

Test Case #2

Sample Input File

testcase2.txt
<pre>net user admin @r00t(705) net group Administrators net group Administrators admin net group Users login admin @r00t(705) net user steveo d@man^304 net user rita #101'holla! net group testers net group visitors net user steveo tada043.,; net user fred j8M5#B2* net group visitors fred logout login steve d@man^304 login steveo d@man^304 create script write script echo Hello World! xcaccls script /E /P steveo:WX xcaccls script /E /G testers:RW xcaccls script /E /G users:X execute script read script logout login admin @r00t(705) net user rita #101'holla! net group testers net group testers rita net group testers steveo create script3 logout login rita #101'holla! create script write script echo Hello World! read script execute script net group developers net user stew awwShucks logout login steveo d@man^304 xcaccls script /E /D rita xcaccls script /E /D visitors logout login rita #101'holla! read script logout</pre>

```
login fred j8M5#B2*  
execute script  
logout  
end
```

Line-by-Line Expected Program Execution

Note: The lines marked with * should appear only if the extra credit functionality has been implemented.

```
>  
net user admin @r00t(705)
```

Creates privileged user `admin` by adding entry to *accounts.txt* file containing username and plaintext (or hashed) password

Display message to terminal: "User admin created",
*Display message to terminal: "Notify only on change"

Log message to *audit.txt* file: "User admin created"
*Log message to *audit.txt* file: "Notify only on change"

```
>  
net group Administrators
```

Creates group `Administrators` without any users.

Display message to terminal: "Group Administrators created"

Log message to *audit.txt* file: "Group Administrators created"

```
>  
net group Administrators admin
```

Adds user `admin` to group `Administrators`

Display message to terminal: "User admin added to group Administrators"

Log message to *audit.txt* file: "User admin added to group Administrators"

```
>  
net group Users
```

Creates group `Users` without any users.

Display message to terminal: "Group Users created"

Log message to *audit.txt* file: "Group Users created"

```
>  
login admin @r00t(705)
```

Locates entry for user `admin` in *accounts.txt* file and verifies that supplied password (or hash of supplied password) matches the one in the file

Successfully logs user `admin` into system

Display message to terminal: "User admin logged in"

Log message to *audit.txt* file: "User admin logged in"

```
>  
net user steveo d@man^304
```

Creates user `steveo` by adding entry to *accounts.txt* file containing username and plaintext (or hashed) password. Adds the user `steveo` to group `Users`.

Display message to terminal: "User steveo created"

*Display message to terminal: "Notify only on change"

Log message to *audit.txt* file: "User steveo created"

*Log message to *audit.txt* file: "Notify only on change"

```
>  
net user rita #101'holla!
```

Creates user `rita` by adding entry to *accounts.txt* file containing username and plaintext (or hashed) password. Adds the user `rita` to group `Users`.

Display message to terminal: "User rita created"

*Display message to terminal: "Notify only on change"

Log message to *audit.txt* file: "User rita created"

*Log message to *audit.txt* file: "Notify only on change"

```
>  
net group testers
```

Creates group `testers` without any users

Display message to terminal: "Group testers created"

Log message to *audit.txt* file: "Group testers created"

```
>  
net group visitors
```

Creates group visitors without any users

Display message to terminal: "Group visitors created"

Log message to *audit.txt* file: "Group visitors created"

```
>  
net user steveo tada043.,;
```

Display message to terminal: "Error: user steveo already exists"

Log message to *audit.txt* file: "Error: user steveo already exists"

```
>  
net user fred j8M5#B2*
```

Creates user fred by adding entry to *accounts.txt file* containing username and plaintext (or hashed) password. Adds the user fred to group Users.

Display message to terminal: "User fred created"

*Display message to terminal: "Notify only on change"

Log message to *audit.txt* file: "User fred created"

*Log message to *audit.txt* file: "Notify only on change"

```
>  
net group visitors fred
```

Adds user fred to group visitors

Display message to terminal: "User fred added to group visitors"

Log message to *audit.txt* file: "User fred added to group visitors"

>

logout

Logs out user admin

Display message to terminal: "User admin logged out"

Log message to *audit.txt* file: "User admin logged out"

>

login steve d@man^304

Display message to terminal: "Login failed: invalid username or password"

Log message to *audit.txt* file: "Login failed: invalid username or password"

>

login steveo d@man^304

Locates entry for user steveo in *accounts.txt* file and verifies that supplied password matches the one in the file

Successfully logs user steveo into system

Display message to terminal: "User steveo logged in"

Log message to *audit.txt* file: "User steveo logged in"

>

create script

Creates empty file named *script* with default permissions and steveo as the owner

Display message to terminal: "File script with owner steveo and default permissions created"

Log message to *audit.txt* file: "File script with owner steveo and default permissions created"

```
>  
write script echo Hello World!
```

Appends supplied text as new line to *script*

Display message to terminal: "User steveo wrote to script: echo Hello World!"

Log message to *audit.txt* file: "User steveo wrote to script: echo Hello World!"

```
>  
xcaccls script /E /P steveo:WX
```

Changes existing *script* ACL entry for steveo to allow user steveo write and execute access

Display message to terminal: "User steveo access to file script changed to WX by steveo"

Log message to *audit.txt* file: "User steveo access to file script changed to WX by steveo"

```
>  
xcaccls script /E /G testers:RW
```

Changes file permissions for *script* to allow read and write for the group testers.

Display message to terminal: "The ACL for script appended by steveo to include testers:RW"

Log message to *audit.txt* file: "The ACL for script appended by steveo to include testers:RW"

```
>  
xcaccls script /E /G users:X
```

Changes file permissions for *script* to allow execute access for group Users

Display message to terminal: "The ACL for script appended by steveo to include users:X"

Log message to *audit.txt* file: "The ACL for script appended by steveo to include users:X"

```
>  
execute script
```

Display message to terminal: "File script executed by steveo"

Log message to *audit.txt* file: "File script executed by steveo"

```
>  
read script
```

Display message to terminal: "User steveo denied read access to script"

Log message to *audit.txt* file: "User steveo denied read access to script"

```
>  
logout
```

Logs out user steveo

Display message to terminal: "User steveo logged out"

Log message to *audit.txt* file: "User steveo logged out"

```
>  
login admin @r00t(705)
```

Locates entry for user admin in *accounts.txt* file and verifies that supplied password (or hash of supplied password) matches the one in the file

Successfully logs user admin into system

Display message to terminal: "User admin logged in"

Log message to *audit.txt* file: "User admin logged in"

```
>  
net user rita #101'holla!
```

Display message to terminal: "Error: user rita already exists"

Log message to *audit.txt* file: "Error: user rita already exists"


```
>  
net group testers
```

Display message to terminal: "Error: group testers already exists"

Log message to *audit.txt* file: "Error: group testers already exists"

```
>  
net group testers rita
```

Adds user rita to group testers

Display message to terminal: "User rita added to group testers"

Log message to *audit.txt* file: "User rita added to group testers"

```
>  
net group testers steveo
```

Adds user steveo to group testers

Display message to terminal: "User steveo added to group testers"

Log message to *audit.txt* file: "User steveo added to group testers"

```
>  
create script3
```

Creates empty file named *script3* with default permissions and admin as the owner

Display message to terminal: "File script3 with owner admin and default permissions created"

Log message to *audit.txt* file: "File script3 with owner admin and default permissions created"

>

logout

Logs out user admin

Display message to terminal: "User admin logged out"

Log message to *audit.txt* file: "User admin logged out"

>

login rita #101'holla!

Locates entry for user *rita* in *accounts.txt* file and verifies that supplied password (or hash of supplied password) matches the one in the file

Successfully logs user *rita* into system

Display message to terminal: "User rita logged in"

Log message to *audit.txt* file: "User rita logged in"

>

create script

Display message to terminal: "Error: file script already exists"

Log message to *audit.txt* file: "Error: file script already exists"

>

write script echo Hello World!

Appends supplied text as new line to *script*

Display message to terminal: "User rita wrote to script: echo Hello World!"

Log message to *audit.txt* file: "User rita wrote to script: echo Hello World!"

```
>  
read script
```

User rita successfully reads *script*

Display message to terminal: "User rita reads file script as: echo Hello World! echo Hello World!"

Log message to *audit.txt* file: "User rita reads file script as: echo Hello World! echo Hello World!"

```
>  
execute script
```

User rita successfully executes *script*

Display message to terminal: "User rita executed script"

Log message to *audit.txt* file: "User rita executed script"

```
>  
net group developers
```

Display message to terminal: "Error: only an Administrator may issue net group command"

Log message to *audit.txt* file: "Error: only an Administrator may issue net group command"

```
>  
net user stew awwShucks
```

Display message to terminal: "Error: only an Administrator may issue net user command"

Log message to *audit.txt* file: "Error: only an Administrator may issue net user command"

```
>
logout
```

Logs out user `rita`

Display message to terminal: "User `rita` logged out"

Log message to *audit.txt* file: "User `rita` logged out"

```
>
login steveo d@man^304
```

Locates entry for user `steveo` in *accounts.txt* file and verifies that supplied password (or hash of supplied password) matches the one in the file

Successfully logs user `steveo` into system

Display message to terminal: "User `steveo` logged in"

Log message to *audit.txt* file: "User `steveo` logged in"

```
>
xcacls script /E /D rita
```

Appends existing ACL for *script* with a new entry to deny all access for user `rita`.

Display message to terminal: "ACL entry added for `script`: user `rita` denied access"

Log message to *audit.txt* file: "ACL entry added for `script`: user `rita` denied access"

```
>
xcacls script /E /D visitors
```

Appends existing ACL for *script* with a new entry to deny all access for group `visitors`.

Display message to terminal: "ACL entry added for `script`: group `visitors` denied access"

Log message to *audit.txt* file: "ACL entry added for `script`: group `visitors` denied access"

>
logout

Logs out user steveo

Display message to terminal: "User steveo logged out"

Log message to *audit.txt* file: "User steveo logged out"

>
login rita #101'holla!

Locates entry for user *rita* in *accounts.txt* file and verifies that supplied password (or hash of supplied password) matches the one in the file

Successfully logs user *rita* into system

Display message to terminal: "User rita logged in"

Log message to *audit.txt* file: "User rita logged in"

>
read script

Display message to terminal: "User rita denied read access to script"

Log message to *audit.txt* file: "User rita denied read access to script"

>
logout

Logs out user rita

Display message to terminal: "User rita logged out"

Log message to *audit.txt* file: "User rita logged out"

```
>  
login fred j8M5#B2*
```

Locates entry for user *fred* in *accounts.txt* file and verifies that supplied password (or hash of supplied password) matches the one in the file

Successfully logs user *fred* into system

Display message to terminal: "User fred logged in"

Log message to *audit.txt* file: "User fred logged in"

```
>  
execute script
```

Display message to terminal: "User fred denied execute access to script"

Log message to *audit.txt* file: "User fred denied execute access to script"

```
>  
logout
```

Logs out user *fred*

Display message to terminal: "User fred logged out"

Log message to *audit.txt* file: "User fred logged out"

```
>  
end
```

Program writes out the *groups.txt* and *files.txt* files, performs necessary clean-up and terminates.

Final Content of User Created Files

script
echo Hello World! echo Hello World!
script3
<empty>

groups.txt Content

groups.txt
Administrators: admin Users: steveo rita fred testers: rita steveo visitors: fred

files.txt Content

files.txt
script: steveo (steveo:WX,Administrators:F,testers:RW,users:X,rita:D,visitors:D) script3: admin (admin:F,Administrators:F,users:R)

accounts.txt Content (An example format with plain ASCII passwords)

accounts.txt
admin @r00t(705) Notify only on change steveo d@man^304 Notify only on change rita #101'holla! Notify only on change fred j8M5#B2* Notify only on change

The third column should appear only if the extra credit functionality has been implemented.

Audit Log Content

```
audit.txt
admin created
Notify only on change
Group Administrators created
User admin added to group Administrators
Group Users created
User admin logged in
User steveo created
Notify only on change
User rita created
Notify only on change
Group testers created
Group visitors created
Error: user steveo already exists
User fred created
Notify only on change
User fred added to group visitors
User admin logged out
Login failed: invalid username or password
User steveo logged in
File script with owner steveo and default permissions created
User steveo wrote to script: echo Hello World!
User steveo access to file script changed to WX by steveo
The ACL for script appended by steveo to include testers:RW"
The ACL for script appended by steveo to include users:X"
File script executed by steveo
User steveo denied read access to script
User steveo logged out
User admin logged in
Error: user rita already exists
Error: group testers already exists
User rita added to group testers
User steveo added to group testers
File script3 with owner admin and default permissions created
User admin logged out
User rita logged in
Error: file script already exists
User rita wrote to script: echo Hello World!
User rita read the file script as:
echo Hello World!
echo Hello World!
User rita executed script
Error: only an Administrator may issue net group command
Error: only an Administrator may issue net user command
User rita logged out
User steveo logged in
ACL changed for script: user rita denied access
```



```
ACL changed for script: group visitors denied access
User steveo logged out
User rita logged in
User rita denied read access to script
User rita logged out
User fred logged in
User fred denied execute access to script
User fred logged out
```

The “Notify only on change” should appear only if the extra credit functionality has been implemented.