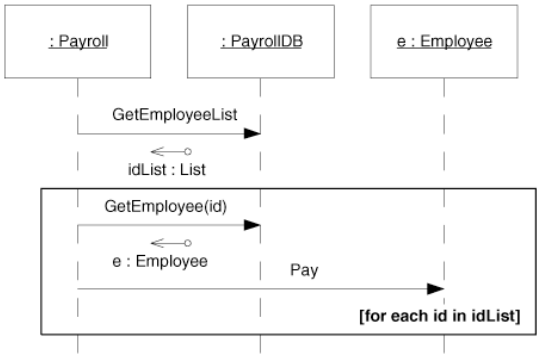
Object Creation

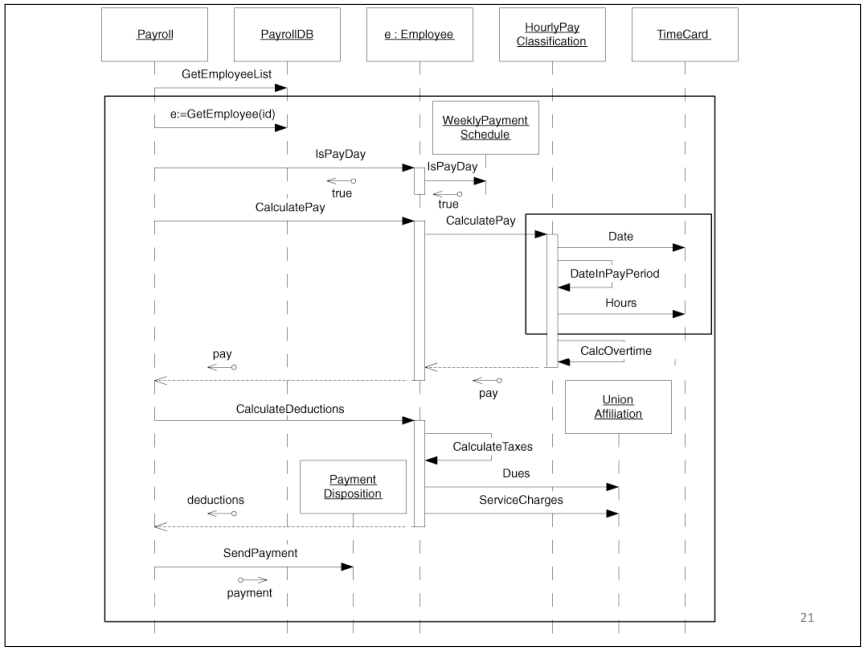


Object Destruction



Loops




Payroll
PayrollDB
e : Employee
HourlyPay Classification
TimeCard
GetEmployeeList
e:=GetEmployee(id)
WeeklyPayment Schedule
IsPayDay
IsPayDay
true
true
CalculatePay
CalculatePay
Date
DateInPayPeriod
Hours
CalcOvertime
pay
pay
Union Affiliation
CalculateDeductions
CalculateTaxes
Payment Disposition
Dues
ServiceCharges
deductions
SendPayment
payment