

## Lab04: Web technology and vulnerability (Front-end)

### Learning Goals

- Understand the basic RSA crypto mechanism and implementation.
- Know how to make website page with front-end language (HTML 、 React 、 CSS)

### Tasks

**Task 1: Easy RSA decryption**

**Task 2: AWS account registration**

**Task 3: Make a personal page with front-end language (HTML 、 React 、 CSS)**

## Lab Procedure

### Task 1: Easy RSA decryption

#### Q1 :

Alice wants to send you a message, the encrypted cypher is:

$c = 0x4e2c1f3cdd0ad977399813d9afaa13e1eb224665f9b35f988343d348570570fb$

Both Alice and Eve have your public key:

$e = 0x10001$

$n = 0xa233271b7f7eec0e721c745aed5fb67e9d57cb5086863fd922ddae2760edd059$

Can Eve know the message from cypher?

#### Q2 :

You have the private key

$d = 0x314235ab3d320f8067994aa0de9c05b0bc346e83c8ba767d1684cc4b10d8aff1$

$n$  is the same

What's the message?

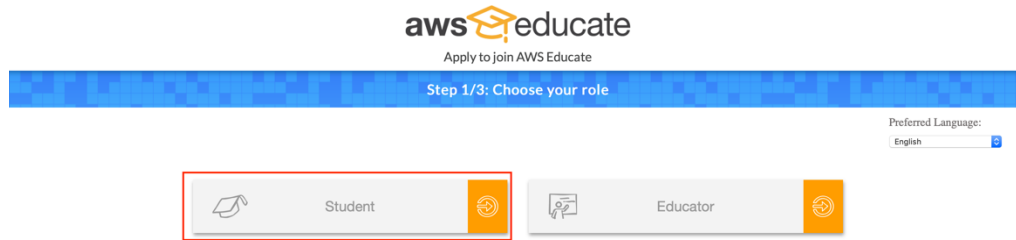
```
c = 0x4e2c1f3cdd0ad977399813d9afaa13e1eb224665f9b35f988343d348570570fb
d = 0x314235ab3d320f8067994aa0de9c05b0bc346e83c8ba767d1684cc4b10d8aff1
n = 0xa233271b7f7eec0e721c745aed5fb67e9d57cb5086863fd922ddae2760edd059
m = pow(c, d, n)
```

Screenshot 1

## Task 2: AWS account registration

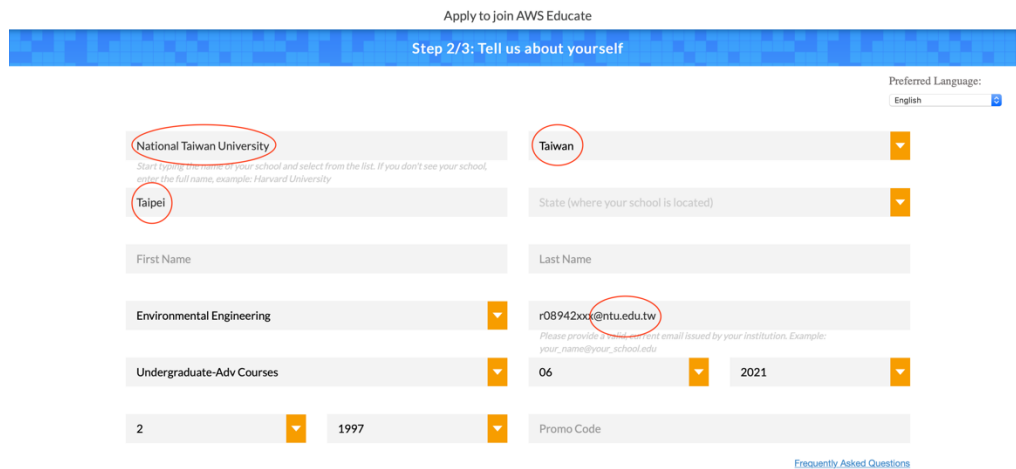
Step 1: Visit AWS Educate Registration Site: <https://www.awseducate.com/registration>

Step 2: Choose “Student”



The screenshot shows the AWS Educate registration page. At the top, the AWS Educate logo is displayed with the text "Apply to join AWS Educate". Below the logo is a blue banner with the text "Step 1/3: Choose your role". On the right side, there is a "Preferred Language:" dropdown menu set to "English". In the center, there are two buttons: "Student" and "Educator". The "Student" button is highlighted with a red box.

Step 3: Insert account information; then click “Next”



The screenshot shows the AWS Educate registration page, Step 2/3: Tell us about yourself. The page has a blue banner with the text "Step 2/3: Tell us about yourself". On the right side, there is a "Preferred Language:" dropdown menu set to "English". The form contains several fields: "National Taiwan University" (circled in red), "Taiwan" (circled in red), "Taipai" (circled in red), "Environmental Engineering" (dropdown), "Undergraduate-Adv Courses" (dropdown), "2" (dropdown), "1997" (dropdown), "r08942xxx@ntu.edu.tw" (circled in red), "06" (dropdown), "2021" (dropdown), and "Promo Code". A "Frequently Asked Questions" link is at the bottom right.

(Note that you should insert exactly the same value as in each circled field)

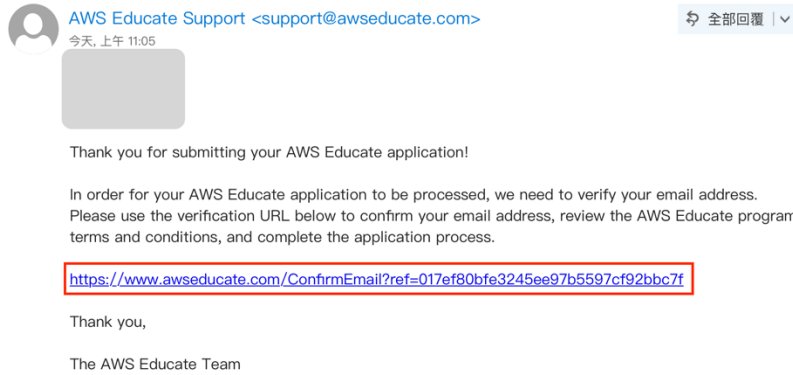
Step 4: Choose “... AWS Educate Starter Account”; then click “Next”



The screenshot shows the AWS Educate registration page, Step 3/3: Choose one of the following. The page has a blue banner with the text "Step 3/3: Choose one of the following". On the right side, there is a "Preferred Language:" dropdown menu set to "English". There are two options: "Click here to enter an AWS Account ID" and "Click here to select an AWS Educate Starter Account". The "Click here to select an AWS Educate Starter Account" option is highlighted with a red box. Below the options, there is a "Frequently Asked Questions" link.

Step 5: Open your NTU mailbox and click the verification link from the mail sent by AWS support.

#### Email Verification – AWS Educate Application



Step 6: Scroll down -> “I Agree” -> “SUBMIT”




Step 7:

Now your account is under review. It will take about 1~2 days.

Once the review is complete, you will receive an email like this:

Click “Click here”

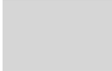
AWS Educate Application Approved



AWS Educate Support <support@awseducate.com>

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Congratulations!

Your AWS Educate application has been approved. As a member of the AWS Educate program, you will gain access to the benefits listed below:

**AWS Educate Student Portal**

The AWS Educate Student Portal is the hub for AWS Educate students around the world to find AWS content to help with classwork, connect to self-paced labs and training resources.

[Click here](#) to set your password / login to the AWS Educate Student Portal. After logging in, click AWS Account at the top of the page to access AWS services, whether you entered an AWS ID or selected Starter Account on your application. Note that Starter Accounts are not eligible for AWS Free Tier.

Step 8:

Set new password.

## Welcome to the AWS Educate Community

### Set Your Password

Your Login Credential

New Password

Verify New Password

Set Password

Step 9:

Start education account and agree the terms and conditions

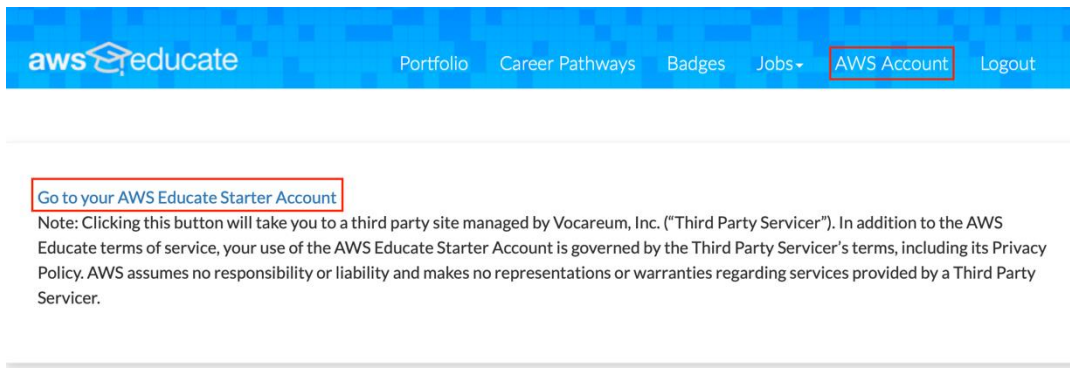
Vocareum's failure to enforce any right or provision of these Terms will not be a right or provision will be effective only if in writing and signed by a duly authorized person. The exercise by either party of any of its remedies under these Terms will not be affected by its failure to enforce any right or provision of these Terms.

### Contact Information

If you have any questions about these Terms or the Services, please contact Vocareum at support@vocareum.com.

Step 10:

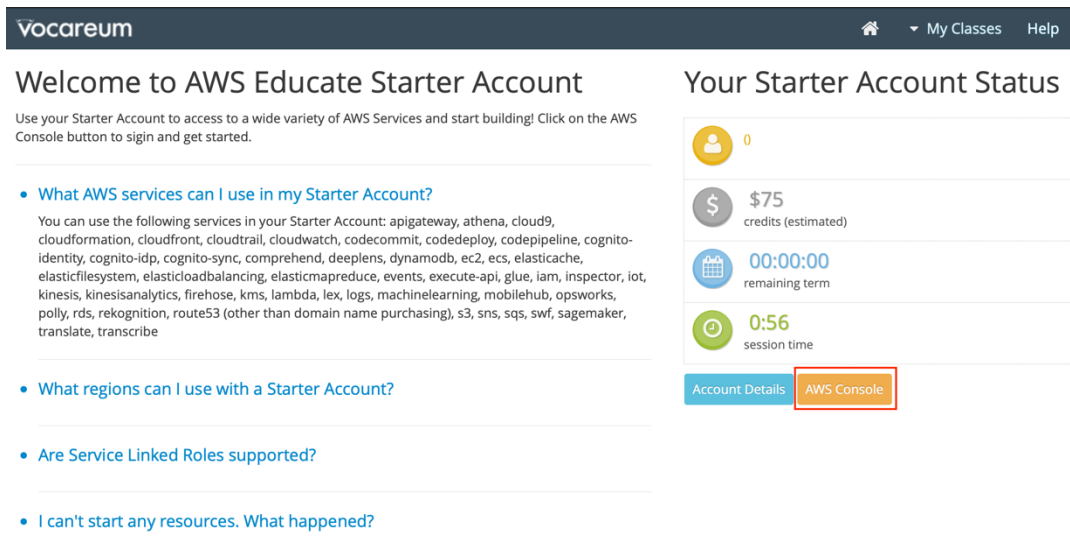
Now you will be redirected to a starter page. Click “AWS Account” -> “Go to ...”



The screenshot shows the top navigation bar of the AWS Educate website. The bar has a blue background with the 'aws educate' logo on the left. To the right of the logo are links for 'Portfolio', 'Career Pathways', 'Badges', 'Jobs', 'AWS Account' (which is highlighted with a red box), and 'Logout'. Below the navigation bar, there is a section with a red-bordered button that says 'Go to your AWS Educate Starter Account'. Below this button is a note: 'Note: Clicking this button will take you to a third party site managed by Vocareum, Inc. ("Third Party Servicer"). In addition to the AWS Educate terms of service, your use of the AWS Educate Starter Account is governed by the Third Party Servicer's terms, including its Privacy Policy. AWS assumes no responsibility or liability and makes no representations or warranties regarding services provided by a Third Party Servicer.'

Step 11:

Click “AWS Console” to start using AWS services!



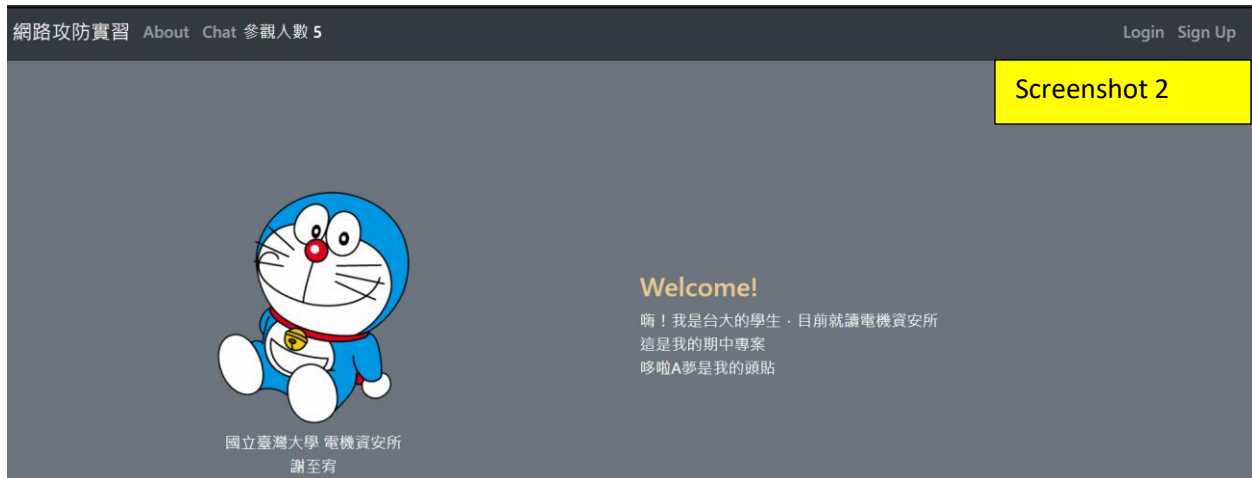
The screenshot shows the 'Welcome to AWS Educate Starter Account' page. The page has a dark header with the 'Vocareum' logo on the left and navigation links for 'My Classes' and 'Help' on the right. The main content area is divided into two columns. The left column is titled 'Welcome to AWS Educate Starter Account' and contains a sub-header 'Use your Starter Account to access to a wide variety of AWS Services and start building! Click on the AWS Console button to sign in and get started.' Below this is a list of questions: 'What AWS services can I use in my Starter Account?', 'What regions can I use with a Starter Account?', 'Are Service Linked Roles supported?', and 'I can't start any resources. What happened?'. The right column is titled 'Your Starter Account Status' and contains a table with four rows: '0' (user icon), '\$75 credits (estimated)' (dollar sign icon), '00:00:00 remaining term' (calendar icon), and '0:56 session time' (clock icon). At the bottom of the right column are two buttons: 'Account Details' and 'AWS Console' (which is highlighted with a red box).

### Task 3: Make a personal page with front-end language (HTML、React、CSS)

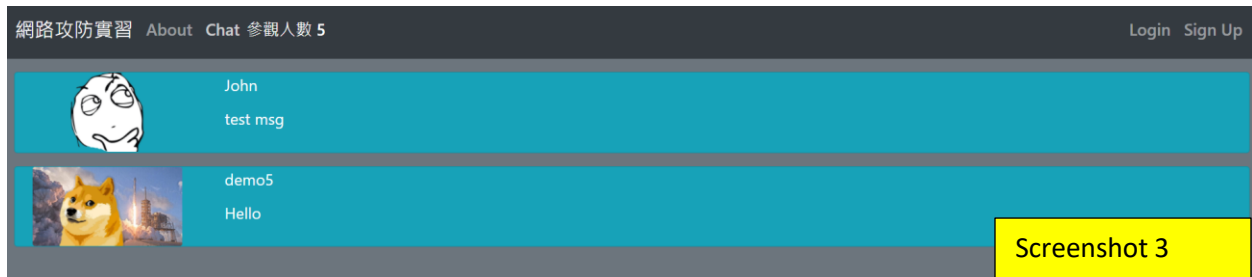
In this task, you need to make a website with the following features:

1. A photograph of yourself.
2. A brief introduction of yourself.
3. A message board allowing users to leave messages (It is ok for messages disappearing after you refresh the page)
4. A counter showing how many visitor visited your site. (It is ok for value be 0 after you refresh the page)

The example page layout like this:



When we leave a message, it will show on the website. It's ok for the message without avatar.



After we refresh the page (F5). The message would disappear. It is because we do not implement the backend database to save the state of website.

