



# **SIT32004**

# **ICT Application Development**

Practicum 01



Why GitHub? Enterprise Explore Marketplace Pricing Search GitHub Sign in Sign up

## Join GitHub

The best way to design, build, and ship software.

Step 1: Set up your account

Step 2: Choose your plan

Step 3: Tailor your experience

### Create your personal account

**Username \***

cbchoi

Username is already taken

**Email address \***

cbchoi@handong.edu

Email is invalid or already taken

**Password \***

.....

Make sure it's more than 15 characters OR at least 8 characters including a number and a lowercase letter. [Learn more.](#)

### Verify account

당신이 진짜 사람인지 알 수 있도록 이 퍼즐을 풀어주세요

검증하기

By clicking "Create an account" below, you agree to our [terms of service](#) and [privacy statement](#). We'll occasionally send you account related emails.

Create an account

User ID  
example: cbchoi

Important!!  
E-mail domain should be  
@handong.edu

## Real-world tools, engaged students

GitHub Education helps students, teachers, and schools access the tools and events they need to shape the next generation of software development.



### GitHub Student Developer Pack

The best developer tools, free for students



### GitHub Campus Experts

Training to enrich the technology community at your school



### GitHub Field Day

Unconferences for leaders of technical student communities



### GitHub Classroom

The GitHub workflow, scaled for the needs of students



### GitHub Campus Advisors

Teacher training to master Git and GitHub



### For students

With GitHub, your work will speak for itself.

- Get access to the best developers tools, for free
- Level up your community with leadership training
- Prep to shine on technical teams in industry



### For teachers

The future of software is made on GitHub.

- Teach your students using real-world tools
- Master Git and GitHub
- Bring GitHub Education to your school



Sign in to **GitHub**  
to continue to **GitHub Education**

Username or email address

Password

[Forgot password?](#)

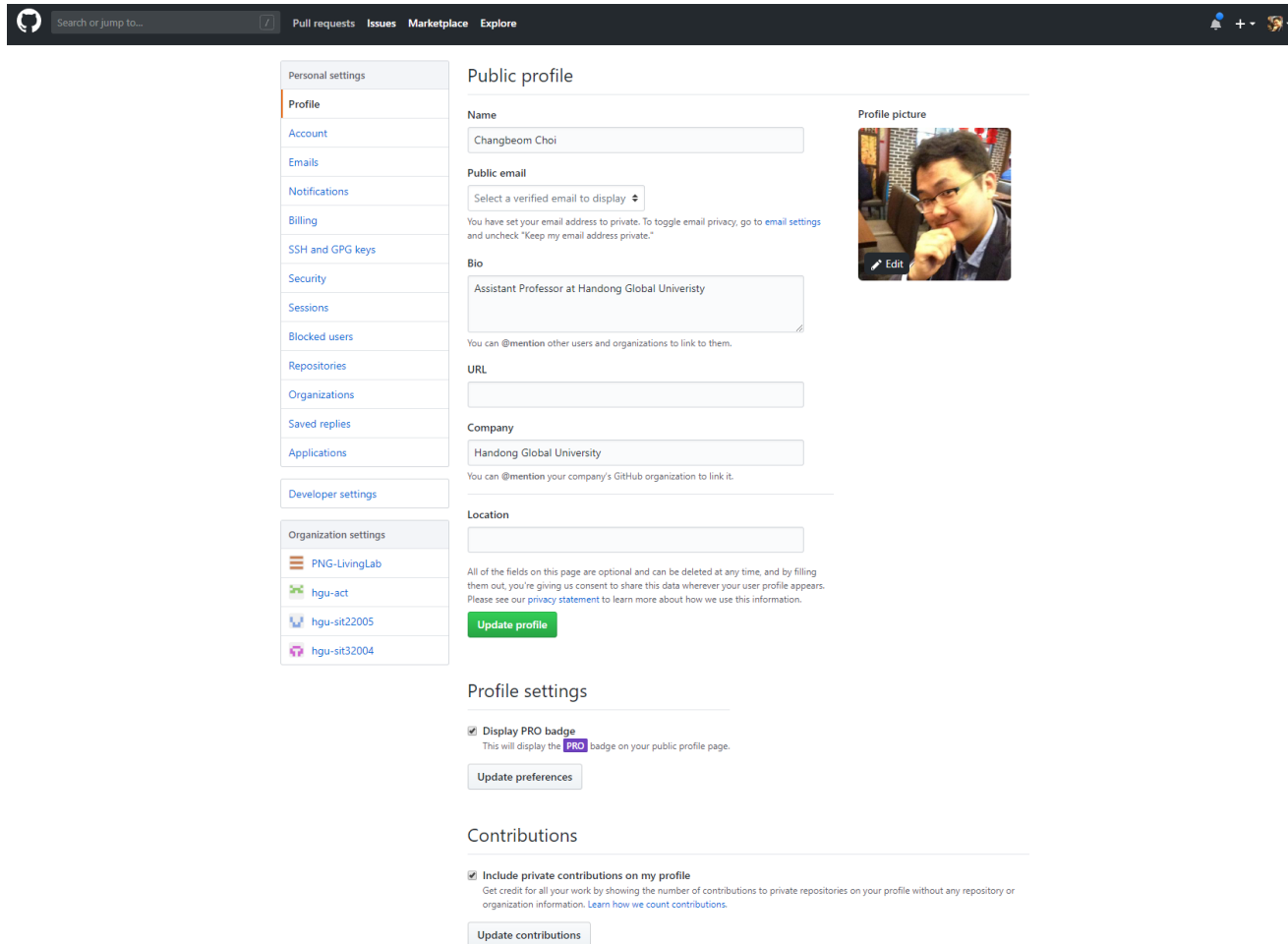
Sign in

New to GitHub? [Create an account.](#)

[Terms](#) [Privacy](#) [Security](#) [Contact GitHub](#)

# Check the Developer License (1/2)

- Go to <https://github.com/settings/profile>



The screenshot shows the GitHub profile settings page for a user named Changbeom Choi. The page is divided into several sections: Personal settings, Public profile, Profile picture, Profile settings, and Contributions. The 'Personal settings' section on the left includes links for Profile, Account, Emails, Notifications, Billing, SSH and GPG keys, Security, Sessions, Blocked users, Repositories, Organizations, Saved replies, and Applications. The 'Public profile' section contains fields for Name (Changbeom Choi), Public email (a dropdown menu), Bio (Assistant Professor at Handong Global University), URL, Company (Handong Global University), and Location. A 'Profile picture' section shows a photo of the user with an 'Edit' button. Below the profile information, there is a note about optional fields and a link to the privacy statement. The 'Profile settings' section has a checkbox for 'Display PRO badge' which is checked, with a note that it will display the 'PRO' badge on the public profile page, and an 'Update preferences' button. The 'Contributions' section has a checkbox for 'Include private contributions on my profile' which is checked, with a note about getting credit for work by showing contributions to private repositories, and an 'Update contributions' button.

Search or jump to... Pull requests Issues Marketplace Explore

Personal settings

Profile

Account

Emails

Notifications

Billing

SSH and GPG keys

Security

Sessions

Blocked users

Repositories

Organizations

Saved replies

Applications

Developer settings

Organization settings

PNG-LivingLab

hgu-act

hgu-sit22005

hgu-sit32004

Public profile

Name

Changbeom Choi

Public email

Select a verified email to display

You have set your email address to private. To toggle email privacy, go to [email settings](#) and uncheck "Keep my email address private."

Bio

Assistant Professor at Handong Global University

You can @mention other users and organizations to link to them.

URL

Company

Handong Global University

You can @mention your company's GitHub organization to link it.

Location

All of the fields on this page are optional and can be deleted at any time, and by filling them out, you're giving us consent to share this data wherever your user profile appears. Please see our [privacy statement](#) to learn more about how we use this information.

Update profile

Profile picture

Profile settings

☒ Display PRO badge

This will display the **PRO** badge on your public profile page.

Update preferences

Contributions

☒ Include private contributions on my profile

Get credit for all your work by showing the number of contributions to private repositories on your profile without any repository or organization information. [Learn how we count contributions.](#)

Update contributions

# Check the Developer License (2/2)

- Check Billing Information
  - Plan should be Github Pro

The screenshot shows the GitHub Billing overview page. The left sidebar contains navigation links for Personal settings (Profile, Account, Emails, Notifications, Billing, SSH and GPG keys, Security, Sessions, Blocked users, Repositories, Organizations, Saved replies, Applications), Developer settings, and Organization settings (PNG-LivingLab, hgu-act, hgu-sit22005, hgu-sit32004). The main content area is titled 'Billing overview' and includes sections for Plan (GitHub Pro), Git LFS Data (\$0 per month), Marketplace Apps, Payment (No payment method on file), Coupon (\$7.00 off for 2 years), and Extra info. A 'Payment history' section shows no payments. A 'Downgrade your plan' section offers a 'Downgrade to Free' button. The footer shows copyright information for 2019 GitHub, Inc. and various links like Terms, Privacy, Security, Status, Help, Contact GitHub, Pricing, API, Training, Blog, and About.

Search or jump to... Pull requests Issues Marketplace Explore

Personal settings

- Profile
- Account
- Emails
- Notifications
- Billing**
- SSH and GPG keys
- Security
- Sessions
- Blocked users
- Repositories
- Organizations
- Saved replies
- Applications

Developer settings

Organization settings

- PNG-LivingLab
- hgu-act
- hgu-sit22005
- hgu-sit32004

### Billing overview

Plan	GitHub Pro – Pro tools for developers with advanced requirements	
Git LFS Data	\$0 per month for 0 data packs – <a href="#">Learn more about Git LFS</a>	<a href="#">Purchase more</a>
Marketplace Apps	You have not purchased any apps from the Marketplace.	
Payment	No payment method on file. <a href="#">Add payment method</a>	
Coupon	You have an active coupon for \$7.00 off for 2 years, until 2020-09-03.	
Extra info ⓘ	You have not added any additional information for your receipts. <a href="#">Add information</a>	

### Payment history

You have not made any payments.

Amounts shown in USD

### Downgrade your plan

If you downgrade, you'll lose access to unlimited collaborators and advanced tools and insights in private repositories. Need to talk to someone? [Contact us](#)—we'd love to help.

[Downgrade to Free](#)

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- **Flow of execution**

\* Slide Contents are from SIT22001

```
def print_message():  
    print ("SIT22001 is fantastic!")  
    print ("Programming is so much fun")  
  
def repeat_message():  
    print_message()  
    print message()  
  
repeat_message()  
print ("Done")
```

**Execution** begins at the first statement. Statements are executed **one by one, top to bottom.**

**Function definitions** do not change the flow of execution but only define a function.

**Function calls** are like detours in the flow of execution.

# Comments

```
# create a robot with one beeper  
hubo = Robot(bepers = 1)
```

```
# move one step forward  
hubo.move()
```

```
# turn left 90 degrees  
hubo.turn_left()
```

dot notation



**PROBLEM 1: ANALYSIS OF USD-KRW EXCHANGE RATES**

Text files, "1994.txt", "1995. txt", ..... , and "2009.txt", in a folder, "data" contain the daily USD-KRW exchange rates for 16 years from 1994 to 2009, respectively . The format of each file is:

```
.....  
.....  
2009/05/11    0. 00080110  
.....
```

The exchange rate is given as USD per KRW.

(Continued)



For data analysis, read all files (16 files) into a **single long list of tuples**, each consisting of two integers that represent a date and an exchange rate (USD/KRW), respectively, as shown below:

[ ....., (20090511, 1248.28), .....]

Notice that the **exchange rate** is **inversed**.

## Pseudo code

For every year in 1994 - 2009 ,

1. Open the file for each year.
2. Read the exchange rate data of each day.
3. Re-format the data.
4. Append the data to a list.

**Type in the first code** given in the **hand-out** to implement a program for solving this problem.

**Steps 1 and 2 : Open files and read data.**

```
years = range(1994, 2010)
```

```
data = [ ]
```

```
for yr in years:
```

```
    fname = "data/ %d.txt" % yr
```

```
    f = open(fname, "r")
```

step 1

```
        for line in f:
```

```
            do the rest of Step 2
```

step 2

## Step 3: Re-format the data

How to convert date to an integer

"2009/5/11"  $\Rightarrow$  20090511

```
yr, mh, dy = date.split("/")
```

```
date = 10000 * int(yr) + 100 * int(mh) + int(dy)
```

How to inverse the exchange rate

$$\text{KRW/USD} = 1/(\text{USD/KRW})$$

# Homework 01

- Sign up to the [github.com](https://github.com)
- Join the [education.github.com](https://education.github.com)
- Add comments to the code line by line