



AOSI

ZA OBIČNE .NET PROGRAMERE

Dan AAI@EduHr

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cilj prezentacije?

- ukratko opisati AOSI
- pokazati i dati funkcionirajuće programe, **za lagan početak**

disclaimer

- ja **nisam ekspert** za AOSI nego tek izvjestitelj o onome što sam pronašao o načinu pristupa AAI podacima dostupnima kroz AOSI servis iz .NET svijeta
- ako primijetite da nešto nije točno, molim ispravke

pedigre

- voditelj Službe za informatiku na FFZG
- cijeli život manje ili više *developer*, od 1975.
- BASIC, Fortran, assembler, C, C#, VB.NET

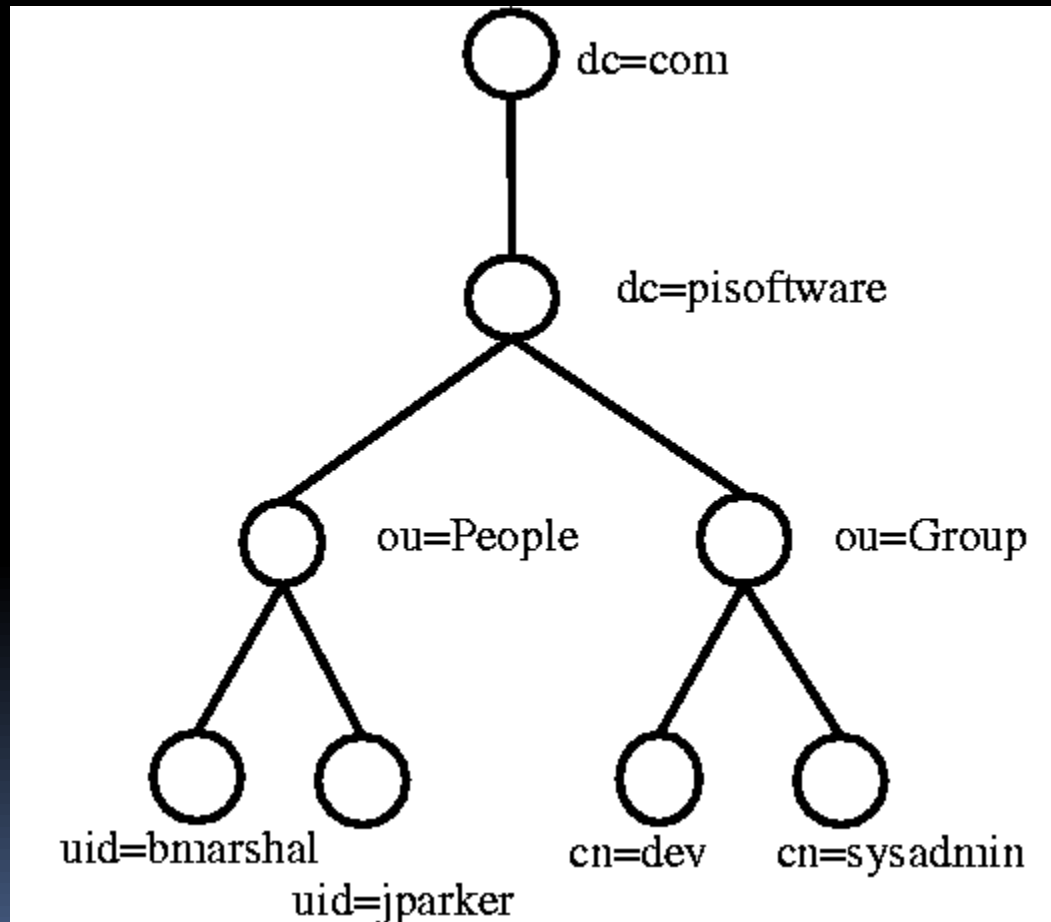
- nikad nisam ništa programski radio s Active Directory ni LDAP poslužiteljima
- ali, imam potrebu dohvatiti naše korisničke podatke pohranjene u LDAP i AOSI servisima

ipak, spomenimo se LDAP-a

- http://quark.humbug.org.au/publications/ldap/ldap_tut.html
- spremište hijerarhijski povezanih stavaka
- protokol za pristup i pretraživanje
- inicijalno X.500 standard telefonskih kompanija
- trenutno verzija 3
- sprema podatke u UTF-8 i ima SSL

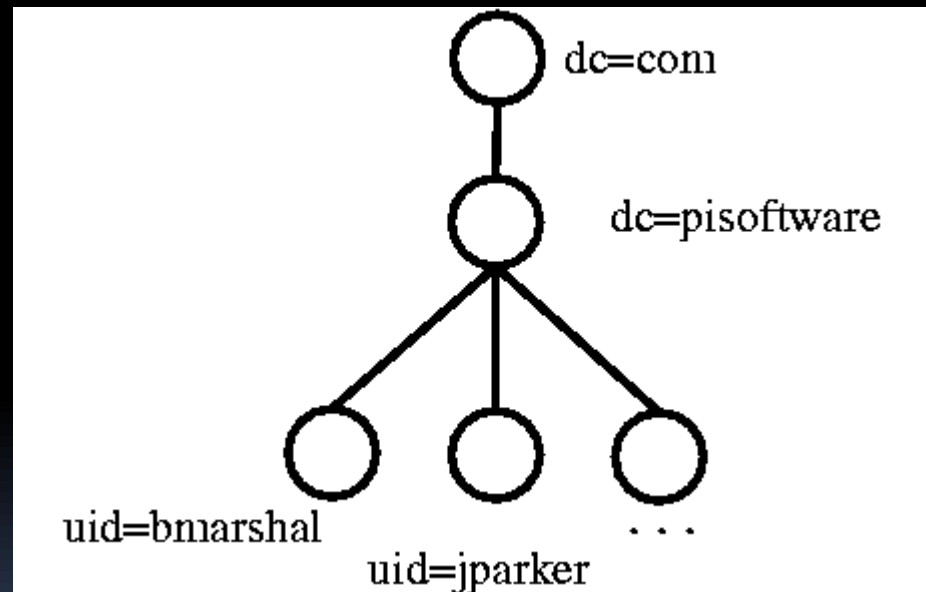
hijerarhijska organizacija

(sa http://quark.humbug.org.au/publications/ldap/ldap_tut.html)



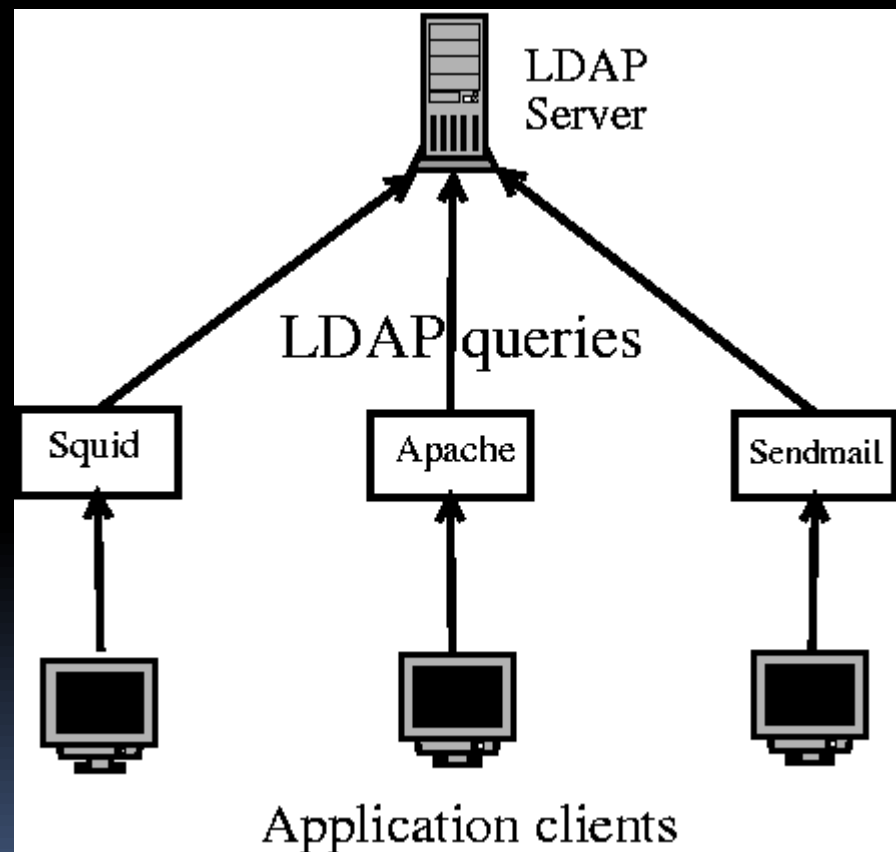
flat organizacija

(sa http://quark.humbug.org.au/publications/ldap/ldap_tut.html)



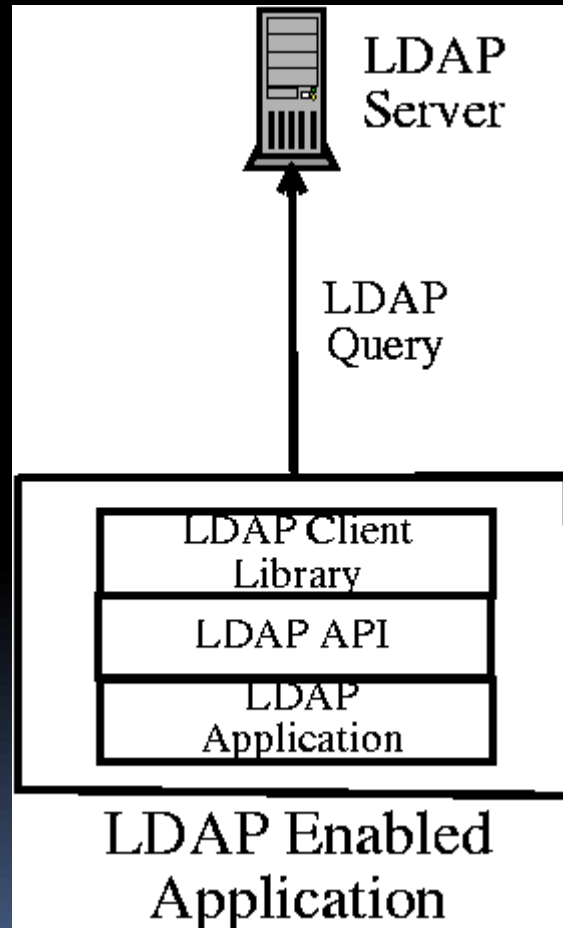
raznovrsni korisnici / aplikacije

(sa http://quark.humbug.org.au/publications/ldap/ldap_tut.html)



pojedinačni klijent

(sa http://quark.humbug.org.au/publications/ldap/ldap_tut.html)

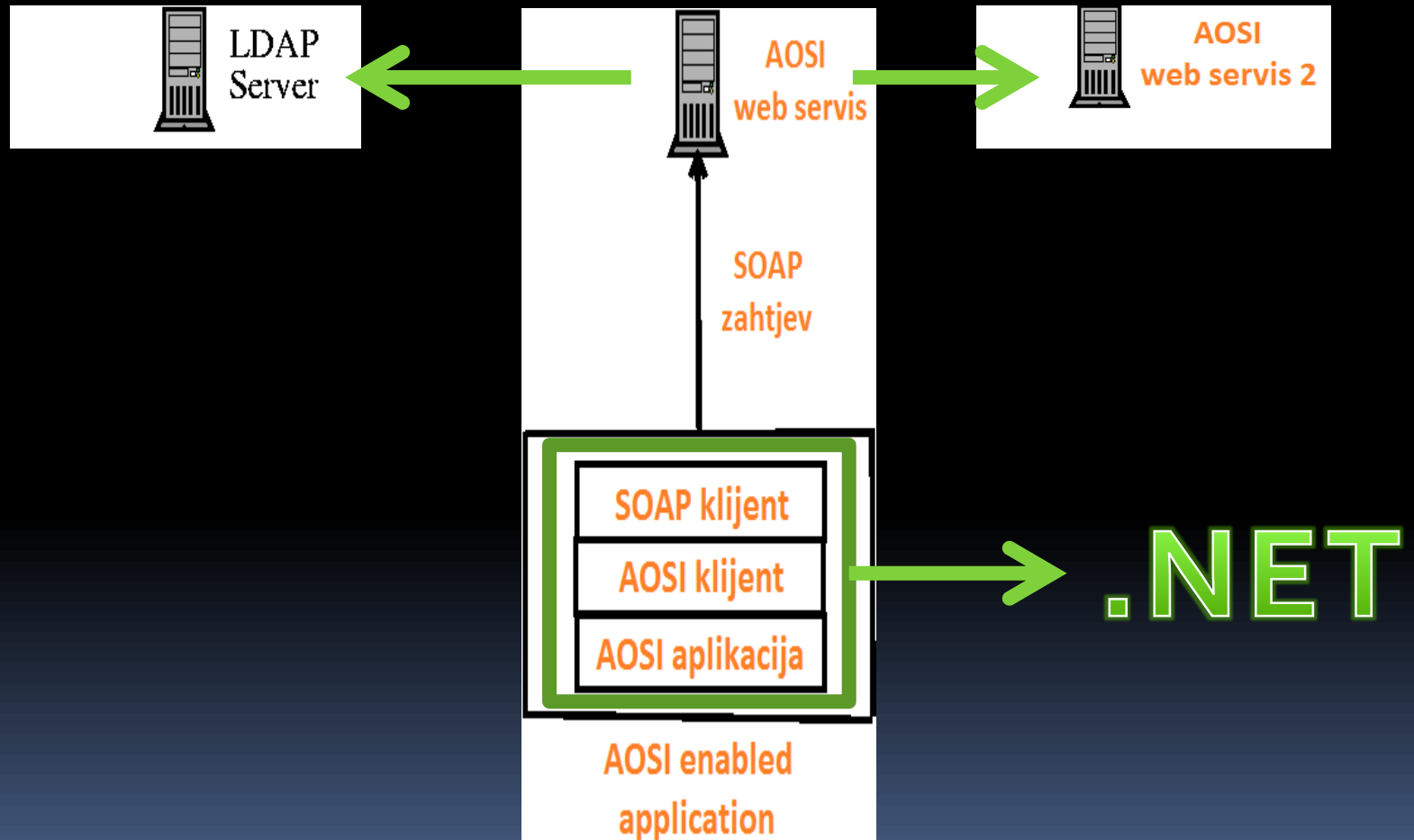


općenito o AOSI servisu

- proizvod AAIEDU.HR tima
- omogućuje administriranje imenika kroz veb aplikaciju
- ima programski API nalik na C LDAP API
- tehnički, AOSI je *web service*

pojedinačni klijent

(sa http://quark.humbug.org.au/publications/ldap/ldap_tut.html)



Prednosti AOSI pristupa

- u skladu s AAIEDU preporukama
- lagano korištenje
 - jednostavan postupak dodavanja 'reference na web servis'
 - eksplicitno tipizirani programsko sučelje
 - Intelli-sense na programskom sučelju
- omogućuje korištenje AOSI pluginova
 - forsira ispravnost podataka koju LDAP ne može dati
 - omogućuje korištenje gotovih besplatnih AAI interoperability pluginova



DEMOS

AOSI demo programi

- komandnolinijski programi
- koriste *AOSI web service*
- samo slike ekrana, ništa uživo
- VB.NET

VB.NET vs. C#

- C# nalikuje na C i C++
 - VB.NET nalikuje na stari VB
 - oba se kompajliraju u MSIL
 - oba koriste identične programske biblioteke
-
- sintaktičke razlike
 - 95% stvari je isto
 - VB.NET je bolji u korištenju XML-a

AOSI DEMO 1

- pokazuje način korištenja osnovnih funkcija AOSI servisa
- testira postojanje jednog korisnika
- ispisuje vraćene XML rezultate
- U ovom primjeru je pokazano 'dodavanje web reference' na web servis

Module1.vb* X

Module1

(Declarations)

Module Module1

```
Dim ws As New AosiWs.AOSIServicePortTypeClient
Dim errBuff(1024) As Byte      ' unaprijed alocirani prostor za odgovore, polje bajtova
Dim resultBuff(10240) As Byte ' unaprijed alocirani prostor za odgovore, polje bajtova
Dim wsResult As Integer

Dim adminUid = "pgklada"      ' password korisnika s ulogom 'administrator imenika'
Dim adminPwd = "password"     ' ovdje dodje password korisnika s ulogom 'administrator imenika'
Dim baseDn = "dc=ffzg,dc=hr"

Sub Main()

    System.Net.ServicePointManager.Expect100Continue = False ' default is true, and it does not work with
    ' da biste bili u stanju dodati korisnika u XML konstantu userAddXml treba upisati ispravan OIB !!!

    Console.WriteLine(userExist("pgklada"))
    'Console.WriteLine(ldapAdminInfo("pgklada"))
    'Console.WriteLine(userOrgInfo())
    'Console.WriteLine(ldapSearch("&(sn=Horvat)(givenName=Ivana)", ""))
    'Console.WriteLine(ldapAddUserLE(userAddXml))
    'Console.WriteLine(ldapDeleteUser(userDeleteXml))
    'Console.WriteLine(ldapModifyAttribute(userModifyAttributeXml))
    'Console.WriteLine(ldapAddAttribute(userAddAttributeXml))
    'Console.WriteLine(ldapDeleteAttribute(userDeleteAttributeXml))

    Console.WriteLine("Press any key...") : Console.ReadKey()

End Sub
```

Debug

x86

name

IdapSearch

osiWs.AOSIServicePortTypeClient

4) As Byte ' unaprijed alocirani prostor za odgovore, polje bajtova

10240) As Byte ' unaprijed alocirani prostor za odgovore, polje bajtova

Integer

'pgklada" ' password korisnika s ulogom 'administrator imenika'

'password" ' ovdje dodje password korisnika s ulogom 'administrator imenika'

c=ffzg,dc=hr"

ServicePointManager.Expect100Continue = False ' default is true, and it does not

pili u stanju dodati korisnika u XML konstantu userAddXml treba upisati ispravan

teLine(userExist("pgklada"))

teLine(ldapAdminInfo("pgklada"))

teLine(userOrgInfo())

teLine(ldapSearch("&(sn=Horvat)(givenName=Ivana)", ""))

teLine(ldapAddUserLE(userAddXml))

teLine(ldapDeleteUser(userDeleteXml))

teLine(ldapModifyAttribute(userModifyAttributeXml))

teLine(ldapAddAttribute(userAddAttributeXml))

teLine(ldapDeleteAttribute(userDeleteAttributeXml))

teLine("Press any key...") : Console.ReadKey()

Solution Explorer

AOSItest5

My Project

Service References

AosiWs

app.config

Module1.vb

Debug

x86

name

IdapSearch

osiWs.AOSIServicePortTypeClient

```
4) As Byte ' unaprijed alocirani prostor za odgovore, polje bajtova
10240) As Byte ' unaprijed alocirani prostor za odgovore, polje bajtova
Integer
```

```
'pgklada" ' password korisnika s ulogom 'administrator imenika'
'password" ' ovdje dodje password korisnika s ulogom 'administrator imenika'
c=ffzg,dc=hr"
```

```
ServicePointManager.Expect100Continue = False ' default is true, and it does not
```

```
pili u stanju dodati korisnika u XML konstantu userAddXml treba upisati ispravan
```

```
teLine(userExist("pgklada"))
iteLine(ldapAdminInfo("pgklada"))
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iteLine(ldapAddUserLE(userAddXml))
iteLine(ldapDeleteUser(userDeleteXml))
iteLine(ldapModifyAttribute(userModifyAttributeXml))
iteLine(ldapAddAttribute(userAddAttributeXml))
iteLine(ldapDeleteAttribute(userDeleteAttributeXml))
```

```
teLine("Press any key...") : Console.ReadKey()
```

Solution Explorer

AOSItest5

My Project

Service References

Add Service Reference...

Exclude From Project

Cut

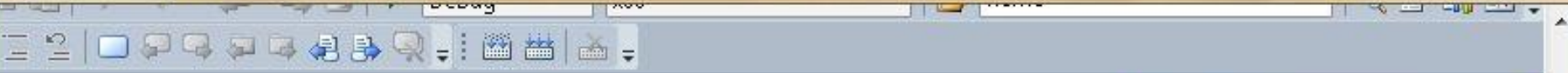
Copy

Paste

Delete

Rename

Properties



Solution Explorer

Add Service Reference

To see a list of available services on a specific server, enter a service URL and click Go. To browse for available services, click Discover.

Address:

Go

Discover

Services:

Operations:

Services	Operations

Namespace:

Advanced...

OK

Cancel

Sitest5

My Project

Service References

app.config

Module1.vb

Add Service Reference

To see a list of available services on a specific server, enter a service URL and click Go. To browse for available services, click Discover.

Address:

https://ldap.ffzg.hr:1443/wsdl

Go

Discover

Services:

Operations:

Namespace:

AosiWs

Advanced...

OK

Cancel

Solution Explorer

Sitest5

My Project

Service References

app.config

Module1.vb

Add Service Reference

To see a list of available services on a specific server, enter a service URL and click Go. To browse for available services, click Discover.

Address:

<https://ldap.ffzg.hr:1443/wsdl>

Go

Discover

Services:

Operations:

-  AOSIService

Select a service contract to view its operations.

1 service(s) found at address 'https://ldap.ffzg.hr:1443/wsdl'.

Namespace:

AosiWs

Advanced...

OK

Cancel

Solution Explorer

Sitest5

My Project

Service References

app.config

Module1.vb

ule1

```
As New AosiWs.AOSIServicePortTypeClient
```

```
rBuff(1024) As Byte ' unaprijed alocirani prostor za odgovore, polje bajtova
```

```
sultBuff(10240) As Byte ' unaprijed alocirani prostor za odgovore, polje bajtova
```

```
Result As Integer
```

```
minUid = "pgklada" ' password korisnika s ulogom 'administrator imenika'
```

```
minPwd = "password" ' ovdje dodje password korisnika s ulogom 'administrator imenika'
```

```
seDn = "dc=ffzg,dc=hr"
```

```
in()
```

```
stem.Net.ServicePointManager.Expect100Continue = False ' default is true, and it does not
```

da biste bili u stanju dodati korisnika u XML konstantu userAddXml treba upisati ispravan

```
console.WriteLine(userExist("pgklada"))
```

```
console.WriteLine(ldapAdminInfo("pgklada"))
```

```
console.WriteLine(userOrgInfo())
```

```
console.WriteLine(ldapSearch("&(sn=Horvat)(givenName=Ivana)", ""))
```

```
console.WriteLine(ldapAddUserLE(userAddXml))
```

```
console.WriteLine(ldapDeleteUser(userDeleteXml))
```

```
console.WriteLine(ldapModifyAttribute(userModifyAttributeXml))
```

```
console.WriteLine(ldapAddAttribute(userAddAttributeXml))
```

```
console.WriteLine(ldapDeleteAttribute(userDeleteAttributeXml))
```

```
console.WriteLine("Press any key...") : Console.ReadKey()
```

b

Solution Explorer



AOSItest5

My Project

Service References

AosiWs

app.config

Module1.vb

Module1.vb* X

Module1

(Declarations)

Module Module1

```
Dim ws As New AosiWs.AOSIServicePortTypeClient
Dim errBuff(1024) As Byte      ' unaprijed alocirani prostor za odgovore, polje bajtova
Dim resultBuff(10240) As Byte ' unaprijed alocirani prostor za odgovore, polje bajtova
Dim wsResult As Integer

Dim adminUid = "pgklada"      ' password korisnika s ulogom 'administrator imenika'
Dim adminPwd = "password"     ' ovdje dodje password korisnika s ulogom 'administrator imenika'
Dim baseDn = "dc=ffzg,dc=hr"
```

Sub Main()

```
System.Net.ServicePointManager.Expect100Continue = False ' default is true, and it does not work with
```

```
' da biste bili u stanju dodati korisnika u XML konstantu userAddXml treba upisati ispravan OIB !!!
```

```
Console.WriteLine(userExist("pgklada"))
' Console.WriteLine(ldapAdminInfo("pgklada"))
' Console.WriteLine(userOrgInfo())
' Console.WriteLine(ldapSearch("&(sn=Horvat)(givenName=Ivana)", ""))
' Console.WriteLine(ldapAddUserLE(userAddXml))
' Console.WriteLine(ldapDeleteUser(userDeleteXml))
' Console.WriteLine(ldapModifyAttribute(userModifyAttributeXml))
' Console.WriteLine(ldapAddAttribute(userAddAttributeXml))
' Console.WriteLine(ldapDeleteAttribute(userDeleteAttributeXml))
```

```
Console.WriteLine("Press any key...") : Console.ReadKey()
```

End Sub

Module1.vb* X

Module1

IdapSearch

```
Function userOrgInfo() As String
```

```
    wsResult = ws.userOrgInfo(  
        errBuff, resultBuff,  
        adminUid, Encode64(adminPwd), baseDn  
    )
```

```
    Return wsStatus()
```

```
End Function
```

```
Function ldapAdminInfo(uid As String) As String
```

```
    wsResult = ws.ldapAdminInfo(  
        errBuff, resultBuff,  
        adminUid, Encode64(adminPwd), baseDn,  
        uid  
    )
```

```
    Return wsStatus()
```

```
End Function
```

```
Function userExist(uid As String) As String
```

```
    wsResult = ws.ldapUserExists(  
        errBuff, resultBuff,  
        adminUid, Encode64(adminPwd), baseDn,  
        uid)
```

```
    Return wsStatus()
```

```
result 0:  
<ldap action="ldapUserExists" version="3.0.20110525">  
  <entry dn="uid=pgklada,dc=ffzg,dc=hr">  
    <attribute ldapname="uid">  
      <value>pgklada</value>  
    </attribute>  
  </entry>  
</ldap>  
Press any key...
```

file:///C:/Users/gju/Documents/My Dropbox/_LDAP presentation/_AOSI/New folder/AOSIttest5/AOSIttest5/bin/Debug/AOSIttest5.E...

```
result 0:  
<ldap action="ldapUserExists" version="3.0.20110525"></ldap>  
Press any key...
```

Module1.vb* X

Module1

IdapSearch

```
Function userOrgInfo() As String
```

```
    wsResult = ws.userOrgInfo(  
        errBuff, resultBuff,  
        adminUid, Encode64(adminPwd), baseDn  
    )
```

```
    Return wsStatus()
```

```
End Function
```

```
Function ldapAdminInfo(uid As String) As String
```

```
    wsResult = ws.ldapAdminInfo(  
        errBuff, resultBuff,  
        adminUid, Encode64(adminPwd), baseDn,  
        uid  
    )
```

```
    Return wsStatus()
```

```
End Function
```

```
Function userExist(uid As String) As String
```

```
    wsResult = ws.ldapUserExists(  
        errBuff, resultBuff,  
        adminUid, Encode64(adminPwd), baseDn,  
        uid)
```

```
    Return wsStatus()
```

```
result 0:  
<ldap action="ldapAdminInfo" version="3.0.20110525">  
  <entry dn="uid=pgklada,dc=ffzg,dc=hr" admintype="1"></entry>  
  <entry dn="uid=pgklada,dc=ffzg,dc=hr" admintype="2"></entry>  
</ldap>
```

Press any key...

file:///C:/Users/gju/Documents/My Dropbox/_LDAP presentation/_AOSI/New folder/AOSItest5/AOSI...



result 0:

```
<ldap action="ldapAdminInfo" version="3.0.20110525">
```

```
  <entry dn="uid=ihorvat,dc=ffzg,dc=hr" admintype="0"></entry>
```

```
</ldap>
```

Press any key...

Module1.vb* X

Module1

IdapSearch

```
Function userOrgInfo() As String
```

```
    wsResult = ws.userOrgInfo(  
        errBuff, resultBuff,  
        adminUid, Encode64(adminPwd), baseDn  
    )
```

```
    Return wsStatus()
```

```
End Function
```

```
Function ldapAdminInfo(uid As String) As String
```

```
    wsResult = ws.ldapAdminInfo(  
        errBuff, resultBuff,  
        adminUid, Encode64(adminPwd), baseDn,  
        uid  
    )
```

```
    Return wsStatus()
```

```
End Function
```

```
Function userExist(uid As String) As String
```

```
    wsResult = ws.ldapUserExists(  
        errBuff, resultBuff,  
        adminUid, Encode64(adminPwd), baseDn,  
        uid)
```

```
    Return wsStatus()
```

file:///C:/Users/gju/Documents/My Dropbox/_LDAP presentation/_AOSI/New folder/AOSItest5/AOSI...

result 0:

```
<ldap action="userOrgInfo" version="3.0.20110525">
  <entry dn="dc=ffzg,dc=hr">
    <attribute ldapname="objectClass">
      <value>organization</value>
      <value>dcObject</value>
      <value>hrEduOrg</value>
      <value>schacContactLocation</value>
    </attribute>
    <attribute ldapname="dc">
      <value>ffzg</value>
    </attribute>
    <attribute ldapname="l">
      <value>Zagreb</value>
    </attribute>
    <attribute ldapname="postalCode">
      <value>HR-10000</value>
    </attribute>
    <attribute ldapname="telephoneNumber">
      <value>+38516120111</value>
    </attribute>
  </entry>
</ldap>
```


Module1

IdapSearch

```
Function ldapDeleteUser(userXml As XElement) As String
```

```
    wsResult = ws.ldapDeleteUser(  
        errBuff, resultBuff,  
        adminUid, Encode64(adminPwd), baseDn,  
        userXml.ToString  
    )
```

```
    Return wsStatus()
```

```
End Function
```

```
Function ldapAddUserLE(userXml As XElement) As String
```

```
    wsResult = ws.ldapAddUserLE(  
        errBuff, resultBuff,  
        adminUid, Encode64(adminPwd), baseDn,  
        userXml.ToString  
    )
```

```
    Return wsStatus()
```

```
End Function
```

```
Function ldapSearch(filter As String, fields As String) As String
```

```
    wsResult = ws.ldapSearch(  
        errBuff, resultBuff,  
        adminUid, Encode64(adminPwd), baseDn,  
        filter, fields)
```

```
    Return wsStatus()
```

```
Dim filter(0 To 12) As String
filter(0) = Nothing
filter(1) = "(sn=Horvat)"
filter(2) = "(givenName=Ivana)"
filter(3) = "&(sn=Horvat)(givenName=Ivana)"
filter(4) = "(sn=Horv*)" ' Horvat, Horvatek, Horvačić, Horvatović...
filter(5) = "&(sn=Horv*)(!sn=Horvatek)" ' Horvat, Horvačić, Horvatović...
filter(6) = "&(&(sn=Horvat)(givenName=Ivana)(!uid=ihorvat6))" ' this filter and the following get same
filter(7) = "&((sn=Horvat)(givenName=Ivana)(!uid=ihorvat6))" ' operators work on more than two operat
filter(8) = "&(givenName=Ivana)(|(sn=Horvat)(sn=Krizmanić)(sn=Cencelj))" ' I. Horvat, I. Krizmanić, I
filter(9) = "&(givenName=Ivana)(sn=Ivan*)" ' I. Ivančić, I. Ivanović, I. Ivandić...
filter(10) = "&(objectClass=*)(givenName=jasmin)"
filter(11) = "&(hrEduPersonRole=administrator imenika)"
filter(12) = "&(hrEduPersonRole=administrator imenika)(|(givenName=Luka)(givenName=Jasmin))"

'now we are connected and can do the rest of the job
'walk the LDAP tree and and print the data
Try
    ListLdapEntryAndChildren(startingPointLdapEntry, filter(3))
Catch ex As Exception
    Console.WriteLine("Main program processing exception: " & ex.Message)
End Try

' close the LDAP connection
If startingPointLdapEntry IsNot Nothing Then
    Try
        startingPointLdapEntry.Close()
        startingPointLdapEntry.Dispose()
    Catch ex As Exception
        Console.WriteLine("Main program has failed to close the startingPointLdapEntry: " & ex.Message)
    End Try
End If
```

result 0:

```
<ldap action="ldapSearch" version="3.0.20110525">
  <entry dn="uid=ihorvat,dc=ffzg,dc=hr">
    <attribute ldapname="uid">
      <value>ihorvat</value>
    </attribute>
    <attribute ldapname="userPassword">
      <value>{SHA}h68[REDACTED]/t6ZJDgaU=</value>
    </attribute>
    <attribute ldapname="givenName">
      <value>Ivana</value>
    </attribute>
    <attribute ldapname="sn">
      <value>Horvat</value>
    </attribute>
    <attribute ldapname="hrEduPersonOIB">
      <value>9[REDACTED]2</value>
    </attribute>
    <attribute ldapname="mail">
      <value>i[REDACTED]ffzg.hr</value>
    </attribute>
    <attribute ldapname="hrEduPersonPrimaryAffiliation">
      <value>student</value>
    </attribute>
```

Module1

IdapSearch

```
Function ldapDeleteUser(userXml As XElement) As String
```

```
    wsResult = ws.ldapDeleteUser(  
        errBuff, resultBuff,  
        adminUid, Encode64(adminPwd), baseDn,  
        userXml.ToString  
    )
```

```
    Return wsStatus()
```

```
End Function
```

```
Function ldapAddUserLE(userXml As XElement) As String
```

```
    wsResult = ws.ldapAddUserLE(  
        errBuff, resultBuff,  
        adminUid, Encode64(adminPwd), baseDn,  
        userXml.ToString  
    )
```

```
    Return wsStatus()
```

```
End Function
```

```
Function ldapSearch(filter As String, fields As String) As String
```

```
    wsResult = ws.ldapSearch(  
        errBuff, resultBuff,  
        adminUid, Encode64(adminPwd), baseDn,  
        filter, fields)
```

```
    Return wsStatus()
```

Module1.vb* X

Module1

IdapSearch

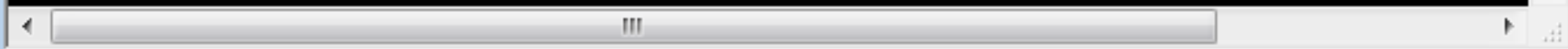
```
Dim userAddXml =  
  <ldap action="ldapAddUser">  
    <entry dn="uid=pgklada2,dc=ffzg,dc=hr">  
      <attribute ldapname="cn">  
        <value>Gjuro Kladarić</value>  
      </attribute>  
      <attribute ldapname="givenName">  
        <value>Gjuro</value>  
      </attribute>  
      <attribute ldapname="hrEduPersonAffiliation">  
        <value>djelatnik</value>  
      </attribute>  
      <attribute ldapname="hrEduPersonExpireDate">  
        <value>NONE</value>  
      </attribute>  
      <attribute ldapname="hrEduPersonPrimaryAffiliation">  
        <value>djelatnik</value>  
      </attribute>  
      <attribute ldapname="hrEduPersonUniqueNumber">  
        <value>OIB: [OVDJE TREBA UPISATI ISPRAVAN OIB!!!] </value>  
      </attribute>  
      <attribute ldapname="mail">  
        <value>pgklada2@ffzg.hr</value>  
      </attribute>  
      <attribute ldapname="sn">  
        <value>Kladarić</value>  
      </attribute>  
      <attribute ldapname="uid">  
        <value>pgklada2</value>  
      </attribute>  
      <attribute ldapname="userPassword">  
        <value>jaSamMaliMishKojiNeZnaNish</value>  
      </attribute>
```

```
result 0:  
<ldap action="ldapAddUserLF" version="3.0.20110525">  
  <entry dn="uid=pgklada2,dc=ffzg,dc=hr">  
    <before_plugin_status name="LDIFSync" code="0">dc=ffzg,dc=hr</before_plugin_status>  
    <before_plugin_status name="FFZGntlm" code="0">NTLM hash generated successfully</before_plugin_status>  
    <before_plugin_status name="FFZGoibmandatory" code="0">OK</before_plugin_status>  
    <before_plugin_status name="Unique" code="0">OK</before_plugin_status>  
    <status code="0">User added successfully!</status>  
    <after_plugin_status name="LDIFSync" code="0">User added successfully!</after_plugin_status>  
    <after_plugin_status name="FFZGntlm" code="0">OK</after_plugin_status>  
    <after_plugin_status name="FFZGoibmandatory" code="0">OK</after_plugin_status>  
    <after_plugin_status name="Unique" code="0">OK</after_plugin_status>  
  </entry>  
</ldap>  
Press any key...
```

file:///C:/Users/gju/Documents/My Dropbox/_LDAP presentation/_AOSI/New folder/AOSItest5/AOSI...



LDAP error 68: 1 error(s) occurred!
Press any key...



Module1

LdapSearch

```
Dim userDeleteXml =  
  <ldap action="ldapDeleteUser">  
    <entry dn="uid=pgklada2,dc=ffzg,dc=hr">  
      </entry>  
    </ldap>  
  
Dim userModifyAttributeXml =  
  <ldap action="ldapModifyAttribute">  
    <entry dn="uid=pgklada2,dc=ffzg,dc=hr">  
      <attribute ldapname="hrEduPersonExpireDate">  
        <value>20121231</value>  
      </attribute>  
    </entry>  
  </ldap>  
  
Dim userAddAttributeXml =  
  <ldap action="ldapAddAttribute">  
    <entry dn="uid=pgklada2,dc=ffzg,dc=hr">  
      <attribute ldapname="mobile">  
        <value>099/999-9999</value>  
      </attribute>  
    </entry>  
  </ldap>  
  
Dim userDeleteAttributeXml =  
  <ldap action="ldapDeleteAttribute">  
    <entry dn="uid=pgklada2,dc=ffzg,dc=hr">  
      <attribute ldapname="mobile">  
        </attribute>  
    </entry>  
  </ldap>
```


Module1

IdapSearch

```
Function ldapDeleteUser(userXml As XElement) As String
```

```
    wsResult = ws.ldapDeleteUser(  
        errBuff, resultBuff,  
        adminUid, Encode64(adminPwd), baseDn,  
        userXml.ToString  
    )
```

```
    Return wsStatus()
```

```
End Function
```

```
Function ldapAddUserLE(userXml As XElement) As String
```

```
    wsResult = ws.ldapAddUserLE(  
        errBuff, resultBuff,  
        adminUid, Encode64(adminPwd), baseDn,  
        userXml.ToString  
    )
```

```
    Return wsStatus()
```

```
End Function
```

```
Function ldapSearch(filter As String, fields As String) As String
```

```
    wsResult = ws.ldapSearch(  
        errBuff, resultBuff,  
        adminUid, Encode64(adminPwd), baseDn,  
        filter, fields)
```

```
    Return wsStatus()
```

```
result 0:  
<ldap action="ldapDeleteUser" version="3.0.20110525">  
  <entry dn="uid=pgklada2,dc=ffzg,dc=hr">  
    <before_plugin_status name="LDIFSync" code="0">dc=ffzg,dc=hr</before_plugin_status>  
    <status code="0">User deleted successfully!</status>  
    <after_plugin_status name="LDIFSync" code="0">User deleted successfully!</after_plugin_status>  
  </entry>  
</ldap>  
Press any key...
```

Module1.vb* X

Module1

(Declarations)

```
Function ldapDeleteAttribute(userXml As XElement) As String
```

```
    wsResult = ws.ldapDeleteAttribute(  
        errBuff, resultBuff,  
        adminUid, Encode64(adminPwd), baseDn,  
        userXml.ToString  
    )
```

```
    Return wsStatus()
```

```
End Function
```

```
Function ldapAddAttribute(userXml As XElement) As String
```

```
    wsResult = ws.ldapAddAttribute(  
        errBuff, resultBuff,  
        adminUid, Encode64(adminPwd), baseDn,  
        userXml.ToString  
    )
```

```
    Return wsStatus()
```

```
End Function
```

```
Function ldapModifyAttribute(userXml As XElement) As String
```

```
    wsResult = ws.ldapModifyAttribute(  
        errBuff, resultBuff,  
        adminUid, Encode64(adminPwd), baseDn,  
        userXml.ToString  
    )
```

```
result 0:  
<ldap action="ldapModifyAttribute" version="3.0.20110525">  
  <entry dn="uid=pgklada2,dc=ffzg,dc=hr">  
    <before_plugin_status name="LDIFSync" code="0">dc=ffzg,dc=hr</before_plugin_status>  
    <before_plugin_status name="FFZGntlm" code="0">NTLM hash was not generated</before_plugin_status>  
    <before_plugin_status name="FFZGoibmandatory" code="0">OK</before_plugin_status>  
    <before_plugin_status name="Unique" code="0">OK</before_plugin_status>  
    <status code="0">Modified attribute hrEduPersonExpireDate!</status>  
    <after_plugin_status name="LDIFSync" code="0">Modified attribute hrEduPersonExpireDate!</after_plugin_status>  
    <after_plugin_status name="FFZGntlm" code="0">Skipped</after_plugin_status>  
    <after_plugin_status name="FFZGoibmandatory" code="0">OK</after_plugin_status>  
  </entry>  
</ldap>  
Press any key...
```

Module1.vb* X

Module1

(Declarations)

```
Function ldapDeleteAttribute(userXml As XElement) As String
```

```
    wsResult = ws.ldapDeleteAttribute(  
        errBuff, resultBuff,  
        adminUid, Encode64(adminPwd), baseDn,  
        userXml.ToString  
    )
```

```
    Return wsStatus()
```

```
End Function
```

```
Function ldapAddAttribute(userXml As XElement) As String
```

```
    wsResult = ws.ldapAddAttribute(  
        errBuff, resultBuff,  
        adminUid, Encode64(adminPwd), baseDn,  
        userXml.ToString  
    )
```

```
    Return wsStatus()
```

```
End Function
```

```
Function ldapModifyAttribute(userXml As XElement) As String
```

```
    wsResult = ws.ldapModifyAttribute(  
        errBuff, resultBuff,  
        adminUid, Encode64(adminPwd), baseDn,  
        userXml.ToString  
    )
```

```
result 0:  
<ldap action="ldapAddAttribute" version="3.0.20110525">  
  <entry dn="uid=pgklada2,dc=ffzg,dc=hr">  
    <before_plugin_status name="LDIFSync" code="0">dc=ffzg,dc=hr</before_plugin_status>  
    <before_plugin_status name="FFZGntlm" code="0">NTLM hash was not generated</before_plugin_status>  
    <before_plugin_status name="FFZGoibmandatory" code="0">OK</before_plugin_status>  
    <before_plugin_status name="Unique" code="0">OK</before_plugin_status>  
    <status code="0">Added attribute mobile!</status>  
    <after_plugin_status name="LDIFSync" code="0">Added attribute mobile!</after_plugin_status>  
    <after_plugin_status name="FFZGntlm" code="0">Skipped</after_plugin_status>  
    <after_plugin_status name="FFZGoibmandatory" code="0">OK</after_plugin_status>  
    <after_plugin_status name="Unique" code="0">OK</after_plugin_status>  
  </entry>  
</ldap>  
Press any key...
```

Module1.vb* X

Module1

(Declarations)

```
Function ldapDeleteAttribute(userXml As XElement) As String
```

```
    wsResult = ws.ldapDeleteAttribute(  
        errBuff, resultBuff,  
        adminUid, Encode64(adminPwd), baseDn,  
        userXml.ToString  
    )
```

```
    Return wsStatus()
```

```
End Function
```

```
Function ldapAddAttribute(userXml As XElement) As String
```

```
    wsResult = ws.ldapAddAttribute(  
        errBuff, resultBuff,  
        adminUid, Encode64(adminPwd), baseDn,  
        userXml.ToString  
    )
```

```
    Return wsStatus()
```

```
End Function
```

```
Function ldapModifyAttribute(userXml As XElement) As String
```

```
    wsResult = ws.ldapModifyAttribute(  
        errBuff, resultBuff,  
        adminUid, Encode64(adminPwd), baseDn,  
        userXml.ToString  
    )
```

```
result 0:  
<ldap action="ldapDeleteAttribute" version="3.0.20110525">  
  <entry dn="uid=pgklada2,dc=ffzg,dc=hr">  
    <before_plugin_status name= LDIFSync code="0">dc=ffzg,dc=hr<  
status>  
    <before_plugin_status name="FFZGntlm" code="0">NTLM hash was  
before_plugin_status>  
    <before_plugin_status name="FFZGoibmandatory" code="0">OK</be  
tus>  
    <before_plugin_status name="lunique" code="0">OK</before_plugi  
<status code="0">Deleted attribute mobile!</status>  
    <after_plugin_status name= LDIFsync code= 0">Deleted attribu  
er_plugin_status>  
    <after_plugin_status name="FFZGntlm" code="0">Skipped</after_  
    <after_plugin_status name="FFZGoibmandatory" code="0">OK</aft  
s>  
    <after_plugin_status name="Unique" code="0">OK</after_plugin_  
  </entry>  
</ldap>  
Press any key...
```


Module1.vb* X

Module1

IdapSearch

`End Function``Function wsStatus() As String``Dim s = wssStatus()``My.Computer.Clipboard.SetText(s)``Return s``End Function``Function wssStatus() As String``If wsResult = 0 Then``Return "result 0: " & vbCrLf &``XDocument.Parse(``System.Text.Encoding.UTF8.GetString(resultBuff)``).ToString``ElseIf wsResult > 0 Then``Return "LDAP error " & wsResult & ": " & System.Text.Encoding.UTF8.GetString(errBuff)``Else``Return "AOSI error " & wsResult & ": " & System.Text.Encoding.UTF8.GetString(errBuff)``End If``End Function``Function Encode64(s As String) As String``Return System.Convert.ToBase64String(System.Text.Encoding.UTF8.GetBytes(s))``End Function`

AOSI DEMO 2

- ulaz: popis sa 5000 OIB-a (iz ISVU-a)
- problem: kojih je to 5000 uid-a
- koristi samo dvije AOSI funkcije:
 - 'traži' i
 - 'promijeni vrijednost atributa'
- SPORO (cca 1 sec/zahtjev, skoro sat vremena za 5000 korisnika)
- ali – radi i jednostavno je

AOSI DEMO 3

- kombinira 100 zahtjeva za traženje u jedan
- priprema zajednički filter za 100 OIB-a
- dobiva odjednom podatke za 100 korisnika
- ukupno traženje traje **2 minute**
- **AOSI dio izdvojen u AosiMechanics.vb**
- pojedinačno mijenja vrijednost atributa
- i kod promjene vrijednosti atributa zahtjevi bi se mogli kombinirati (valjda 😊)

što je potrebno za krenuti?

- skinuti prezentaciju s primjerima programa (adresa na zadnjem slajdu)
- primjeri su kompletni VS projekti
- obrisati referencu na web-servis FF-a (sljedeći slajd)
- dodati referencu na vlastiti web servis (slajdovi s početka prezentacije)
- i – to je to 😊

Kako obrisati referencu?

The screenshot shows the Microsoft Visual Studio IDE with a project named 'AOSInew'. The main window displays the code for 'Module1.vb'. A context menu is open over the 'AosiWs' service reference in the 'Solution Explorer'. The menu items are:

- Update Service Reference
- Configure Service Reference...
- View in Object Browser
- Cut (Ctrl+X)
- Copy (Ctrl+C)
- Paste (Ctrl+V)
- Delete (Del)** (highlighted)
- Rename
- Properties (Alt+Enter)

The code in the background includes:

```
Module Module1

    Dim ws As New AosiWs.AOSIServicePortTypeClient
    Dim errBuff(1024) As Byte
    Dim resultBuff(10240) As Byte
    Dim wsResult As Integer

    Dim adminUid = "pgklada"
    Dim adminPwd = "ovdje dodje passwo"
    Dim baseDn = "dc=ffzg,dc=hr"

    Sub Main()
        init()

        Dim all_oibs_as_a_string = My.Computer.FileSystem.SpecialDirectories.AllOibs
        Dim all_oibs() As String = all_oibs_as_a_string.Split(System.Text.UTF8Encoding.UTF8.GetString(all_oibs_as_a_string).Split("\r\n"), StringSplitOptions.RemoveEmptyEntries)
    End Sub
End Module
```

ponavljanje

- opisali smo AOSI
 - pokazali smo žive, jednostavne programe
 - sad to možete probati i vlastitom rukom
-
- ali, to još nije sve 😊

makro ImportPictures()

- na kraju.... ova .PPTM datoteka sadrži Powerpoint 'makro' koji učitava cijeli folder fotografija i stavi svaku na svoj slajd
- meni je to cijeli život trebalo, a nisam imao – nedavno sam otkrio kako to učiniti, a možda i vama bude korisno





hvala 😊
pitanja?

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