CLOUD SERVICES

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Class Diagram

```
class Service{
~ {static} double baseprice
~ {abstract} double getprice()
}

class Hosting{
~ int bits
~ int usage
~ double getprice()
}


class Addon{
~ boolean firsttime
~ double getprice()
}
class WebApp{
~ Date releaseDate
~ int currentYear
~ double getprice()
}

Service <|-- Addon
Service <|-- Hosting
Service <|-- WebApp
```

Problem

A cloud computing enterprise has multiple services to sale or rent. They sale Internet add-ons, and rent web applications and web hosting spots.
Every service has a base price from which its sale or rent price is determined according to the following rules:

- Internet add-ons
  - Its price is 20% of the base price if it's the first time the service is acquired, or 10% of the base price if the service has been previously bought.
- Rented applications
  - The monthly rate is 1% of the base price if the software was released this year; 0.9% if was released on the previous 3 years; 0.8% if was released more than 3 years ago.
- Hosted applications
  - The monthly rate depends on the disk space utilized and on the downloaded bits
  - If it uses less than 100Mb the payment is for 1% of the base price. 0.5% of the base price is additionally charged per each extra 100Mb.

- If the downloaded bits are less than 1000 Mb, the rate is 2% of the base price. 1% of the base price is additionally charged per each extra 1000 Mb.

Classes

SERVICE abstract

```
    double basePrice
    price()
```

ADDON extends Service

```
    boolean firstTime
    price(boolean fisrtTime)
        disc
```

WEBAPP extends Service

```
    Date releaseDate
    price(Date releaseDate)
        if 1
        if 2
        if 3
```

HOSTING extends Service

```
   int usage
   int bits
   price(int usage,  int  bits)
        xtraMb = (usage - 100 )%100
        xtrabits = (bits - 1000)%1000
        xtraMBprice = super.basePrice *.01 + xtraMb*(super.basePrice*.005)
        xtraBitPrice = super.basePrice *.02 + xtraMb*(super.basePrice*.01)
        return (xtraMbprice+xtraBitPrice)
```

Instructions

- Build a class diagram
- Implement the classes
- Build a demo class to show each service working