Step 1:

```
GET https://wiki.homework.331.com/protected/py.py HTTP/1.1
Host: wiki.homework.331.com
User-Agent: Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:93.0) Gecko/20100101 Firefox/93.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate, br
Connection: keep-alive
Upgrade-Insecure-Requests: 1
Sec-Fetch-Dest: document
Sec-Fetch-Mode: navigate
Sec-Fetch-Site: none
Sec-Fetch-User: ?1
```

Step 2:

```
HTTP/1.1 302 Found
Date: Tue, 02 Nov 2021 15:27:12 GMT
Server: Apache/2.4.18 (Ubuntu)
Expires: Wed, 01 Jan 1997 12:00:00 GMT
Cache-Control: private,no-store,no-cache,max-age=0
Location: https://saml.homework.331.com/idp/profile/SAML2/Redirect
/SSO?SAMLRequest=fVJbT8IwFP4rS99Z100FGkYy4UESFMLQB19M6Q6soWtnTyf67x0XFUPC8%2FnOdztngKLSNc8aX5oFvDeAPvistEF%2BGKSkcYZbgQq
5ERUg95Ln2eOUx2HEa2e9lVaTIEME55U1I2uwqcDl4D6UhOfFNCWl9zVySndqq8LSVrCzbhsmCQulrWheqtXKavBliGjpnjym81m%2B7OSqqjXkamNIMG6NK
SP2En%2BEe4uXhKqoaetsrTSc2BZQKAfS0zyfkWAyTsmbTFgCAu66N7Au1rAC1u8JISPRili%2FkKKFITYwMeiF8SmJo5h1GOtE8ZLd8rjLWfxKgvmpgHtlC
mU219taHUHIH5bLeeci4Qs4PKRrsWQ42GfjBw%2Fu7CDXFcTPFcjweuf42%2FmAngkdVWv%2B1DJPxnOrlfwKMq3tbuRAeEgJI3R4XPn%2FM8Nv&
RelayState=ss%3Amem%3A04423ccd5c53d9b2cdd083e65bf0594ba2cdc77e9404bb9fba53eb79bad0a8fc
Content-Length: 890
Keep-Alive: timeout=5, max=100
```

Step 3:

a.

```
GET https://saml.homework.331.com/idp/profile/SAML2/Redirect
/SSO?SAMLRequest=fVJbT8IwFP4rS99Z100FGkYy4UESFMLQB19M6Q6soWtnTyf67x0XFUPC8%2FnOdztngKLSNc8aX5oFvDeAPvistEF%2BGKSkcYZbgQq
5ERUg95Ln2eOUx2HEa2e9lVaTIEME55U1I2uwqcDl4D6UhOfFNCWl9zVySndqq8LSVrCzbhsmCQulrWheqtXKavBliGjpnjym81m%2B7OSqqjXkamNIMG6NK
SP2En%2BEe4uXhKqoaetsrTSc2BZQKAfS0zyfkWAyTsmbTFgCAu66N7Au1rAC1u8JISPRili%2FkKKFITYwMeiF8SmJo5h1GOtE8ZLd8rjLWfxKgvmpgHtlC
mU219taHUHIH5bLeeci4Qs4PKRrsWQ42GfjBw%2Fu7CDXFcTPFcjweuf42%2FmAngkdVWv%2B1DJPxnOrlfwKMq3tbuRAeEgJI3R4XPn%2FM8Nv&
RelayState=ss%3Amem%3A04423ccd5c53d9b2cdd083e65bf0594ba2cdc77e9404bb9fba53eb79bad0a8fc HTTP/1.1
Host: saml.homework.331.com
User-Agent: Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:93.0) Gecko/20100101 Firefox/93.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate, br
Connection: keep-alive
Upgrade-Insecure-Requests: 1
Sec-Fetch-Dest: document
Sec-Fetch-Mode: navigate
Sec-Fetch-Site: none
Sec-Fetch-User: ?1
```

```
<samlp:AuthnRequest xmlns:samlp="urn:oasis:names:tc:SAML:2.0:protocol"
          AssertionConsumerServiceURL="https://wiki.homework.331.com/Shibboleth.sso/SAML2/POST-SimpleSign"
          Destination="https://saml.homework.331.com/idp/profile/SAML2/Redirect/SSO"
          ID="_c313eae674efdfebe198aac0a8019dca"
          IssueInstant="2021-11-02T15:27:12Z"
          ProtocolBinding="urn:oasis:names:tc:SAML:2.0:bindings:HTTP-POST-SimpleSign"
          Version="2.0"
          >
    <saml:Issuer xmlns:saml="urn:oasis:names:tc:SAML:2.0:assertion">https://wiki.homework.331.com
/shibboleth</saml:Issuer>
    <samlp:NameIDPolicy AllowCreate="1" />
</samlp:AuthnRequest>
```

```
HTTP/1.1 302 Found
Date: Tue, 02 Nov 2021 15:27:19 GMT
Server: Jetty(9.4.12.v20180830)
X-Xss-Protection: 1; mode=block
X-Content-Type-Options: nosniff
Strict-Transport-Security: max-age=31536000; includeSubDomains
Expires:
Cache-Control: no-store
Location: https://saml.homework.331.com/idp/profile/SAML2/Redirect
/SSO;jsessionid=node0okvg5y8q5gdlbyf2937wcxdm28.node0?execution=e1s1
Content-Length: 0
Set-Cookie: JSESSIONID=node0okvg5y8q5gdlbyf2937wcxdm28.node0;Path=/idp;Secure;HttpOnly
```

b.

```
GET https://saml.homework.331.com/idp/profile/SAML2/Redirect
/SSO;jsessionid=node0okvg5y8q5gdlbyf2937wcxdm28.node0?execution=e1s1 HTTP/1.1
Host: saml.homework.331.com
User-Agent: Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:93.0) Gecko/20100101 Firefox/93.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate, br
Connection: keep-alive
Cookie: JSESSIONID=node0okvg5y8q5gdlbyf2937wcxdm28.node0
Upgrade-Insecure-Requests: 1
Sec-Fetch-Dest: document
Sec-Fetch-Mode: navigate
Sec-Fetch-Site: none
Sec-Fetch-User: ?1


HTTP/1.1 302 Found
Date: Tue, 02 Nov 2021 15:27:19 GMT
Server: Jetty(9.4.12.v20180830)
X-Xss-Protection: 1; mode=block
X-Content-Type-Options: nosniff
Strict-Transport-Security: max-age=31536000; includeSubDomains
Cache-Control: no-store
Location: https://saml.homework.331.com/idp/Authn/oxAuth?conversation=e1s1
```

c.

```
GET https://saml.homework.331.com/idp/Authn/oxAuth?conversation=e1s1 HTTP/1.1
Host: saml.homework.331.com
User-Agent: Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:93.0) Gecko/20100101 Firefox/93.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate, br
Connection: keep-alive
Cookie: JSESSIONID=node0okvg5y8q5gdlbyf2937wcxdm28.node0
Upgrade-Insecure-Requests: 1
Sec-Fetch-Dest: document
Sec-Fetch-Mode: navigate
Sec-Fetch-Site: none
Sec-Fetch-User: ?1

HTTP/1.1 302 Found
Date: Tue, 02 Nov 2021 15:27:19 GMT
Server: Jetty(9.4.12.v20180830)
X-Xss-Protection: 1; mode=block
X-Content-Type-Options: nosniff
Strict-Transport-Security: max-age=31536000; includeSubDomains
Location: https://saml.homework.331.com/oxauth/restv1/authorize?response_type=code&client_id=
%40%214ACE.B5C1.8546.E884%210001%21D594.2E60%210008%21C374.BB17&scope=openid+email+user_name&redirect_uri=https%3A%2F
%2Fsaml.homework.331.com%2Fidp%2FAuthn%2FoxAuth&
state=eyJ0eXAiOiJKV1QiLCJhbGciOiJub25lIn0.eyJjb252ZXJzYXRpb24iOiJlMXMxIiwic3RhdGUiOiJIRjJPNHNCRzF0In0.&nonce=D8pGJv7j0Z&
entityId=https://wiki.homework.331.com/shibboleth
```

d.

```
GET https://saml.homework.331.com/oxauth/restv1/authorize?response_type=code&client_id=
%40%214ACE.B5C1.8546.E884%210001%21D594.2E60%210008%21C374.BB17&scope=openid+email+user_name&redirect_uri=https%3A%2F
%2Fsaml.homework.331.com%2Fidp%2FAuthn%2FoxAuth&
state=eyJ0eXAiOiJKV1QiLCJhbGciOiJub25lIn0.eyJjb252ZXJzYXRpb24iOiJlMXMxIiwic3RhdGUiOiJIRjJPNHNCRzF0In0.&nonce=D8pGJv7j0Z&
entityId=https://wiki.homework.331.com/shibboleth HTTP/1.1
Host: saml.homework.331.com
User-Agent: Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:93.0) Gecko/20100101 Firefox/93.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate, br
Connection: keep-alive
Upgrade-Insecure-Requests: 1
Sec-Fetch-Dest: document
Sec-Fetch-Mode: navigate
Sec-Fetch-Site: none
Sec-Fetch-User: ?1


HTTP/1.1 302 Found
Date: Tue, 02 Nov 2021 15:27:19 GMT
Server: Jetty(9.4.12.v20180830)
X-Xss-Protection: 1; mode=block
X-Content-Type-Options: nosniff
Strict-Transport-Security: max-age=31536000; includeSubDomains
Location: https://saml.homework.331.com/oxauth/authorize.htm?scope=openid+email+user_name&response_type=code&
redirect_uri=https%3A%2F%2Fsaml.homework.331.com%2Fidp%2FAuthn%2FoxAuth&
state=eyJ0eXAiOiJKV1QiLCJhbGciOiJub25lIn0.eyJjb252ZXJzYXRpb24iOiJlMXMxIiwic3RhdGUiOiJIRjJPNHNCRzF0In0.&nonce=D8pGJv7j0Z&
client_id=%40%214ACE.B5C1.8546.E884%210001%21D594.2E60%210008%21C374.BB17
```

e.

```
GET https://saml.homework.331.com/oxauth/authorize.htm?scope=openid+email+user_name&response_type=code&
redirect_uri=https%3A%2F%2Fsaml.homework.331.com%2Fidp%2FAuthn%2FoxAuth&
state=eyJ0eXAiOiJKV1QiLCJhbGciOiJub25lIn0.eyJjb252ZXJzYXRpb24iOiJlMXMxIiwic3RhdGUiOiJIRjJPNHNCRzF0In0.&nonce=D8pGJv7j0Z&
client_id=%40%214ACE.B5C1.8546.E884%210001%21D594.2E60%210008%21C374.BB17 HTTP/1.1
Host: saml.homework.331.com
User-Agent: Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:93.0) Gecko/20100101 Firefox/93.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate, br
Connection: keep-alive
Upgrade-Insecure-Requests: 1
Sec-Fetch-Dest: document
Sec-Fetch-Mode: navigate
Sec-Fetch-Site: none
Sec-Fetch-User: ?1


HTTP/1.1 302 Found
Date: Tue, 02 Nov 2021 15:27:19 GMT
Server: Jetty(9.4.12.v20180830)
X-Xss-Protection: 1; mode=block
X-Content-Type-Options: nosniff
Strict-Transport-Security: max-age=31536000; includeSubDomains
Expires: Thu, 01 Jan 1970 00:00:00 GMT
Location: https://saml.homework.331.com/oxauth/login.htm
```

f.

```
GET https://saml.homework.331.com/oxauth/login.htm HTTP/1.1
Host: saml.homework.331.com
User-Agent: Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:93.0) Gecko/20100101 Firefox/93.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate, br
Connection: keep-alive
Cookie: rp_origin_id=https://saml.homework.331.com/idp/Authn/oxAuth; org.gluu.i18n.Locale=en;
session_id=491431f2-3917-4908-8dc3-e1df4fd1bf6a;
session_state=c78db87f878de8918d84a0ca3c4e18ed1ebafac7140f35275417201ffc547865.ca5ec2bc-6af8-4bce-9f7b-bbf5a307ba29;
opbs=1a921160-9b05-4cbc-a848-66a3ef855787
Upgrade-Insecure-Requests: 1
```

g.

```
POST https://saml.homework.331.com/oxauth/login.htm HTTP/1.1
Host: saml.homework.331.com
User-Agent: Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:93.0) Gecko/20100101 Firefox/93.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate, br
Content-Type: application/x-www-form-urlencoded
Content-Length: 596
Origin: https://saml.homework.331.com
Connection: keep-alive
Referer: https://saml.homework.331.com/oxauth/login.htm
Cookie: rp_origin_id=https://saml.homework.331.com/idp/Authn/oxAuth; org.gluu.i18n.Locale=en; session_id=491431f2-3917-4908-8dc3-
e1df4fd1bf6a; session_state=c78db87f878de8918d84a0ca3c4e18ed1ebafac7140f35275417201ffc547865.ca5ec2bc-6af8-4bce-9f7b-bbf5a307ba29;
opbs=1a921160-9b05-4cbc-a848-66a3ef855787
Upgrade-Insecure-Requests: 1
Sec-Fetch-Dest: document
Sec-Fetch-Mode: navigate
Sec-Fetch-Site: same-origin
Sec-Fetch-User: ?1

HTTP/1.1 302 Found
Date: Tue, 02 Nov 2021 15:27:28 GMT
Server: Jetty(9.4.12.v20180830)
X-Xss-Protection: 1; mode=block
X-Content-Type-Options: nosniff
Strict-Transport-Security: max-age=31536000; includeSubDomains
Expires: Thu, 01 Jan 1970 00:00:00 GMT
Location: https://saml.homework.331.com/oxauth/authorize.htm?scope=openid+email+user_name&response_type=code&redirect_uri=https%3A%2F
%2Fsaml.homework.331.com%2Fidp%2FAuthn%2FoxAuth&
state=eyJ0eXAiOiJKV1QiLCJhbGci0iJub25lIn0.eyJjb252ZXJzYXRpb24iOiJlMXMxIiwic3RhdGUiOiJIRjJPNHNCRzF0In0.&nonce=D8pGJv7j0Z&client_id=
%40%214ACE.B5C1.8546.E884%210001%21D594.2E60%210008%21C374.BB17
```

h.

```
GET https://saml.homework.331.com/oxauth/authorize.htm?scope=openid+email+user_name&response_type=code&redirect_uri=https%3A%2F
%2Fsaml.homework.331.com%2Fidp%2FAuthn%2FoxAuth&
state=eyJ0eXAiOiJKV1QiLCJhbGci0iJub25lIn0.eyJjb252ZXJzYXRpb24iOiJlMXMxIiwic3RhdGUiOiJIRjJPNHNCRzF0In0.&nonce=D8pGJv7j0Z&client_id=
%40%214ACE.B5C1.8546.E884%210001%21D594.2E60%210008%21C374.BB17 HTTP/1.1
Host: saml.homework.331.com
User-Agent: Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:93.0) Gecko/20100101 Firefox/93.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate, br
Referer: https://saml.homework.331.com/oxauth/login.htm
Connection: keep-alive
Cookie: rp_origin_id=https://saml.homework.331.com/idp/Authn/oxAuth; org.gluu.i18n.Locale=en; session_id=491431f2-3917-4908-8dc3-
e1df4fd1bf6a; session_state=c78db87f878de8918d84a0ca3c4e18ed1ebafac7140f35275417201ffc547865.ca5ec2bc-6af8-4bce-9f7b-bbf5a307ba29;
opbs=1a921160-9b05-4cbc-a848-66a3ef855787
Upgrade-Insecure-Requests: 1
Sec-Fetch-Dest: document
Sec-Fetch-Mode: navigate
Sec-Fetch-Site: same-origin
Sec-Fetch-User: ?1

HTTP/1.1 302 Found
Date: Tue, 02 Nov 2021 15:27:28 GMT
Server: Jetty(9.4.12.v20180830)
X-Xss-Protection: 1; mode=block
X-Content-Type-Options: nosniff
Strict-Transport-Security: max-age=31536000; includeSubDomains
Expires: Thu, 01 Jan 1970 00:00:00 GMT
Location: https://saml.homework.331.com/oxauth/restv1/authorize?scope=openid+email+user_name&response_type=code&
session_id=491431f2-3917-4908-8dc3-e1df4fd1bf6a&redirect_uri=https%3A%2F%2Fsaml.homework.331.com%2Fidp%2FAuthn%2FoxAuth&
state=eyJ0eXAiOiJKV1QiLCJhbGci0iJub25lIn0.eyJjb252ZXJzYXRpb24iOiJlMXMxIiwic3RhdGUiOiJIRjJPNHNCRzF0In0.&nonce=D8pGJv7j0Z&client_id=
%40%214ACE.B5C1.8546.E884%210001%21D594.2E60%210008%21C374.BB17
Content-Length: 0
```

i.

```
GET https://saml.homework.331.com/oxauth/restv1/authorize?scope=openid+email+user_name&response_type=code&
session_id=491431f2-3917-4908-8dc3-e1df4fd1bf6a&redirect_uri=https%3A%2F%2Fsaml.homework.331.com%2Fidp%2FAuthn%2FoxAuth&
state=eyJ0eXAiOiJKV1QiLCJhbGci0iJub25lIn0.eyJjb252ZXJzYXRpb24i0iJLMXMxIiwic3RhdGUi0iJIRjJPNHNCRzF0In0.&nonce=D8pGJv7j0Z&client_id=
%40%214ACE.B5C1.8546.E884%210001%21D594.2E60%210008%21C374.BB17 HTTP/1.1
Host: saml.homework.331.com
User-Agent: Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:93.0) Gecko/20100101 Firefox/93.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate, br
Referer: https://saml.homework.331.com/oxauth/login.htm
Connection: keep-alive
Cookie: rp_origin_id=https://saml.homework.331.com/idp/Authn/oxAuth; org.gluu.i18n.Locale=en; session_id=491431f2-3917-4908-8dc3-
e1df4fd1bf6a; session_state=c78db87f878de8918d84a0ca3c4e18ed1ebafac7140f35275417201ffc547865.ca5ec2bc-6af8-4bce-9f7b-bbf5a307ba29;
opbs=1a921160-9b05-4cbc-a848-66a3ef855787
Upgrade-Insecure-Requests: 1
Sec-Fetch-Dest: document
Sec-Fetch-Mode: navigate
Sec-Fetch-Site: same-origin
Sec-Fetch-User: ?1

HTTP/1.1 302 Found
Date: Tue, 02 Nov 2021 15:27:28 GMT
Server: Jetty(9.4.12.v20180830)
X-Xss-Protection: 1; mode=block
X-Content-Type-Options: nosniff
Strict-Transport-Security: max-age=31536000; includeSubDomains
Location: https://saml.homework.331.com/idp/Authn/oxAuth?code=5f10b333-c342-46bb-aa37-d7a238deb538&scope=openid+user_name+email&
session_id=491431f2-3917-4908-8dc3-e1df4fd1bf6a&
state=eyJ0eXAiOiJKV1QiLCJhbGci0iJub25lIn0.eyJjb252ZXJzYXRpb24i0iJlMXMxIiwic3RhdGUi0iJIRjJPNHNCRzF0In0.&
session_state=c78db87f878de8918d84a0ca3c4e18ed1ebafac7140f35275417201ffc547865.ca5ec2bc-6af8-4bce-9f7b-bbf5a307ba29
```

j.

```
GET https://saml.homework.331.com/idp/Authn/oxAuth?code=5f10b333-c342-46bb-aa37-d7a238deb538&scope=openid+user_name+email&
session_id=491431f2-3917-4908-8dc3-e1df4fd1bf6a&
state=eyJ0eXAiOiJKV1QiLCJhbGci0iJub25lIn0.eyJjb252ZXJzYXRpb24i0iJlMXMxIiwic3RhdGUi0iJIRjJPNHNCRzF0In0.&
session_state=c78db87f878de8918d84a0ca3c4e18ed1ebafac7140f35275417201ffc547865.ca5ec2bc-6af8-4bce-9f7b-bbf5a307ba29 HTTP/1.1
Host: saml.homework.331.com
User-Agent: Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:93.0) Gecko/20100101 Firefox/93.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate, br
Referer: https://saml.homework.331.com/oxauth/login.htm
Connection: keep-alive
Cookie: JSESSIONID=node0okvg5y8q5gdlbyf2937wcxdm28.node0; org.gluu.i18n.Locale=en; session_id=491431f2-3917-4908-8dc3-e1df4fd1bf6a;
session_state=c78db87f878de8918d84a0ca3c4e18ed1ebafac7140f35275417201ffc547865.ca5ec2bc-6af8-4bce-9f7b-bbf5a307ba29;
opbs=1a921160-9b05-4cbc-a848-66a3ef855787
Upgrade-Insecure-Requests: 1
Sec-Fetch-Dest: document
Sec-Fetch-Mode: navigate
Sec-Fetch-Site: same-origin
Sec-Fetch-User: ?1
```

k.

```
GET https://saml.homework.331.com/idp/profile/SAML2/Redirect/SSO?execution=e1s1&_eventId_proceed=1 HTTP/1.1
Host: saml.homework.331.com
User-Agent: Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:93.0) Gecko/20100101 Firefox/93.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate, br
Referer: https://saml.homework.331.com/oxauth/login.htm
Connection: keep-alive
Cookie: JSESSIONID=node0okvg5y8q5gdlbyf2937wcxdm28.node0; org.gluu.i18n.Locale=en; session_id=491431f2-3917-4908-8dc3-e1df4fd1bf6a;
session_state=c78db87f878de8918d84a0ca3c4e18ed1ebafac7140f35275417201ffc547865.ca5ec2bc-6af8-4bce-9f7b-bbf5a307ba29;
opbs=1a921160-9b05-4cbc-a848-66a3ef855787
Upgrade-Insecure-Requests: 1
Sec-Fetch-Dest: document
Sec-Fetch-Mode: navigate
Sec-Fetch-Site: same-origin
Sec-Fetch-User: ?1
```

Step 4:

POST **https://wiki.homework.331.com/Shibboleth.sso/SAML2/POST-SimpleSign** HTTP/1.1
Host: wiki.homework.331.com
User-Agent: Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:93.0) Gecko/20100101 Firefox/93.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate, br
Content-Type: application/x-www-form-urlencoded
Content-Length: 11731
Origin: https://saml.homework.331.com
Connection: keep-alive
Referer: https://saml.homework.331.com/
Upgrade-Insecure-Requests: 1
Sec-Fetch-Dest: document
Sec-Fetch-Mode: navigate
Sec-Fetch-Site: same-site

HTTP/1.1 302 Found
Date: Tue, 02 Nov 2021 15:27:22 GMT
Server: Apache/2.4.18 (Ubuntu)
Set-Cookie:
_shibsession_64656661756c7468747470733a2f2f77696b692e686f6d65776f726b2e3333312e636f6d2f73686f962626f6c657468=_70
b0be361914386e3d1784f1df4f185c; path=/; secure; HttpOnly
Expires: Wed, 01 Jan 1997 12:00:00 GMT
Cache-Control: private,no-store,no-cache,max-age=0
Location: https://wiki.homework.331.com/Shibboleth.sso/AttrChecker?return=https%3A%2F
%2Fwiki.homework.331.com%2FShibboleth.sso%2FSAML2%2FPOST-
SimpleSign%3Fhook%3D1%26target%3Dss%253Amem%253A04423ccd5c53d9b2cdd083e65bf0594ba2cdc77e9404bb9fba53eb79bad0a8f
c&target=https%3A%2F%2Fwiki.homework.331.com%2Fprotected%2Fpy.py

<saml2p:Response Destination="https://wiki.homework.331.com/Shibboleth.sso/SAML2/POST-SimpleSign"
                ID="_a17a9a6500e411388407e5709ba64678"
                InResponseTo="_c313eae674efdfebe198aac0a8019dca"
                IssueInstant="2021-11-02T15:27:28.771Z"
                Version="2.0"
                xmlns:saml2p="urn:oasis:names:tc:SAML:2.0:protocol"
                >
    <saml2:Issuer xmlns:saml2="urn:oasis:names:tc:SAML:2.0:assertion">https://saml.homework.331.com/idp/shibboleth</saml2:Issuer>
    <saml2p:Status>
        <saml2p:StatusCode Value="urn:oasis:names:tc:SAML:2.0:status:Success" />
    </saml2p:Status>
    <saml2:EncryptedAssertion xmlns:saml2="urn:oasis:names:tc:SAML:2.0:assertion">
        <xenc:EncryptedData Id="_98d01c2e81a1a987f8724cf71ce9f846"
                        Type="http://www.w3.org/2001/04/xmlenc#Element"
                        xmlns:xenc="http://www.w3.org/2001/04/xmlenc#"
                        >
            <xenc:EncryptionMethod Algorithm="http://www.w3.org/2001/04/xmlenc#aes128-cbc"
                            xmlns:xenc="http://www.w3.org/2001/04/xmlenc#"
                            />
            <ds:KeyInfo xmlns:ds="http://www.w3.org/2000/09/xmldsig#">
                <xenc:EncryptedKey Id="_7f2c577d7913733414cd589d8cd0f9cb"
                            Recipient="https://wiki.homework.331.com/shibboleth"
                            xmlns:xenc="http://www.w3.org/2001/04/xmlenc#"
                            >
                    <xenc:EncryptionMethod Algorithm="http://www.w3.org/2001/04/xmlenc#rsa-oaep-mgf1p"
                                    xmlns:xenc="http://www.w3.org/2001/04/xmlenc#"
                                    >
                        <ds:DigestMethod Algorithm="http://www.w3.org/2000/09/xmldsig#sha1"
                                        xmlns:ds="http://www.w3.org/2000/09/xmldsig#"
                                        />
                    </xenc:EncryptionMethod>

                    <ds:KeyInfo>
                        <ds:X509Data>
                            <ds:X509Certificate>MIIDDjCCAfYCCQCFLALKMRPJEDANBgkqhkiG9w0BAQsFADBJMQswCQYDVQQGEwJVUzELMAkGA1UE
CAwCSUExDTALBgNVBAcMBEFtZXMxDDAKBgNVBAoMA01TVTEQMA4GA1UECwwHQ1BSRTQzMTAeFw0x
ODA0MDIxNjQ0MDFaFw0x0TA0MDIxNjQ0MDFaMEkxCzAJBgNVBAYTA1VTMQswCQYDVQQIDAJJQTEN
MAsGA1UEBwwEQW1lczEMMAoGA1UECgwDSVNVMRAwDgYDVQQLDAdDUFJFNDMxMIIBIjANBgkqhkiG
9w0BAQEFAAOCAQ8AMIIBCgKCAQEA1smV93jQK7JFSjuFuPi1Flw2kp+a7jhH7mD7p5apqV+wndaX
C+JwkvJkpNoQGBXtJToxujYjQnJb3C3lw3qI6EiEH4kfyPBAZCkJxLb5UAMgmOuBdSF5fCgDxUts
KOpfvgxdk65Ep6pjBon4q7JNZK1R9GM7gaO2C9A+SaXbWFJ8kMXp3WJ/elBmcenxgIZp3ZAsPfDi
4G+sBJ2tQHZxFWutc9Nb4AmzL/vOeao3HJFuhzzCGhvzJM2AvTz9t8H5mykt1Vg9qvU1jy15AzI0
TeYwCJy5vEBW7KpyS03a2Z1QUADDxs7V2aQQ6NVDS5SQUcMeGj+bHMFdX4AnREGFawIDAQABMA0G
CSqGSIb3DQEBCwUAA4IBAQAo8ntoXR6vpvSpyAUHOTuT7AJtpgjfQ2wF1d59o0L4/H+gGA2+WUH7
GQbHprKELwRYFFHT2tQuYrY28TqUX5wIWniM2ylGFFkHeFvKEfj5JDx6qbqTqlhNlxSKW8Bp0t6B
1LKVJwIERsviGzmuk/7WPkMGm48cVo4yHpOs/QBmrknQeo5mRg3ZOGDSqZXQffHokkPCoGD4sK8v
BOyQlprFNee1HdO+4tzvXAfd3pCuJJKpU7Cf9hV5ZOatIpUezu5Raxp8NxcxzSA3rNmgAKrX4plH
nxsQTVjopAUCe5oxFWU4lEeW/SP3qB5hR2tQvKFEw+SGU6nqFxmL6ShSQHjX</ds:X509Certificate>
                        </ds:X509Data>
                    </ds:KeyInfo>
                    <xenc:CipherData xmlns:xenc="http://www.w3.org/2001/04/xmlenc#">
                        <xenc:CipherValue>WCEV73yksWlYEbxkuFobN1tcBSnYBdHiI+0n82hPvA6KA1vbNp+3HM5xWny+1gbPLFFQfR+WeSn0
cpfPJ0ORWbnmlqBG/MvzscXy6tPb+5alvpSnQvuV4BblwDVjAJVGcNcuS/4qIBbu4ajYkKpa08wJ
KLTGZryAkniQrhXMj11wJSKWw8BsUjseGlVNpwPNhYbfszoyjxHclHiTOywgJGu3zjDHFPeQwYkv
nkj2P0cAL7/c0+FK5ew48ZK5ejHhT7jwe5YnhzX3iVVMLyjvNtCoH8ArFSlMA9pOswR9/UqejyeG
PUpfiAyn31S1N7Fx96It8Ar+hfmrBg69YN2Seg==</xenc:CipherValue>
                    </xenc:CipherData>
                </xenc:EncryptedKey>
            </ds:KeyInfo>

```
<xenc:CipherData xmlns:xenc="http://www.w3.org/2001/04/xmlenc#">
    <xenc:CipherValue>/uaHWT/u0fasEjXWbM+M7HEZ4Sv/XhX0K+dpp2Ynd5onYKYLotRd0u+3BoXe3XJDXejKAg6X/YVK
QmYNWGzJY8uCIElB/LOMuxFSIV9PFvL0xa0cJjw82LA6ND+NMyxHeDkpaErQuRoiyWAshg2buK2Q
Qyhr38vcF9sv6Aclw0iiK819gHb9l+YE65P+sjOZcPpRAWJdrmC/TkAN+JWnM4aMBgBDDX1qosxe
9fftXCA8Gg1FQrWJcWLYRU3eBChOuxMyLMPtI8/dNfXFbsOGoH/p5mxnDwOoulEddLG7RccGPLfc
y5PjVi6Gdw+ee12seX1YH0Bow4ICgTRqTFByvs/KnATsz2Czlo5bqSljyrrYtPg9+N+YFzONZIZE
8iAoQ7eTpOalnXTaGtCCp4wmV52DjRbBXgcEfkhVUe2qLcX2zwzN9INn2LlLhbqeDr0zIJ8v1Zdx
4n8CbORXcunPYa5PTKzmiZ0cO7SylWXLySAQSqHcF59uKm+zdCIUj/uit+S/dHwNhk0He1zzNtLB
BMlMyzfXw8Yii2zn08wAzGNavv+m41wWpuco8MuScyk9LyX+HbBv3wCt4AIGMyAwIM849SGIeYcS
jnc8ge66CFkZAiV5grItEF7PwEylBzueHuoayT7+DUNBOuSZGQrytqtHtkb2BH1Arh9JsDJSquHw
GEVfF7VPQghoz2rE8u+o8Gr9akIyUiM4GRfTv+uWd5NsP56Xy1aOoJdiJi8IcnCuD0njLWo8Auki
xFItxkN3LnS1iKABULHEd1By76OTanU+tlVb5TIRdlwf1jHsuwgisC0CeT0zzL2v3qkhE73eoI5w
IJPT41tw7eB076q98vb/KcX6gyEWt8GnKZC5Blck3zKEhszB+LPpeTgB9LVo0SJhKaNoKInuM/jQ
O1IVssOh/ntLTH0Sgotu5Q4PnCyqOWdRLyjvGoSHVXkKSI2jbwO52FPmC4iHyJSDt387xXTqJiaB
DL6SLRqlHu0CfdHg9PJW5iCzn5kDEtxmhd2O5Uqb8CkXC36nNjnoot2m4hflKT/YGmum6p0ELVHL
vYkruGzbgaD4G2A8G2o3yFt0y3TzpU4VjQ2FliUmimai9OAgOYC0zeLwL0t671UextrrqJwSZhPi
Vf3IbR0KU75EH7RD/WC8Y53Wa8llVqmck0b5+Q/W8WO/0hw+E6l8pOhNxVw9CshlBfVOvpCk3Jmh
jHwy1ErOqQkf/uLf9APy1fTVxDgYlHDA28i6ieZWk00VGjdysQoHDlKHFro1gVyOKZc7cgEp5ryk
ZLyp8ghhubawhFo8cks/wgVbIDFJfZi3fDurbVZdjShRLrtpQRuFBWL/tzs2wbrh0EuYx5g4rRqt
cCGm7i4DO4v5NUVZatTG9wuP/iu/m4vypuHSuUdtU/LCEx9xWhUEuqH4qxiQFtGy3LDCfw6f9BIF
CnFkEc6nf/wy3x4KueEHIphYv2KgP0NpdY+27lNWn5ylId07n0pZMGW3GMWeTCGWlErXR3kuJxn0
872RvWyf10SJW1sVFZmP1JI0YE29iYx87WcuJOKhUWBacYF17jwoRwrJhbdDXRjRWxE+kbT/FTHP
6IcOskxTkpI50Ur6wCLoTVTGT/+bmPzIvNSEWIyvTWyQy4tln40voeXce3YMu+R9yvYB/VljvoOA
1ZmY0hu8BHS1io3Ndg3Itaj9zS0i5+iOaiiJsJZMlhHz51mpVirVt2QW2LsdZiyK5QCs5C3g2T7x
0IODJqKPTTb7mkCUeRseU88AsvIc/4Cxp5Q/GFSG1PQo3X0DvIj2eTfXqqJV2hQxNMouDD1vOk65
WenAV50YL0s6Wzs+RBWJ90lbfx003H4XR4e+AeKH3OjDsh93k8Y2hSfgb9vHWfunYwvBIUI5LgOZ
CgXzExj5yLp73sn0c7nqz6HnCLpClsCt7ffLBfvzAgoSmozCDgmP9/BL/hF41klnIYUDTdiEf0EN
WUkOxaYtS7T/g5ubGaZRIqPQiEeOZGSL3P2oCklFR5ia9yPknEjGPoewDixI6hgJcBXN05oeO5RM
df/5ztkCUY9t4icDm6z8jpaiDwcoxqSokhHRhOIG6b718cq7Xs3dySliBhRZhJnXgwgi8oRmI5zb
hV4nL0hSOYMl0PXY3x6AyprWNxDcQIUp2iS/tvtDp1zM/kWeezVWVrlI/gs9CPOh0xh8krSDw/58
WMClaBa6sNjjy707Tde9bZa6KWwEuElT9piJ6+ahcMyyHOVn2eJGkwP8ZfDu2X5Omqoa7HTeMylH
4w/LHpE6gx/4ghHAPEQMCeXzLDBcsnommRSj1/SxjIDTLDILOj0cBx0XPuQD508uTe9zix6MtO7v
4CSiYNL39EqStamKGYn/CnM56nP5ofr6MZk/G08IyNjAhf2wABnGUK7khtdG/PBXcJf43yuyxEI9
sAGWrX6yMijIGZhPvkdBbF1m5jrl/FaLwikPjGYuHLR+4svlMwYgWb4TWKQrkQhuxlm4DvbjqqxD
oYwiMecUKPuOlOA9QBEcPoBTb7jkFLvjOA0LulMcM6Gpz5hlKn5og4o8ycQnQK822jwsfKMhCshP
oM7qksx9AF939tJASKtdGmRPenqinEcagmzjWRBJzAVd4FiwbeZF8aDG8BpYBzJJOnJI6674lsVl
+BIDmpULVfJm6zVCMZh/Yt62iuL848rJOKon8Gb2xGrcznrOc+OyUkXe8mW+nV2VxNMSIcuCEllH
SxDebQcg8SxN+/L8Dvqj9xonWiU7q6JMqjR3gCRpxszt05KPUR5Gg27KiJCQpL+5zLuVs5NN5gpJ
7GuPW4CiZMrsCUkOdLePJw2AOjAPpBypWeR6Efop/QF7IBhfXMTDC1I++VqyxggQ5GaVaKo9Id7y
7oCZHVGcVmoIAGPkcXwMmTpJgODwO8+BOAt7MFcbZVPbLT6YodUPyC+fjAenlQWPZinPeIZSFiC2
nXo8HmwzIDGbPaXPvZ+C4jWoF8kH48Hk8MBcv6eIhmNMO/CcaoglU4aLqTsQ7UInlTPXn5PAg6D2
GQMJUHHJOTNnQRslFm0zQ0jWI7QSX/kI2hbkGHbrv7zSXMJKpUHaIuW4YADwy7VLP1a16rGmeLtA
6I2H5mroYkM/Ip13tUvdWna46BrbfruMXILSemEJMHyFYeVRke0ANMZlsOQ8vFW9cdK3iPbTU270
V3/A0z82T+wqeOV3z2DIGFXK0Ufuyo+WdWJ4aIyCAZZboqImp4704whF0cgX1ARs/ialVgSsyTiu
NJoHNbDsvGDEQJrwoUJMIlbfwb86owV99oP7fsSSc33r6ageVmCgggXr589Nc2vyI4RDZdvzk4Um
8+ay3+iNcFsRfKONmn6s4i70tu6QAicSjprxOymVSRq/qMJRDys63jaYXGvNrk7jRGWSoR5sEFCW
9+3WcC8ARfqKV2DF0wku4Y45wBntRbysDinZQ4S9tB5Uu4Lb8AbAXef3LCwRey5vQEXTeEkxUPSj
abTSgW6GvPT/InnIgZCt0rdC2FkjCWfvQJWKnRHYRqwLbE+MIhkfjiJkxwv8SMPL1Rymn9VldI5E
D3n49sN0LNgMZVjFgnq28tN7fVmlWGqJ2gcZlV9a3k/I/XiVePVmsn5e73cvFNjmZ6XWyFfWBqdg
B+98nv3jTkehblhYs3G0rsoad4I1ananbZzIRJdYg1M=</xenc:CipherValue>
        </xenc:CipherData>
    </xenc:EncryptedData>
  </saml2:EncryptedAssertion>
</saml2p:Response>
```

Step 5:

```
GET https://wiki.homework.331.com/Shibboleth.sso/AttrChecker?return=https%3A%2F
%2Fwiki.homework.331.com%2FShibboleth.sso%2FSAML2%2FPOST-
SimpleSign%3Fhook%3D1%26target%3Dss%253Amem%253A04423ccd5c53d9b2cdd083e65bf0594ba2cdc77e9404bb9fba53eb79bad0a8f
c&target=https%3A%2F%2Fwiki.homework.331.com%2Fprotected%2Fpy.py HTTP/1.1
Host: wiki.homework.331.com
User-Agent: Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:93.0) Gecko/20100101 Firefox/93.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate, br
Referer: https://saml.homework.331.com/
Connection: keep-alive
Cookie:
_shibsession_64656661756c7468747470733a2f2f77696b692e686f6d65776f726b2e3333312e636f6d2f73686962626f6c657468=_70
b0be361914386e3d1784f1df4f185c
Upgrade-Insecure-Requests: 1
Sec-Fetch-Dest: document
Sec-Fetch-Mode: navigate
Sec-Fetch-Site: same-site

HTTP/1.1 302 Found
Date: Tue, 02 Nov 2021 15:27:22 GMT
Server: Apache/2.4.18 (Ubuntu)
Expires: Wed, 01 Jan 1997 12:00:00 GMT
Cache-Control: private,no-store,no-cache,max-age=0
Location: https://wiki.homework.331.com/Shibboleth.sso/SAML2/POST-SimpleSign?hook=1&
target=ss%3Amem%3A04423ccd5c53d9b2cdd083e65bf0594ba2cdc77e9404bb9fba53eb79bad0a8fc
Content-Length: 432
```

```
GET https://wiki.homework.331.com/Shibboleth.sso/SAML2/POST-SimpleSign?hook=1&
target=ss%3Amem%3A04423ccd5c53d9b2cdd083e65bf0594ba2cdc77e9404bb9fba53eb79bad0a8fc HTTP/1.1
Host: wiki.homework.331.com
User-Agent: Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:93.0) Gecko/20100101 Firefox/93.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate, br
Referer: https://saml.homework.331.com/
Connection: keep-alive
Cookie:
_shibsession_64656661756c7468747470733a2f2f77696b692e686f6d65776f726b2e3333312e636f6d2f73686962626f6c657468=_70
b0be361914386e3d1784f1df4f185c
Upgrade-Insecure-Requests: 1
Sec-Fetch-Dest: document
Sec-Fetch-Mode: navigate
Sec-Fetch-Site: same-site
```

Step 6:

```
HTTP/1.1 302 Found
Date: Tue, 02 Nov 2021 15:27:22 GMT
Server: Apache/2.4.18 (Ubuntu)
Expires: Wed, 01 Jan 1997 12:00:00 GMT
Cache-Control: private,no-store,no-cache,max-age=0
Location: https://wiki.homework.331.com/protected/py.py
Content-Length: 317
Keep-Alive: timeout=5, max=98
Connection: Keep-Alive
Content-Type: text/html; charset=iso-8859-1
```

Step 7:

```
GET https://wiki.homework.331.com/protected/py.py HTTP/1.1
Host: wiki.homework.331.com
User-Agent: Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:93.0) Gecko/20100101 Firefox/93.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/avif,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate, br
Referer: https://saml.homework.331.com/
Connection: keep-alive
Cookie: _shibsession_64656661756c7468747470733a2f2f77696b692e686f6d65776f726b2e3333312e636f6d2f73686962652626f6c657468=_70b0be361914386e3d1784f1df4f185c
Upgrade-Insecure-Requests: 1
Sec-Fetch-Dest: document
Sec-Fetch-Mode: navigate
Sec-Fetch-Site: same-site
```

Step 8:

```
HTTP/1.1 200 OK
Date: Tue, 02 Nov 2021 15:27:22 GMT
Server: Apache/2.4.18 (Ubuntu)
Vary: Accept-Encoding
Content-Encoding: gzip
Content-Length: 1491
Keep-Alive: timeout=5, max=97
Connection: Keep-Alive
Content-Type: text/html
```