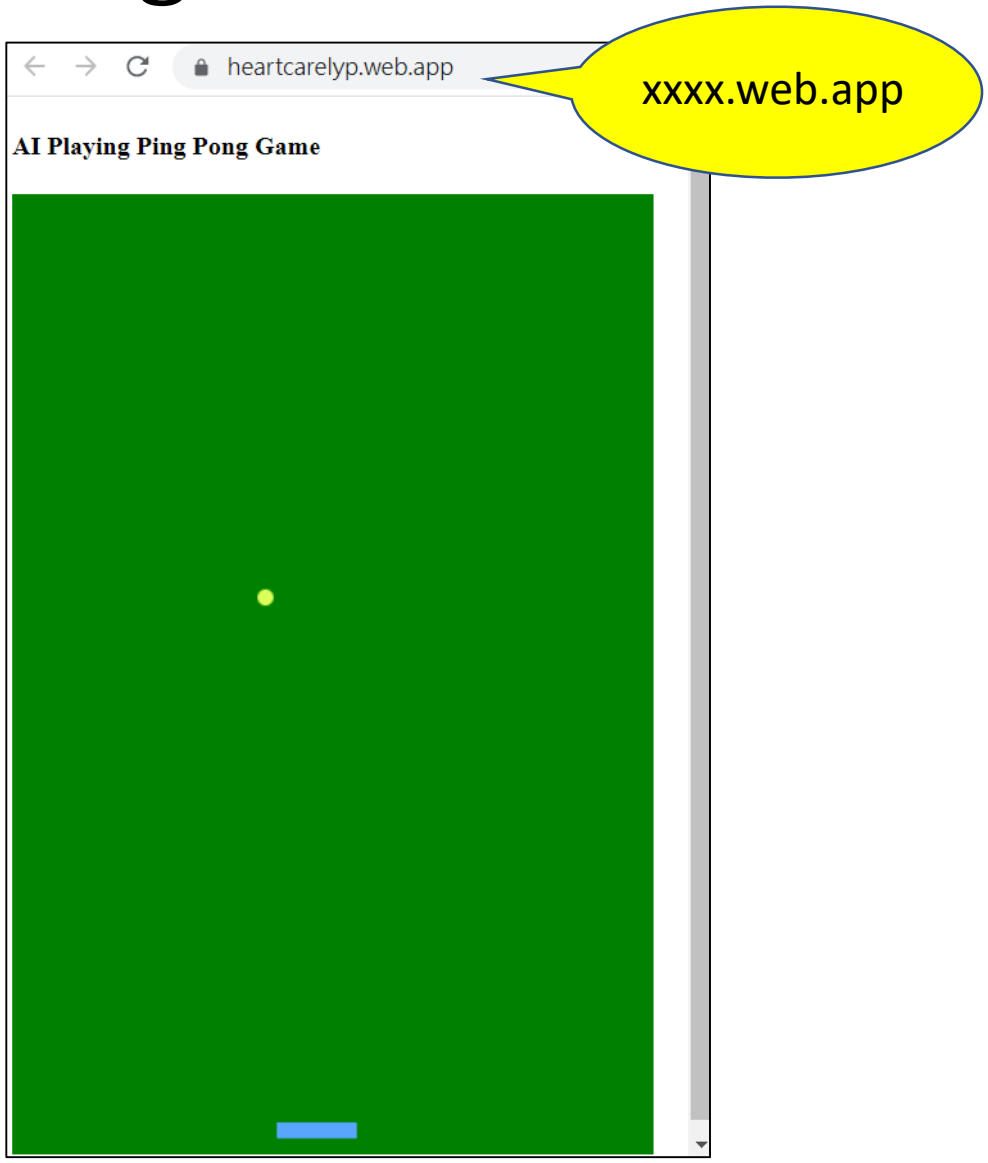
物聯網實務

12_14

AI play ping pong game hosting on firebase

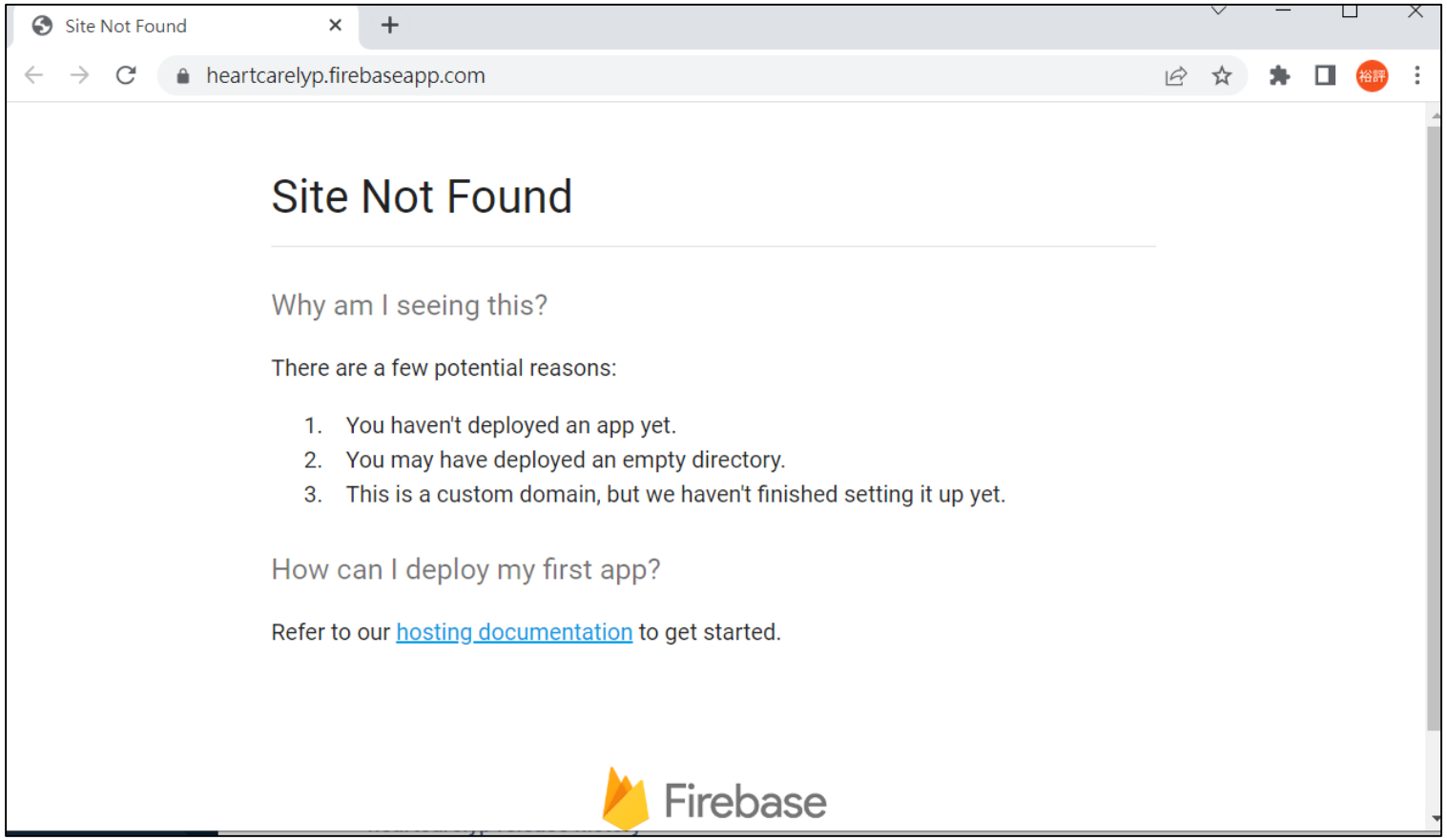
http get

response

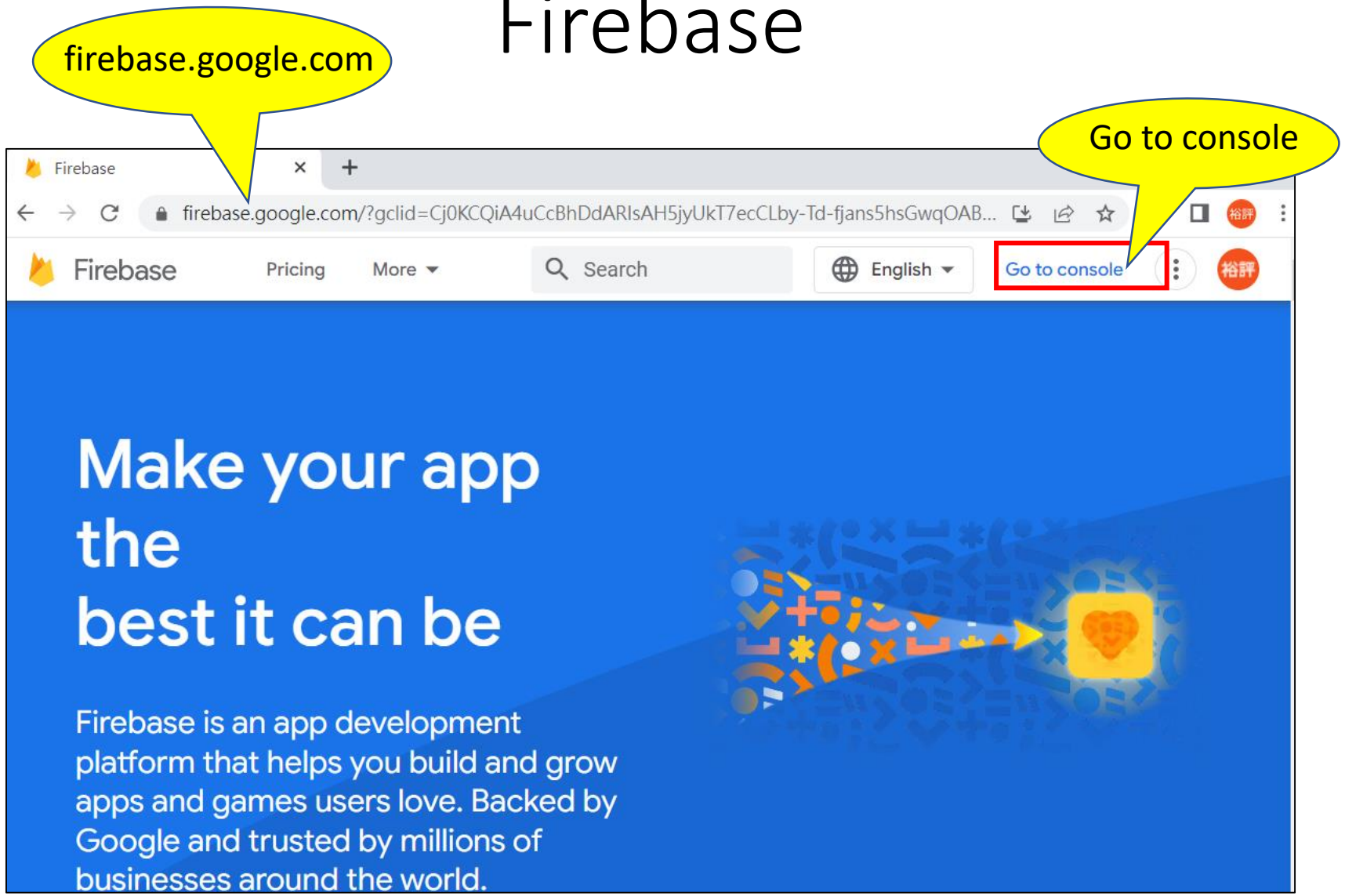


Exercise 13-1

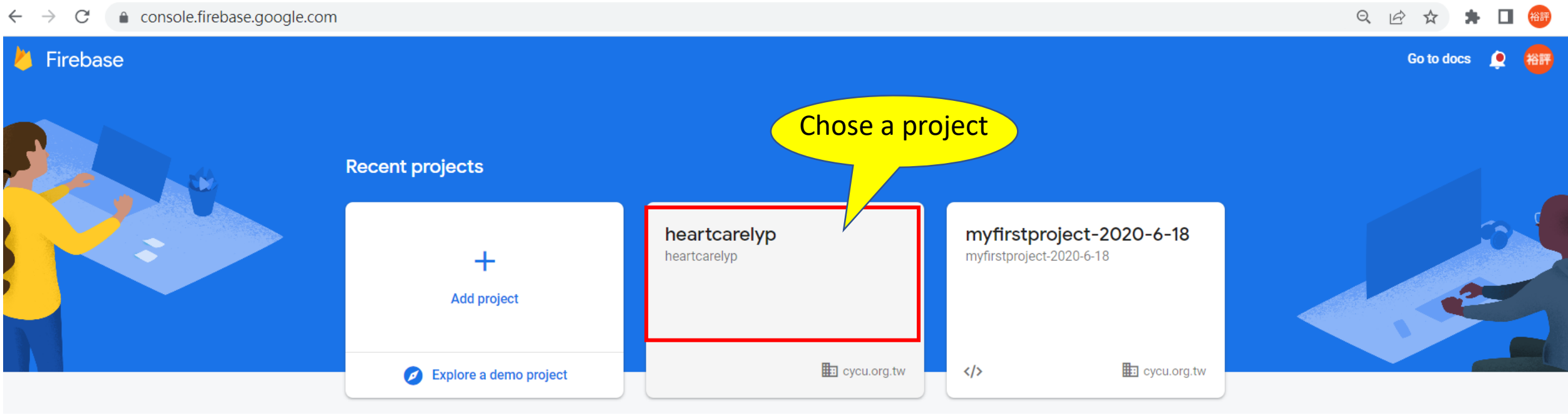
- Start Hosting on Firebase



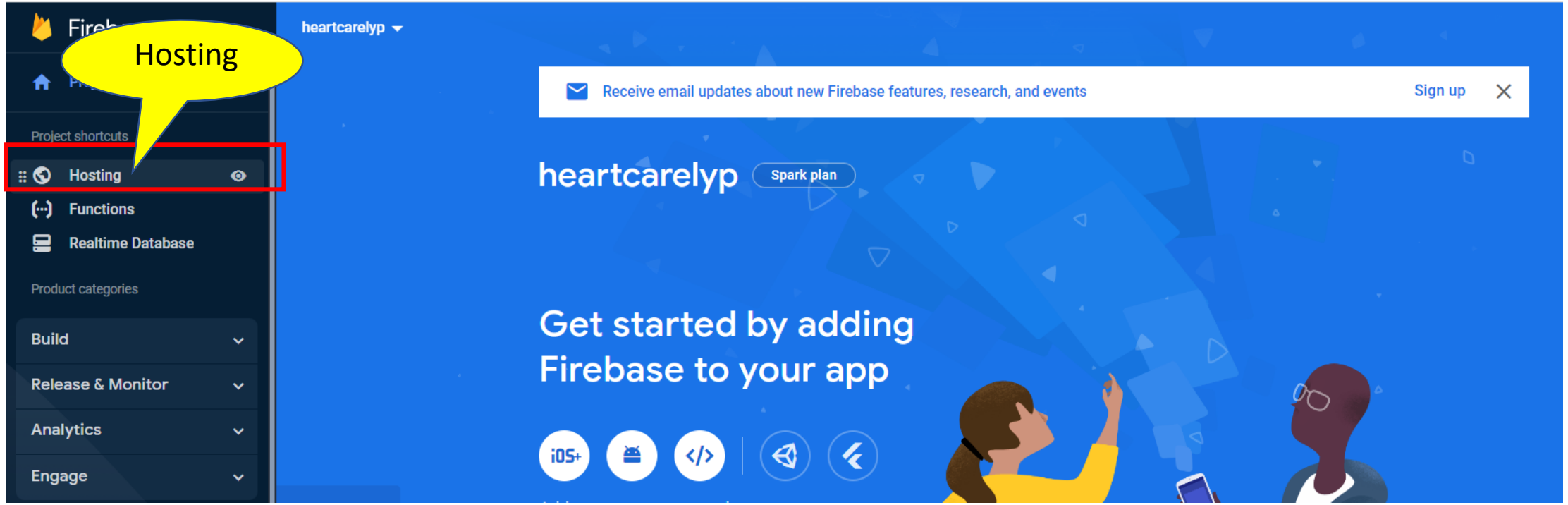
Firebase


firebase.google.com
Go to console
Firebase
firebase.google.com/?gclid=Cj0KCQiA4uCcBhDdARIsAH5jyUkT7ecCLby-Td-fjans5hsGwqOAB...
Firebase
Pricing
More
Search
English
Go to console
Make your app the best it can be
Firebase is an app development platform that helps you build and grow apps and games users love. Backed by Google and trusted by millions of businesses around the world.

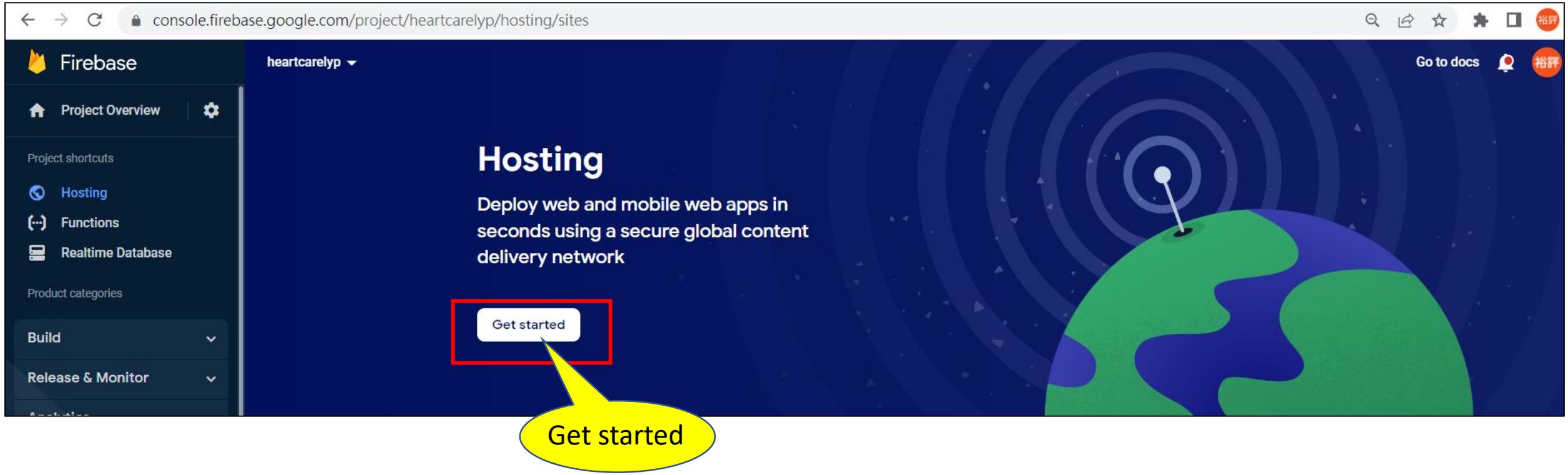
Chose a project

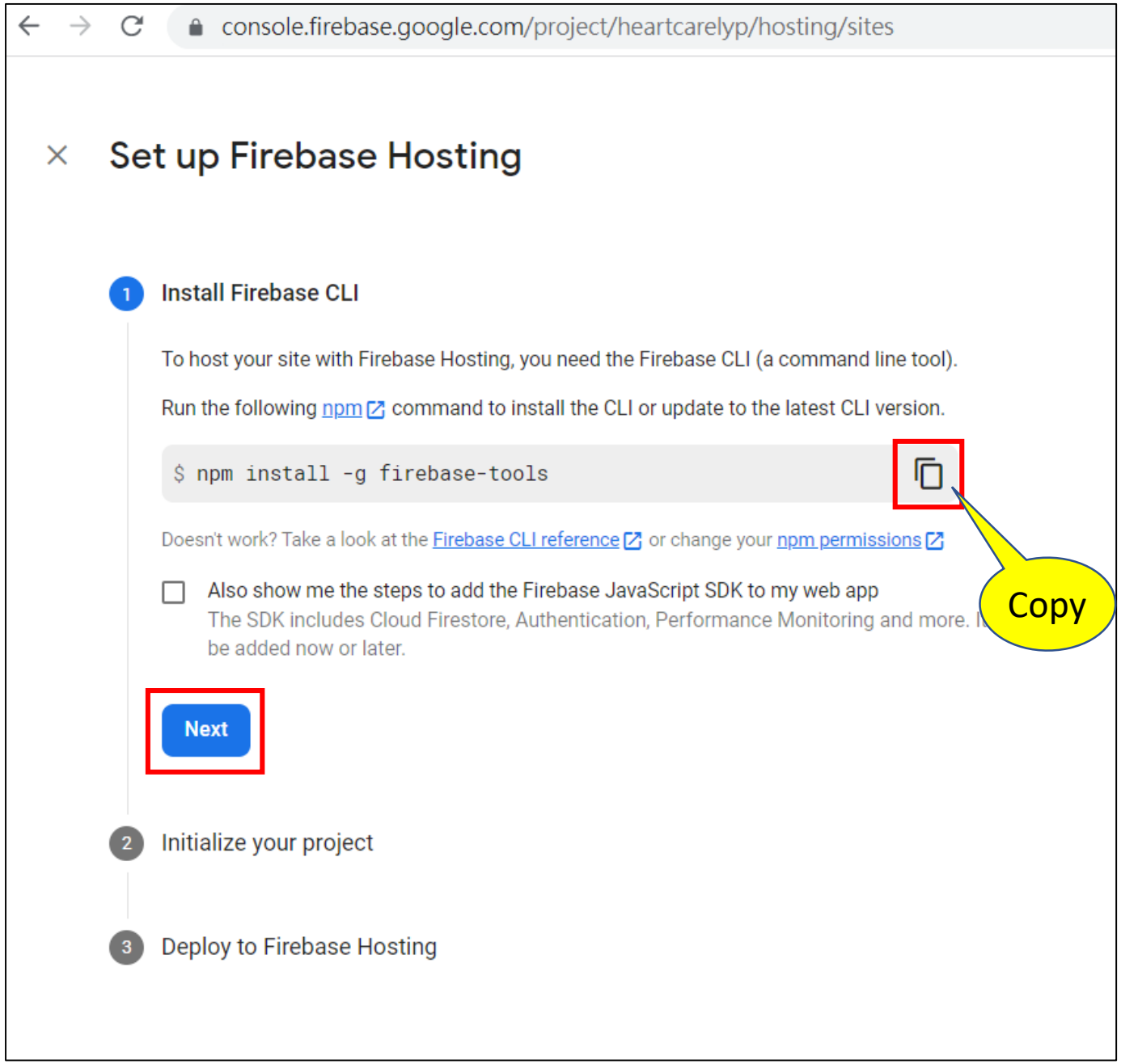


Hosting


Hosting
heartcarelyp
Project shortcuts
Hosting
Functions
Realtime Database
Product categories
Build
Release & Monitor
Analytics
Engage
Receive email updates about new Firebase features, research, and events
Sign up
heartcarelyp
Spark plan
Get started by adding
Firebase to your app
iOS+

Get started

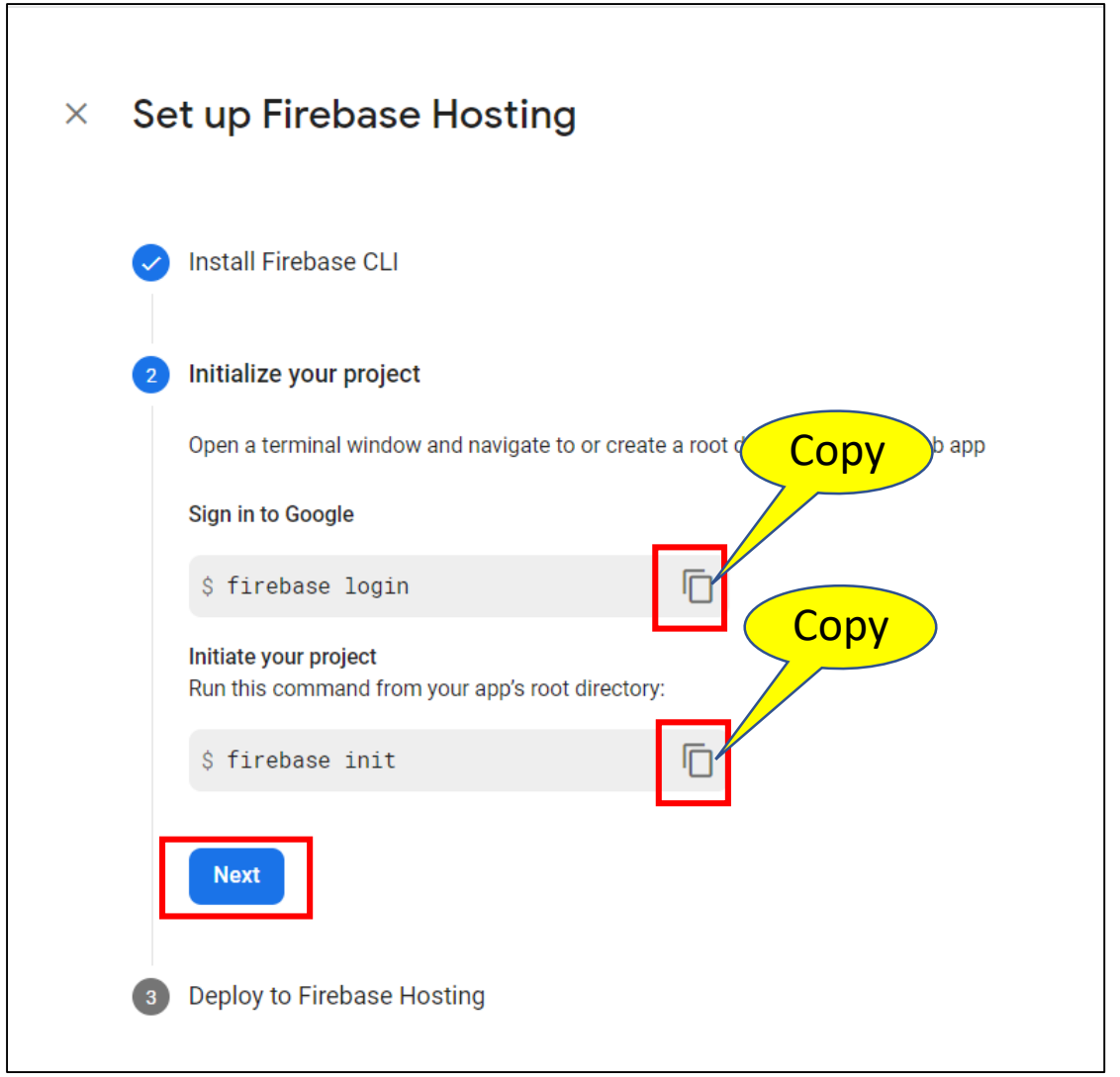

console.firebase.google.com/project/heartcarelyp/hosting/sites
Firebase
heartcarelyp
Go to docs
Project Overview
Project shortcuts
Hosting
Functions
Realtime Database
Product categories
Build
Release & Monitor
Hosting
Deploy web and mobile web apps in seconds using a secure global content delivery network
Get started
Get started



Paste

npm install -g firebase-tools

Copy Paste



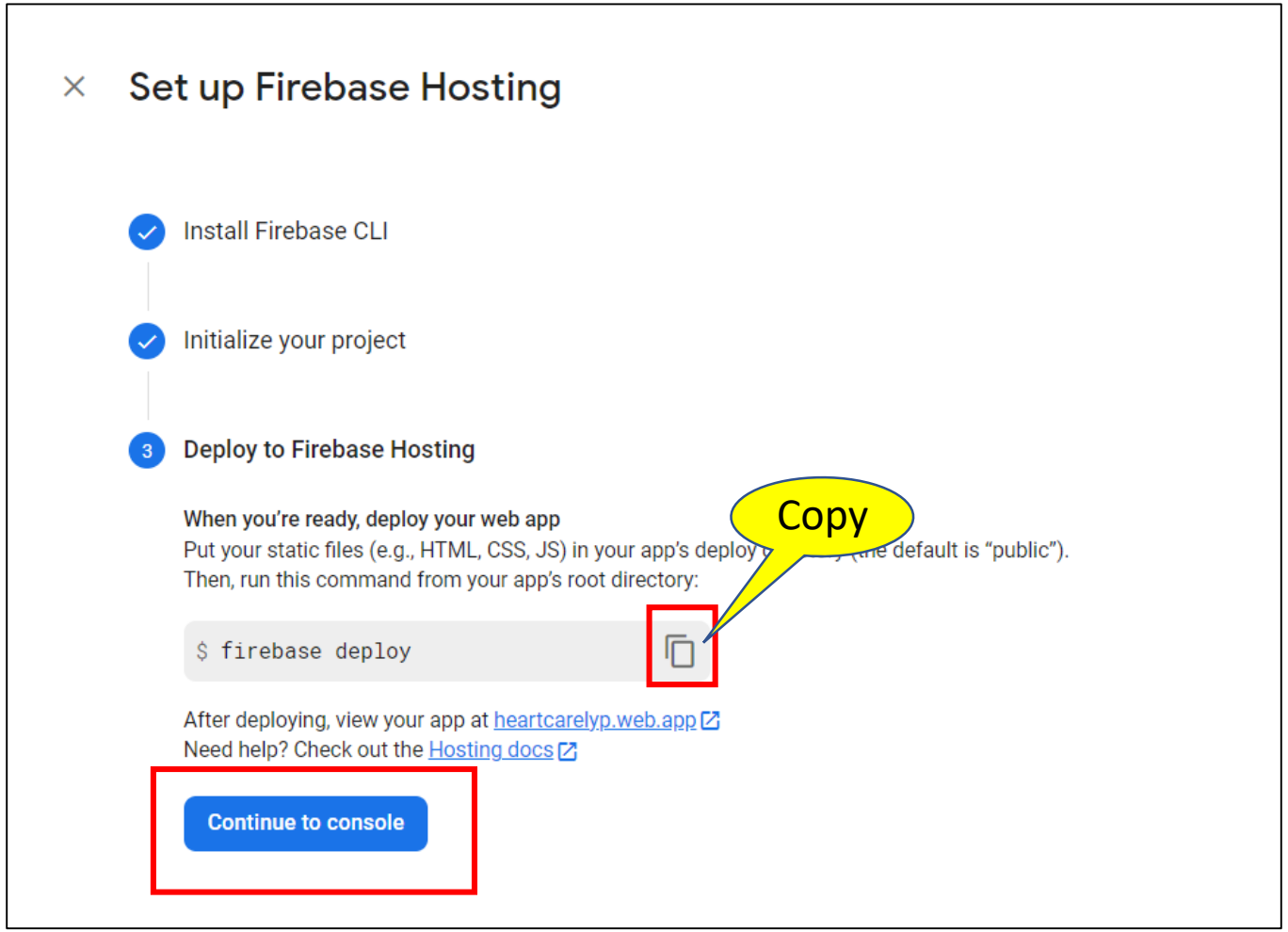
Paste

firebase login

Paste

firebase init

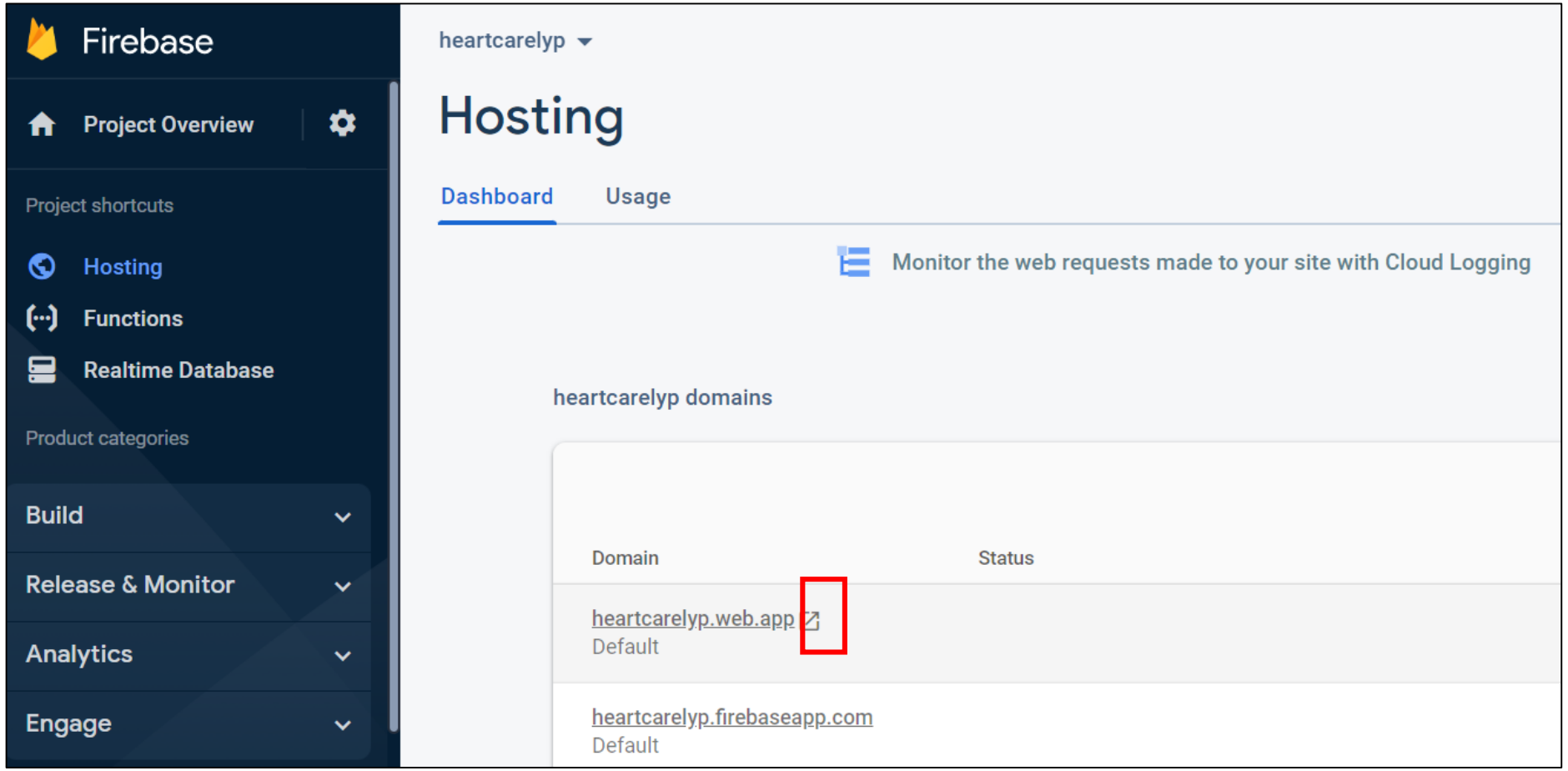
Copy Paste



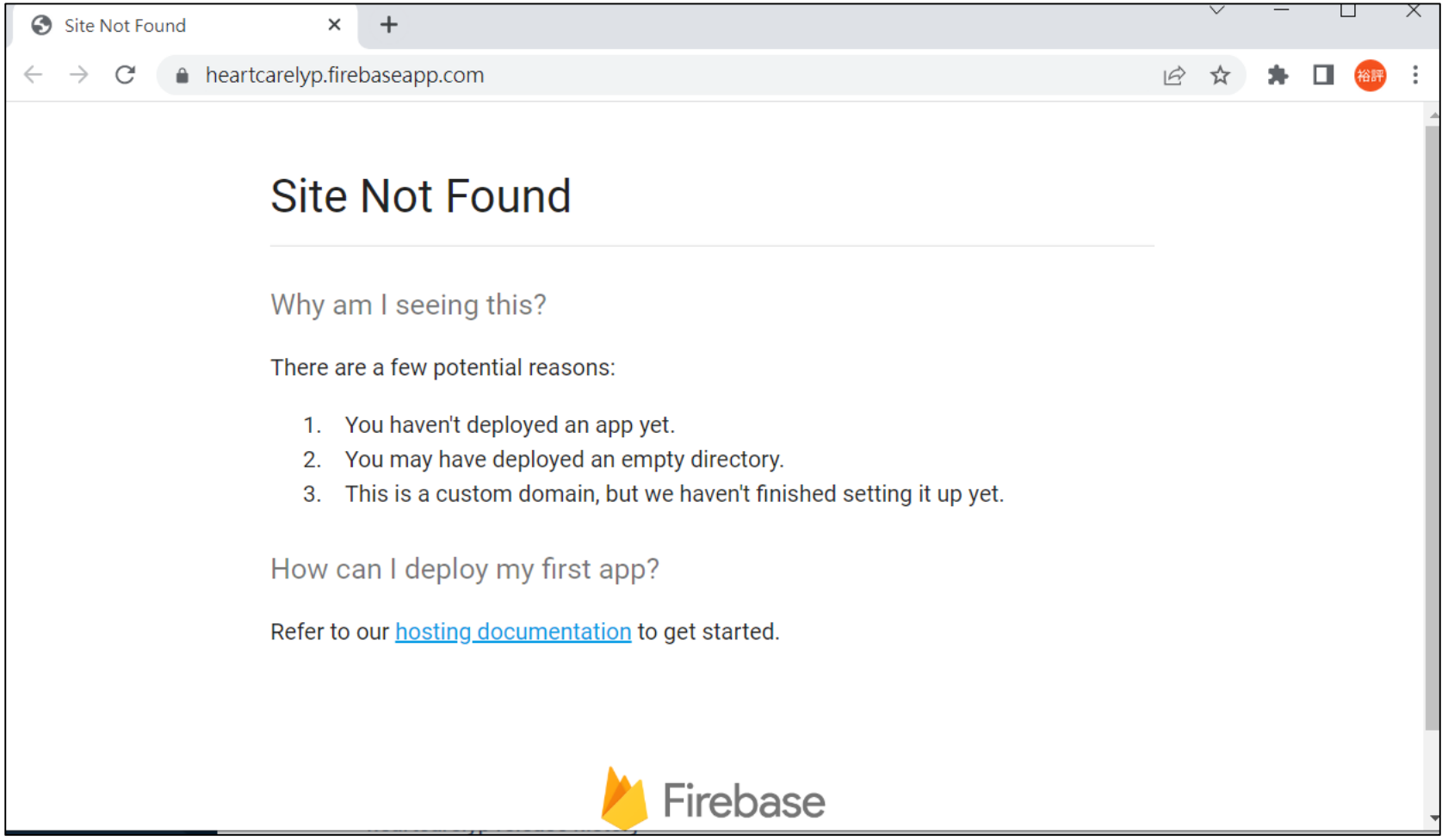
Paste

firebase deploy

Hosting

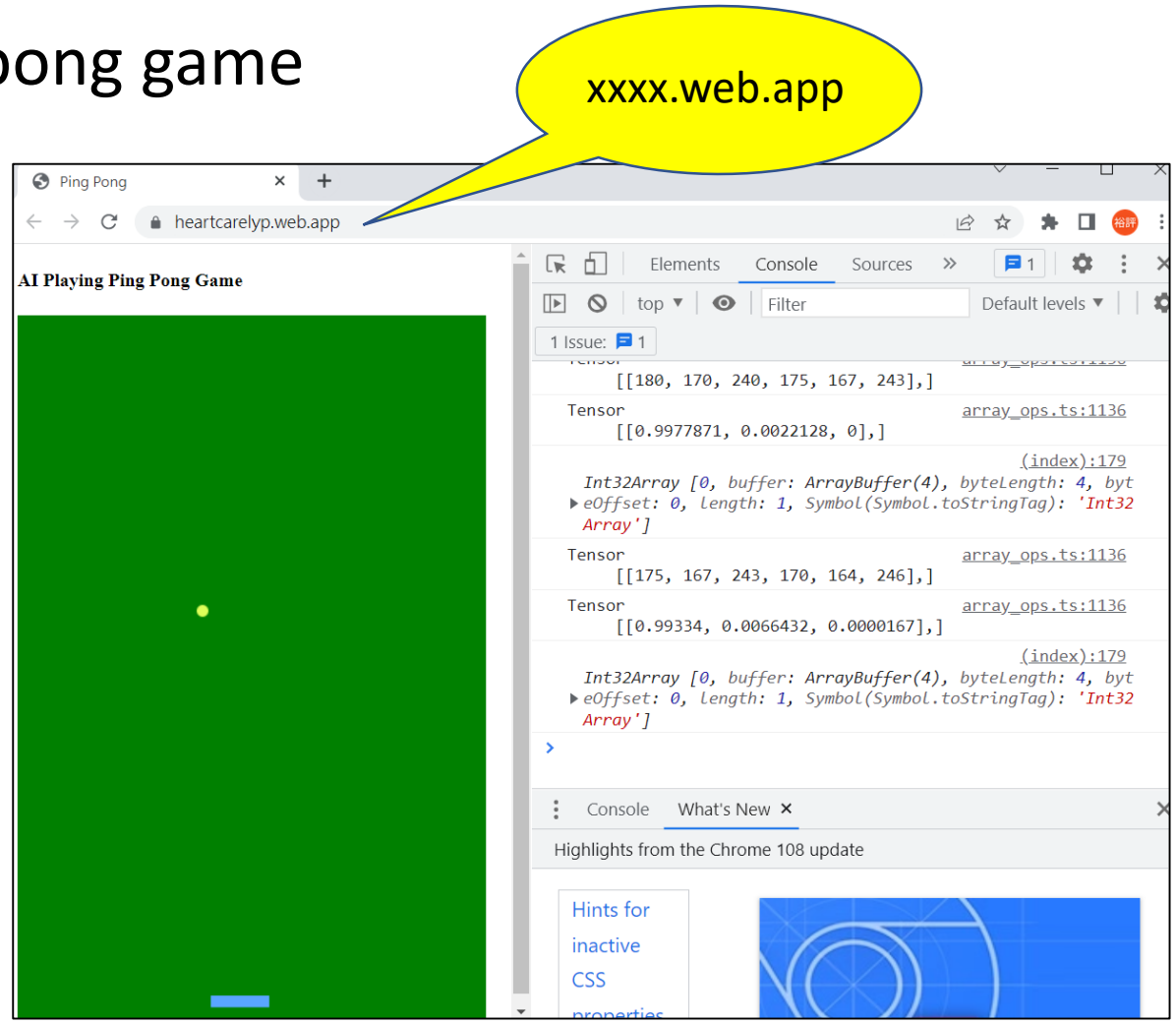

Firebase
Project Overview
Project shortcuts
Hosting
Functions
Realtime Database
Product categories
Build
Release & Monitor
Analytics
Engage
heartcarelyp
Hosting
Dashboard
Usage
Monitor the web requests made to your site with Cloud Logging
heartcarelyp domains
Domain
Status
heartcarelyp.web.app
Default
heartcarelyp.firebaseapp.com
Default

Site Not Found

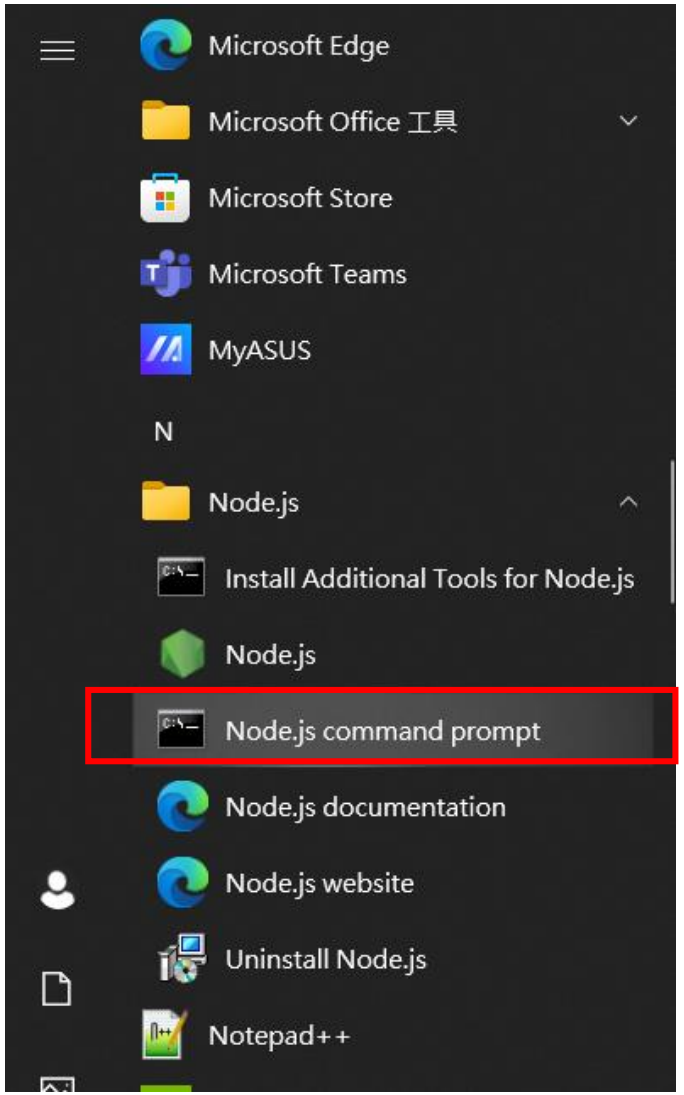


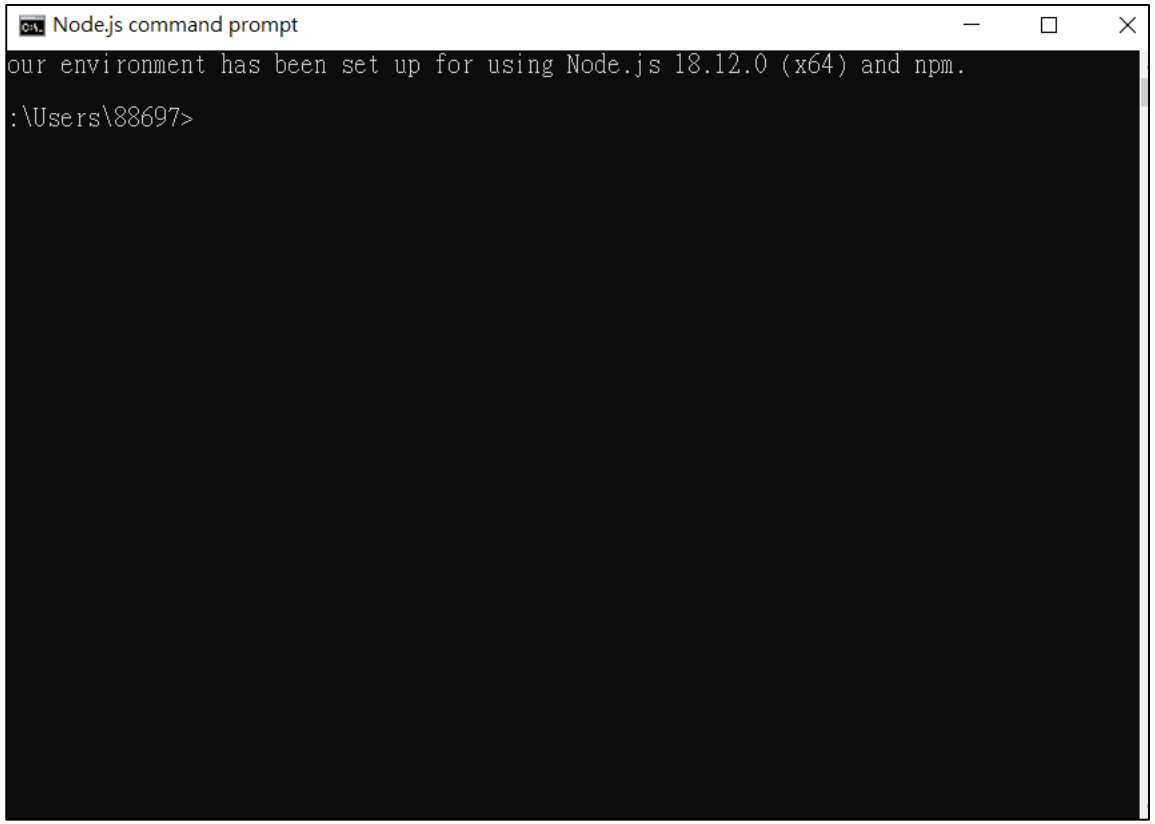
Exercise 13-2

- Hosting your ping pong game

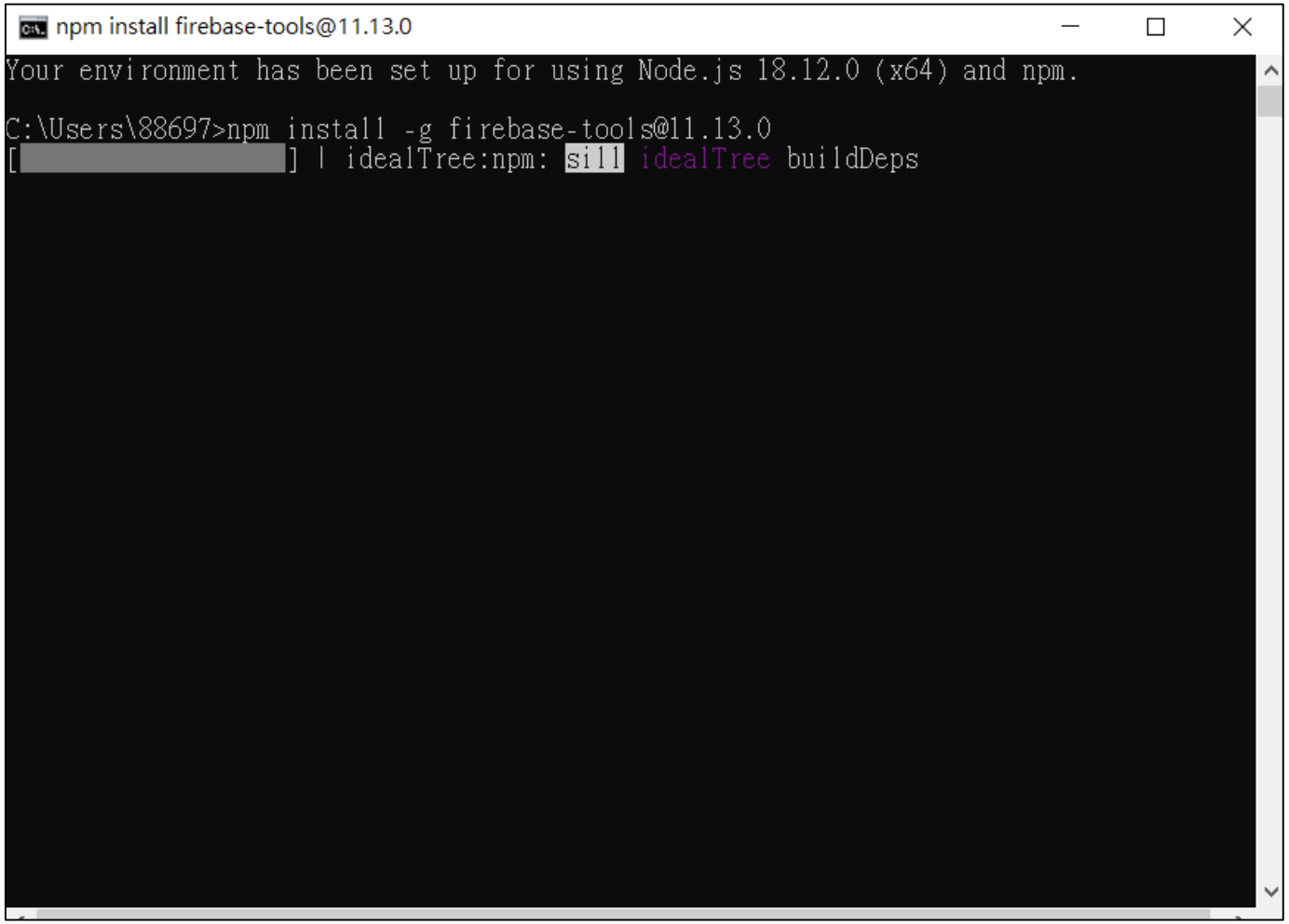


Node.js command prompt

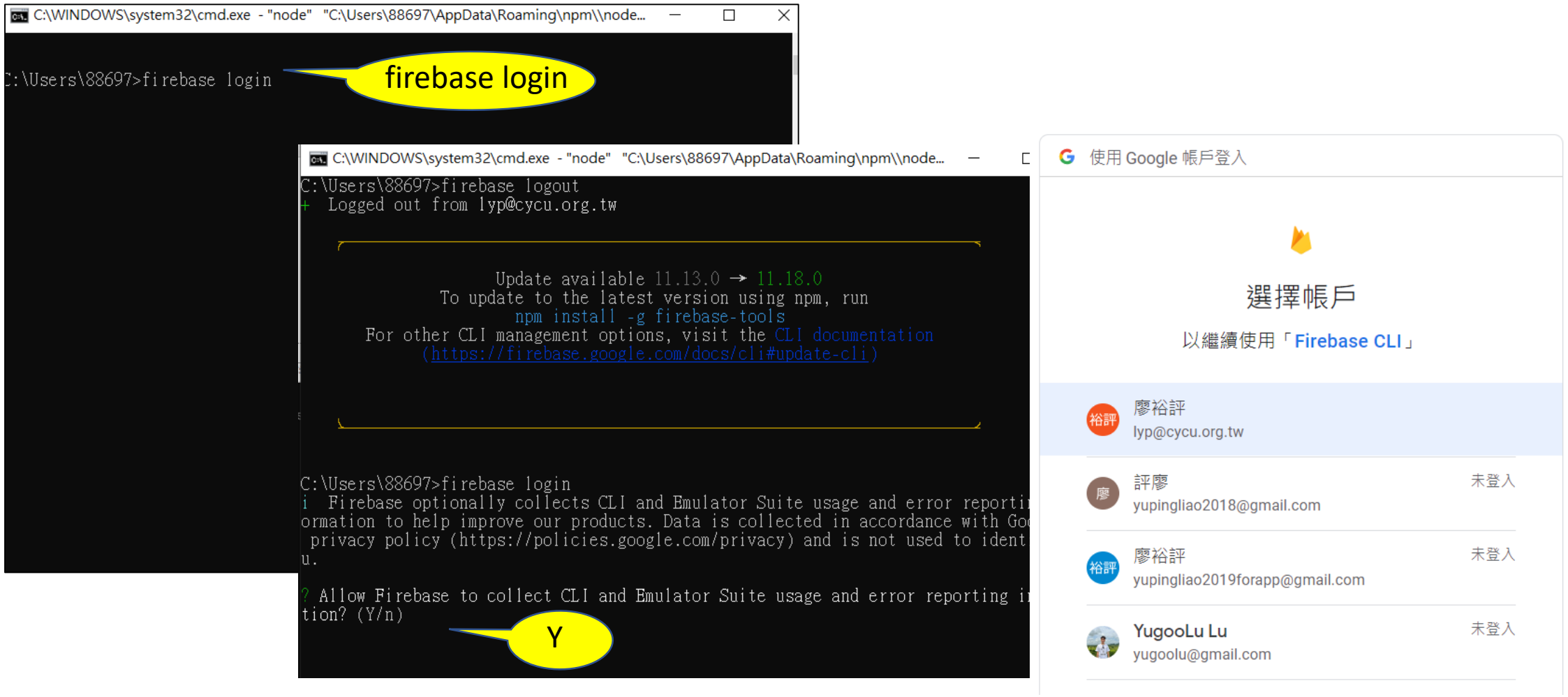




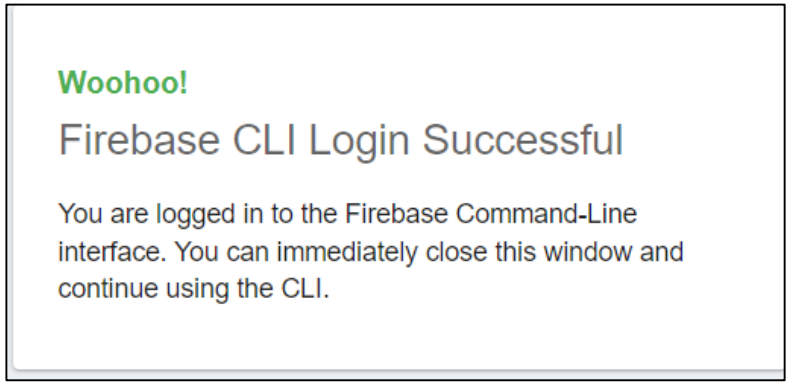
npm install -g firebase-tools@11.13.0

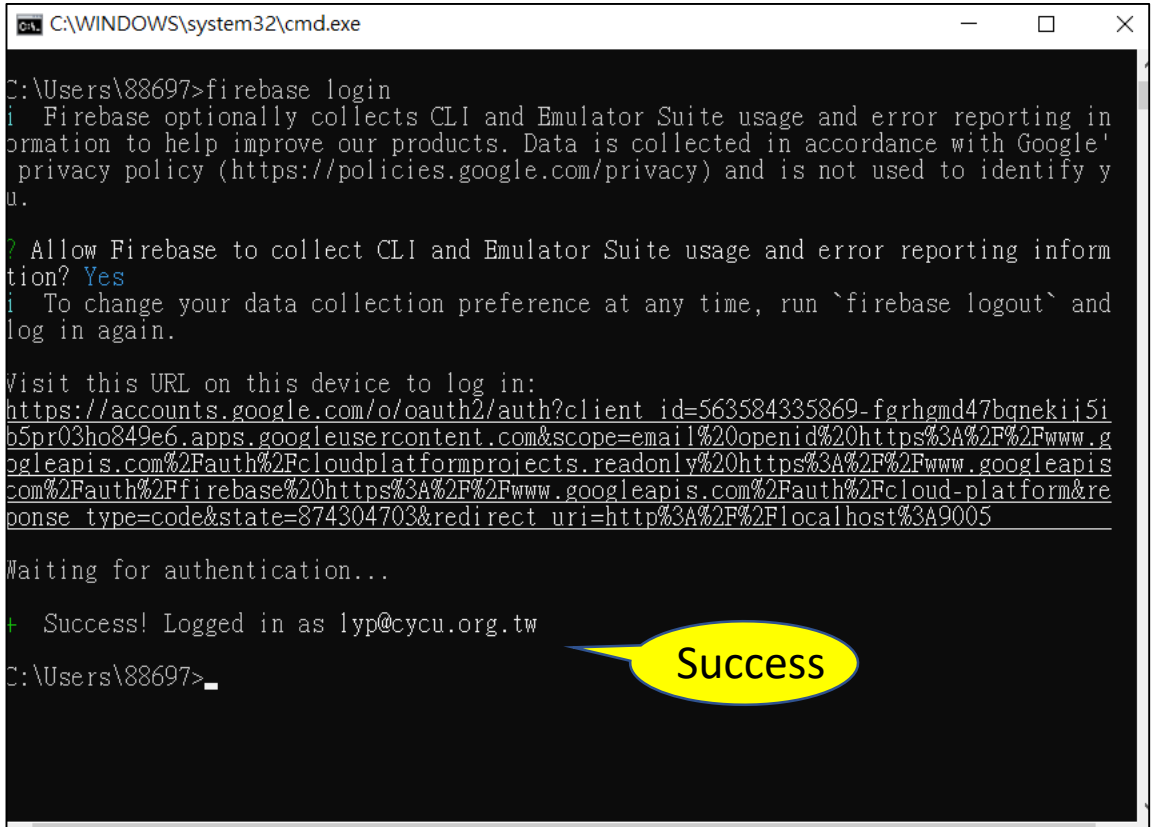


firebase login

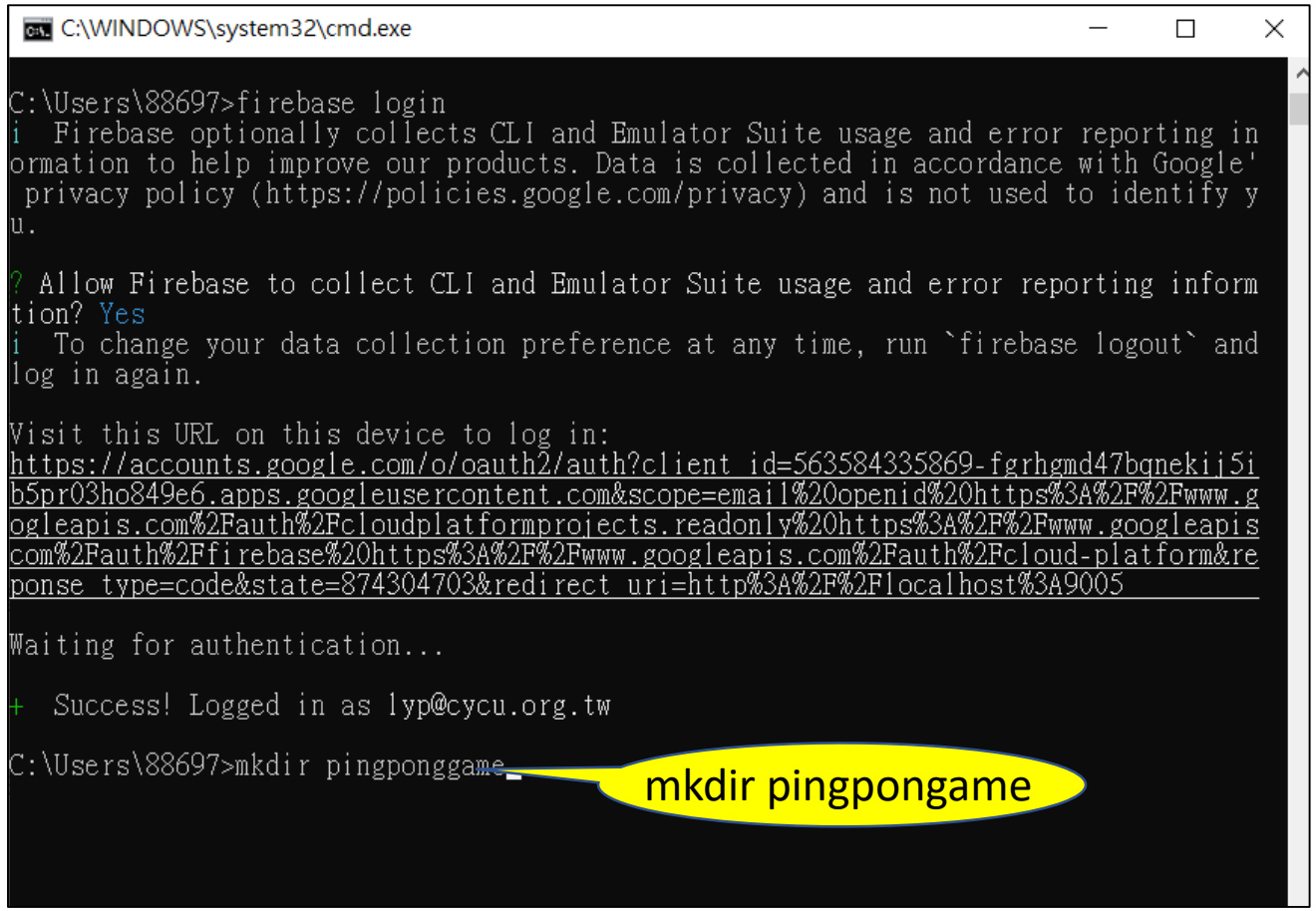


「Firebase CLI」想要存取您的 Google 帳戶
lyp@cycu.org.tw
這麼做將允許「Firebase CLI」進行以下操作：
查看、編輯、設定和刪除您的 Google Cloud 資料，以及查看您 Google 帳戶的電子郵件地址。
查看及管理您的所有 Firebase 資料和設定
查看您的 Cloud Platform 專案
確認「Firebase CLI」是您信任的應用程式
這麼做可能會將機密資訊提供給這個網站或應用程式。您隨時可以前往 Google 帳戶頁面查看或移除存取權。
瞭解 Google 如何協助您安全地分享資料。
詳情請參閱「Firebase CLI」的《隱私權政策》和《服務條款》。
取消
允許
允許

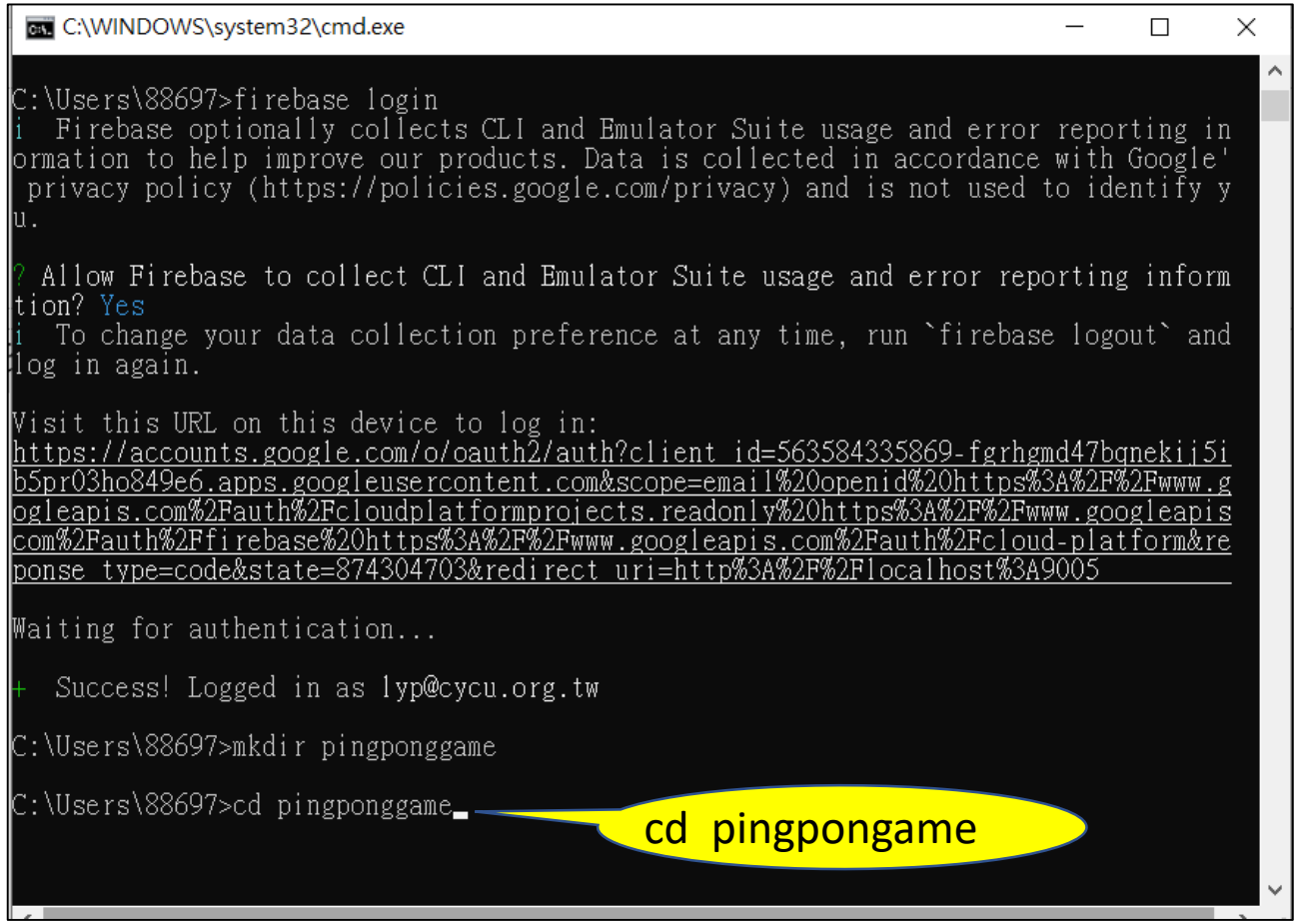

Woohoo!
Firebase CLI Login Successful
You are logged in to the Firebase Command-Line interface. You can immediately close this window and continue using the CLI.


C:\WINDOWS\system32\cmd.exe
C:\Users\88697>firebase login
i Firebase optionally collects CLI and Emulator Suite usage and error reporting information to help improve our products. Data is collected in accordance with Google's privacy policy (https://policies.google.com/privacy) and is not used to identify you.
? Allow Firebase to collect CLI and Emulator Suite usage and error reporting information? Yes
i To change your data collection preference at any time, run `firebase logout` and log in again.
Visit this URL on this device to log in:
https://accounts.google.com/o/oauth2/auth?client_id=563584335869-fgrhgmd47bqnekij5ib5pr03ho849e6.apps.googleusercontent.com&scope=email%20openid%20https%3A%2F%2Fwww.googleapis.com%2Fauth%2Fcloudplatformprojects.readonly%20https%3A%2F%2Fwww.googleapis.com%2Fauth%2Ffirebase%20https%3A%2F%2Fwww.googleapis.com%2Fauth%2Fcloud-platform&response_type=code&state=874304703&redirect_uri=http%3A%2F%2Flocalhost%3A9005
Waiting for authentication...
+ Success! Logged in as lyp@cycu.org.tw
C:\Users\88697>
Success

mkdir pingpongame

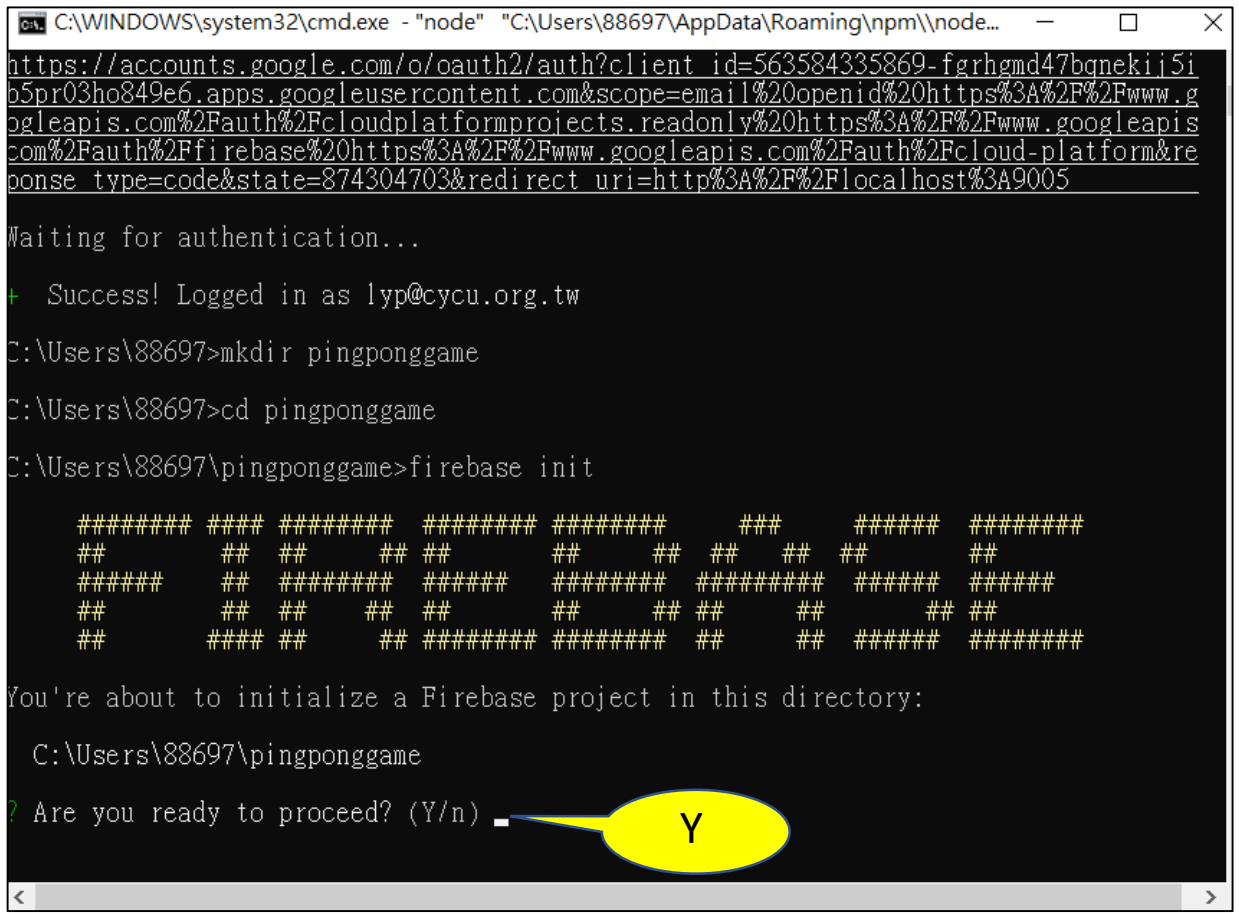


cd pingpongame

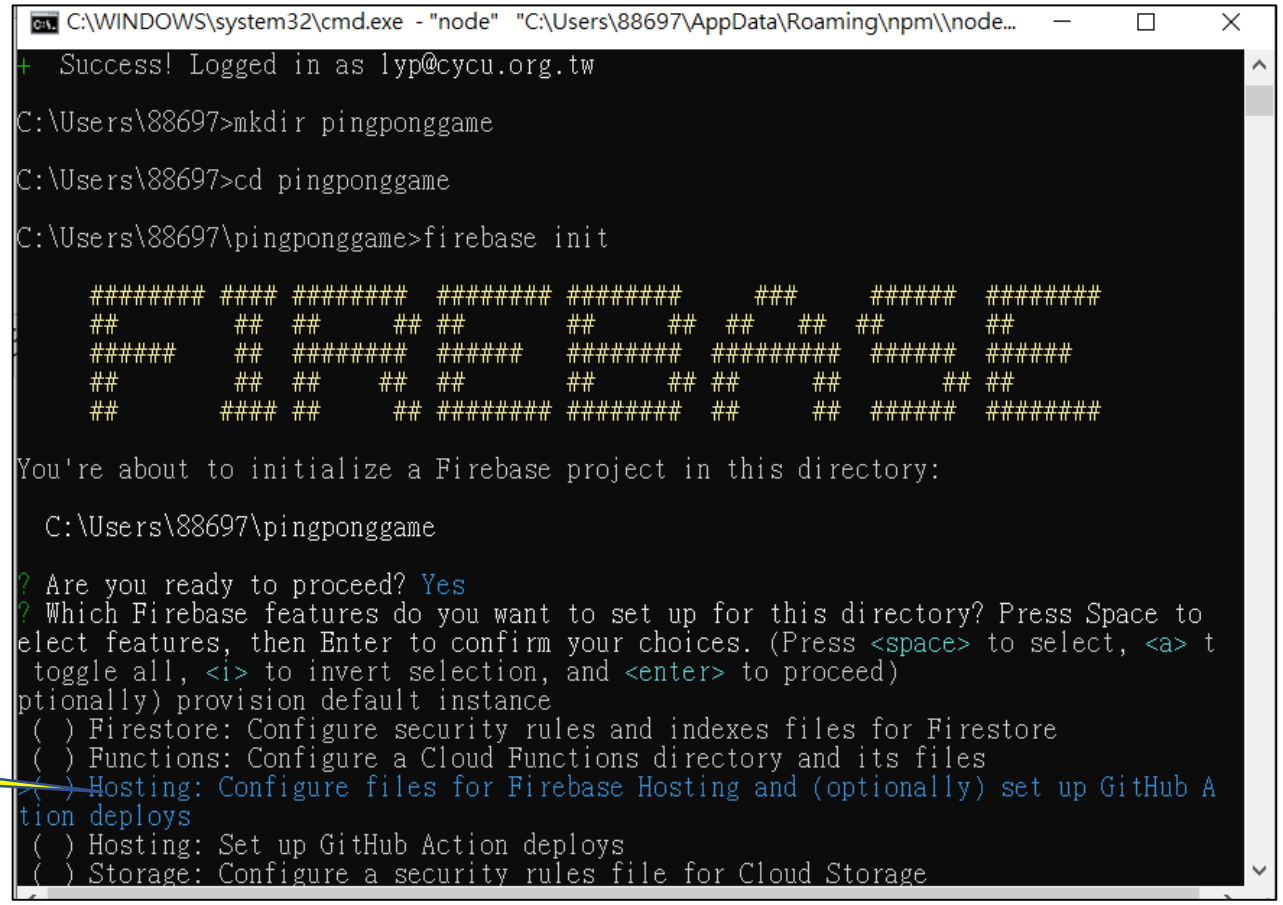


firebase init

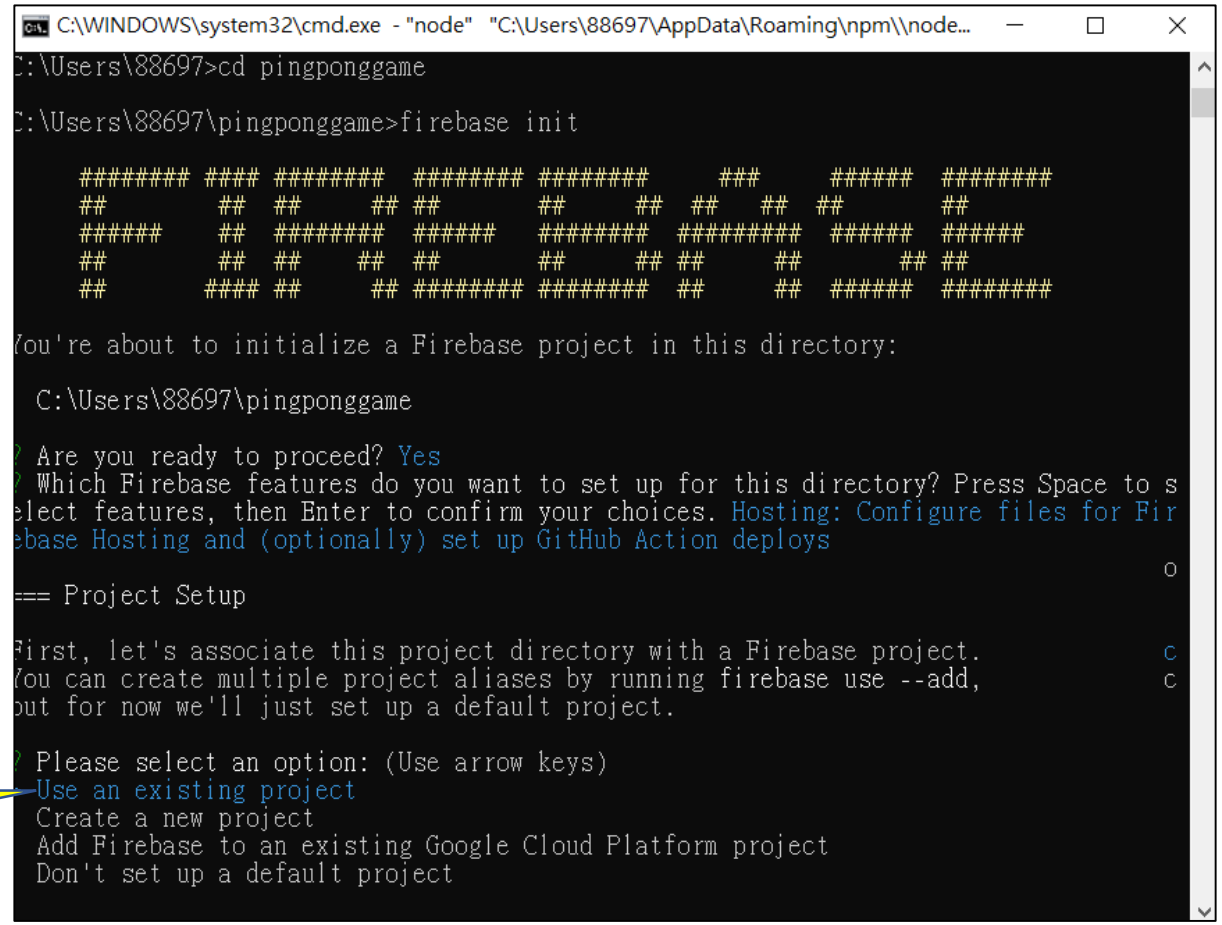
Y


C:\WINDOWS\system32\cmd.exe - "node" "C:\Users\88697\AppData\Roaming\npm\\node...
https://accounts.google.com/o/oauth2/auth?client_id=563584335869-fgrhgmd47bqnekij5i
b5pr03ho849e6.apps.googleusercontent.com&scope=email%20openid%20https%3A%2F%2Fwww.g
oogleapis.com%2Fauth%2Fcloudplatformprojects.readonly%20https%3A%2F%2Fwww.googleapis
com%2Fauth%2Ffirebase%20https%3A%2F%2Fwww.googleapis.com%2Fauth%2Fcloud-platform&re
sponse_type=code&state=874304703&redirect_uri=http%3A%2F%2Flocalhost%3A9005
Waiting for authentication...
+ Success! Logged in as lyp@cycu.org.tw
C:\Users\88697>mkdir pingponggame
C:\Users\88697>cd pingponggame
C:\Users\88697\pingponggame>firebase init
You're about to initialize a Firebase project in this directory:
C:\Users\88697\pingponggame
? Are you ready to proceed? (Y/n)
Y

Hosting

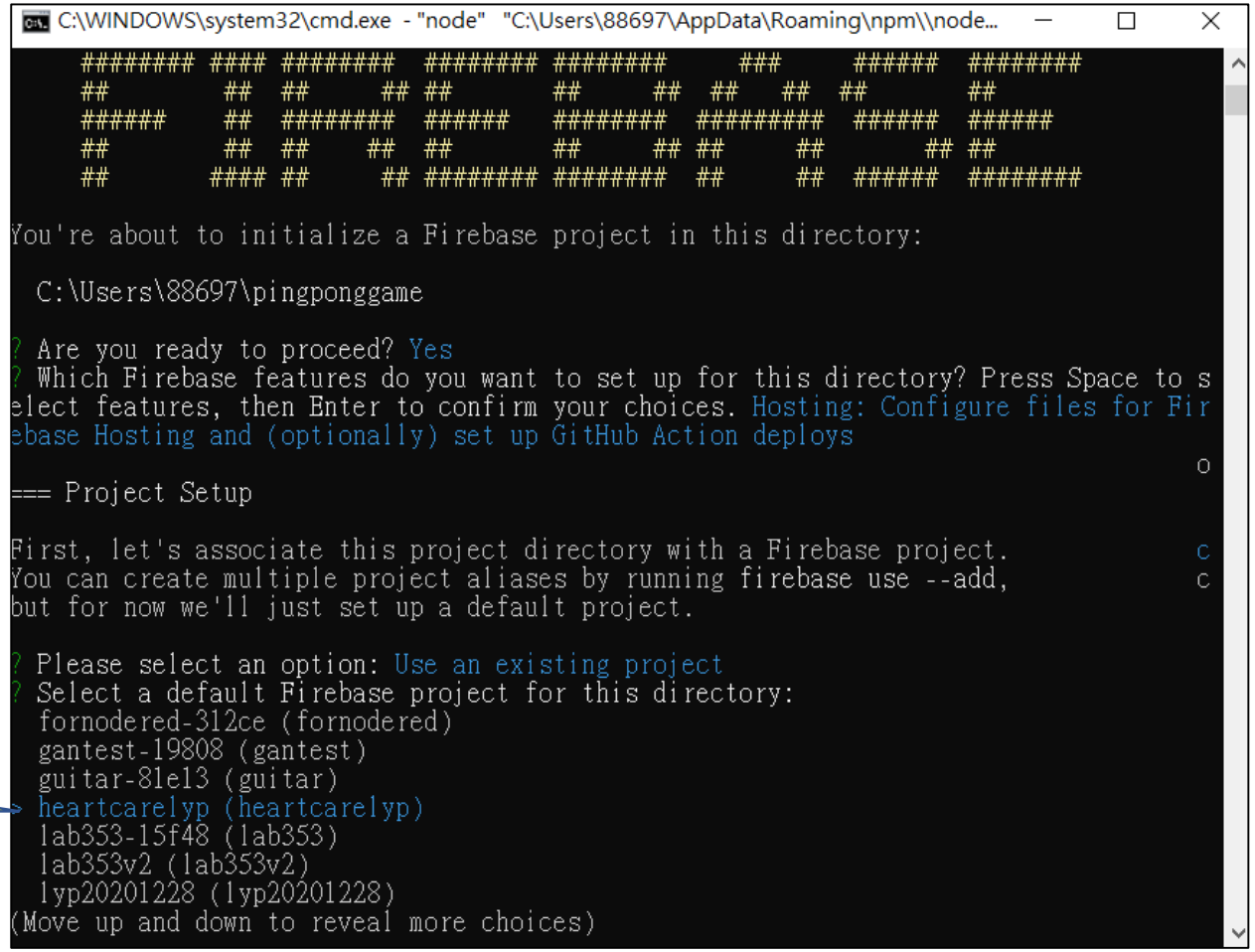

C:\WINDOWS\system32\cmd.exe - "node" "C:\Users\88697\AppData\Roaming\npm\\node...
+ Success! Logged in as lyp@cycu.org.tw
C:\Users\88697>mkdir pingponggame
C:\Users\88697>cd pingponggame
C:\Users\88697\pingponggame>firebase init
You're about to initialize a Firebase project in this directory:
C:\Users\88697\pingponggame
? Are you ready to proceed? Yes
? Which Firebase features do you want to set up for this directory? Press Space to
elect features, then Enter to confirm your choices. (Press <space> to select, <a> t
toggle all, <i> to invert selection, and <enter> to proceed)
ptionally) provision default instance
( ) Firestore: Configure security rules and indexes files for Firestore
( ) Functions: Configure a Cloud Functions directory and its files
( ) Hosting: Configure files for Firebase Hosting and (optionally) set up GitHub A
tion deploys
( ) Hosting: Set up GitHub Action deploys
( ) Storage: Configure a security rules file for Cloud Storage
Space Key

Use an existing project



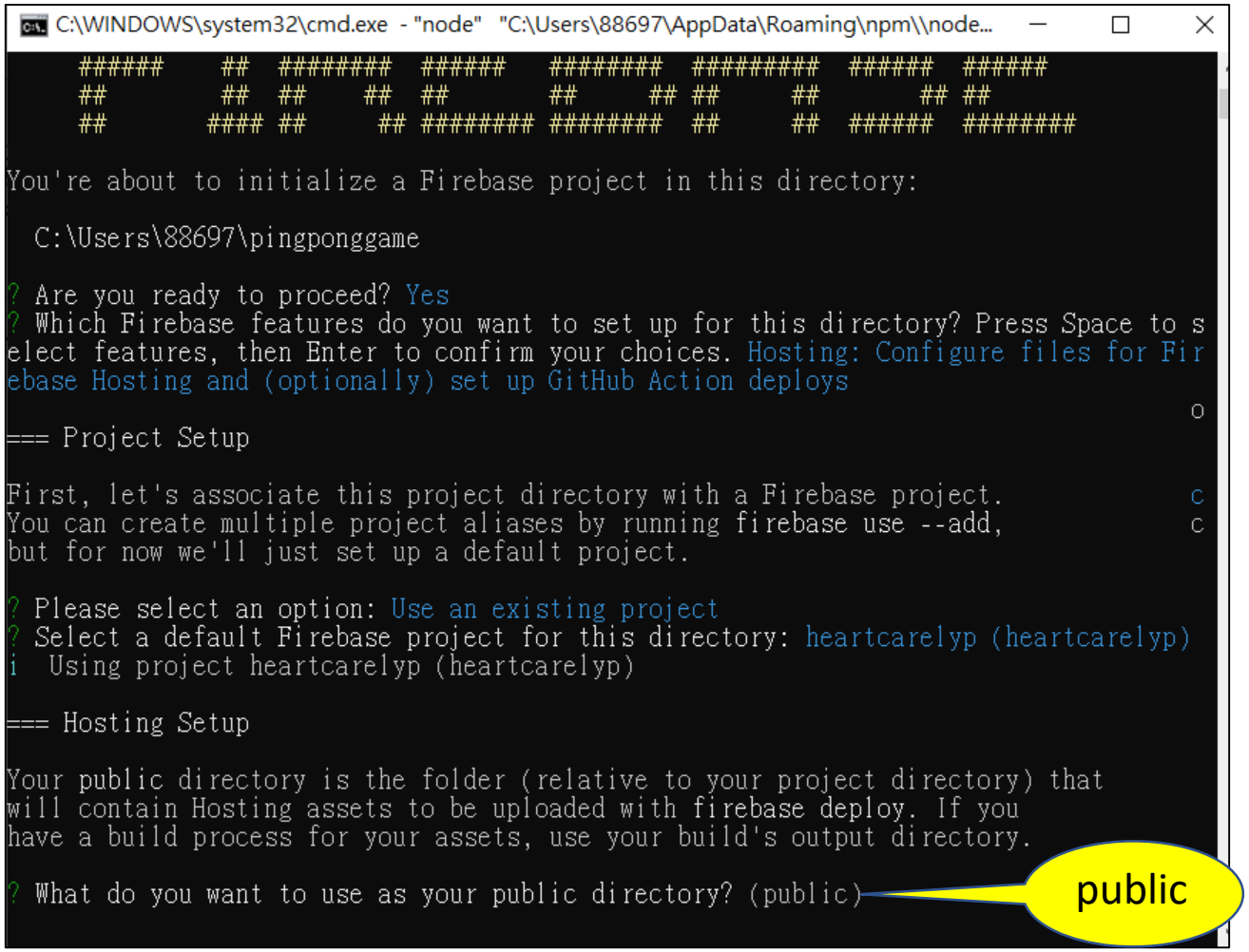
Use an existing project

Chose a project

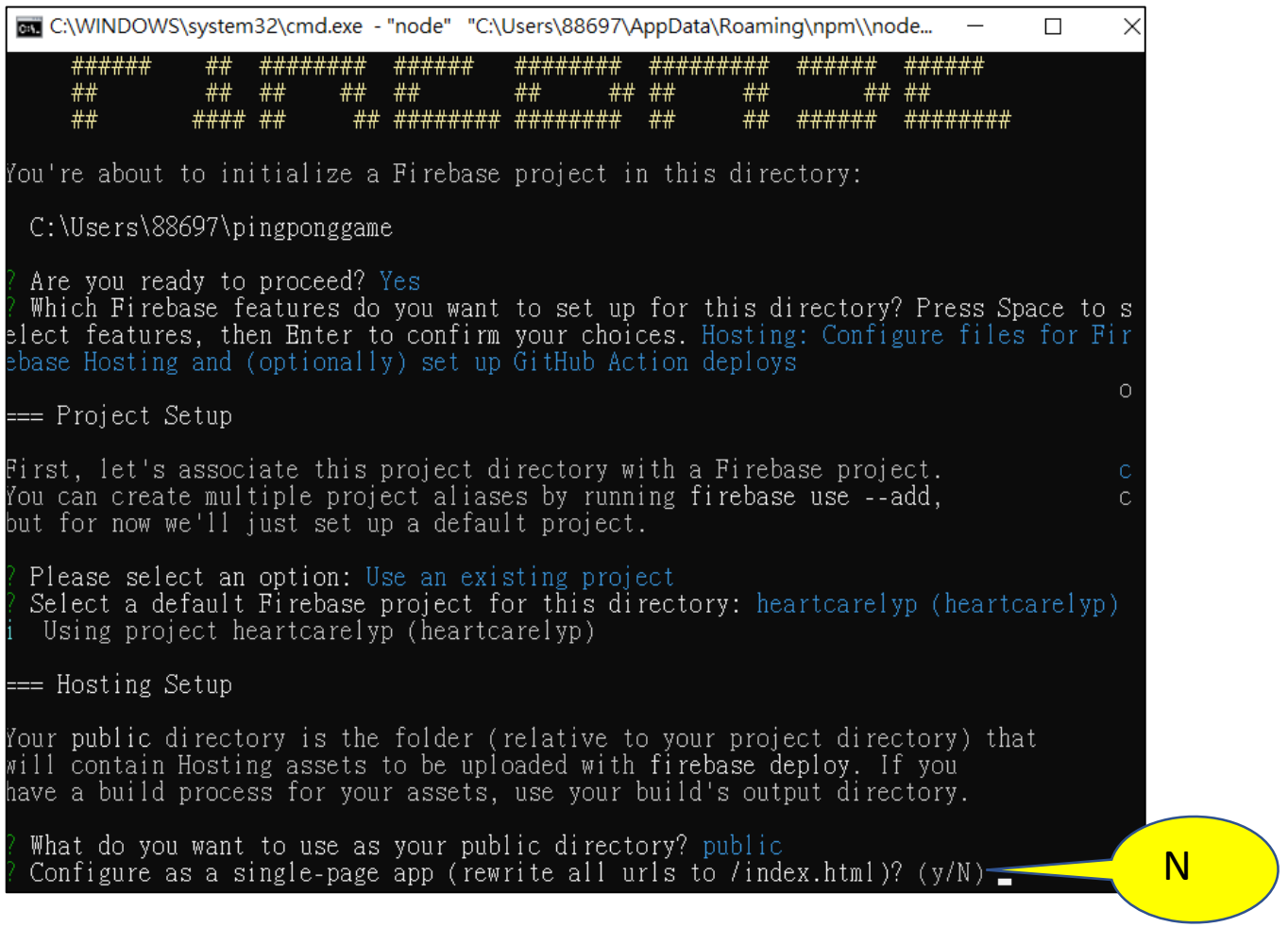


Chose a project

public


C:\WINDOWS\system32\cmd.exe - "node" "C:\Users\88697\AppData\Roaming\npm\\node...
You're about to initialize a Firebase project in this directory:
C:\Users\88697\pingponggame
? Are you ready to proceed? Yes
? Which Firebase features do you want to set up for this directory? Press Space to s
elect features, then Enter to confirm your choices. Hosting: Configure files for Fir
ebase Hosting and (optionally) set up GitHub Action deploys
=== Project Setup
First, let's associate this project directory with a Firebase project.
You can create multiple project aliases by running firebase use --add,
but for now we'll just set up a default project.
? Please select an option: Use an existing project
? Select a default Firebase project for this directory: heartcarelyp (heartcarelyp)
i Using project heartcarelyp (heartcarelyp)
=== Hosting Setup
Your public directory is the folder (relative to your project directory) that
will contain Hosting assets to be uploaded with firebase deploy. If you
have a build process for your assets, use your build's output directory.
? What do you want to use as your public directory? (public)
public

N


C:\WINDOWS\system32\cmd.exe - "node" "C:\Users\88697\AppData\Roaming\npm\\node...
You're about to initialize a Firebase project in this directory:
C:\Users\88697\pingponggame
? Are you ready to proceed? Yes
? Which Firebase features do you want to set up for this directory? Press Space to s
elect features, then Enter to confirm your choices. Hosting: Configure files for Fir
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=== Project Setup
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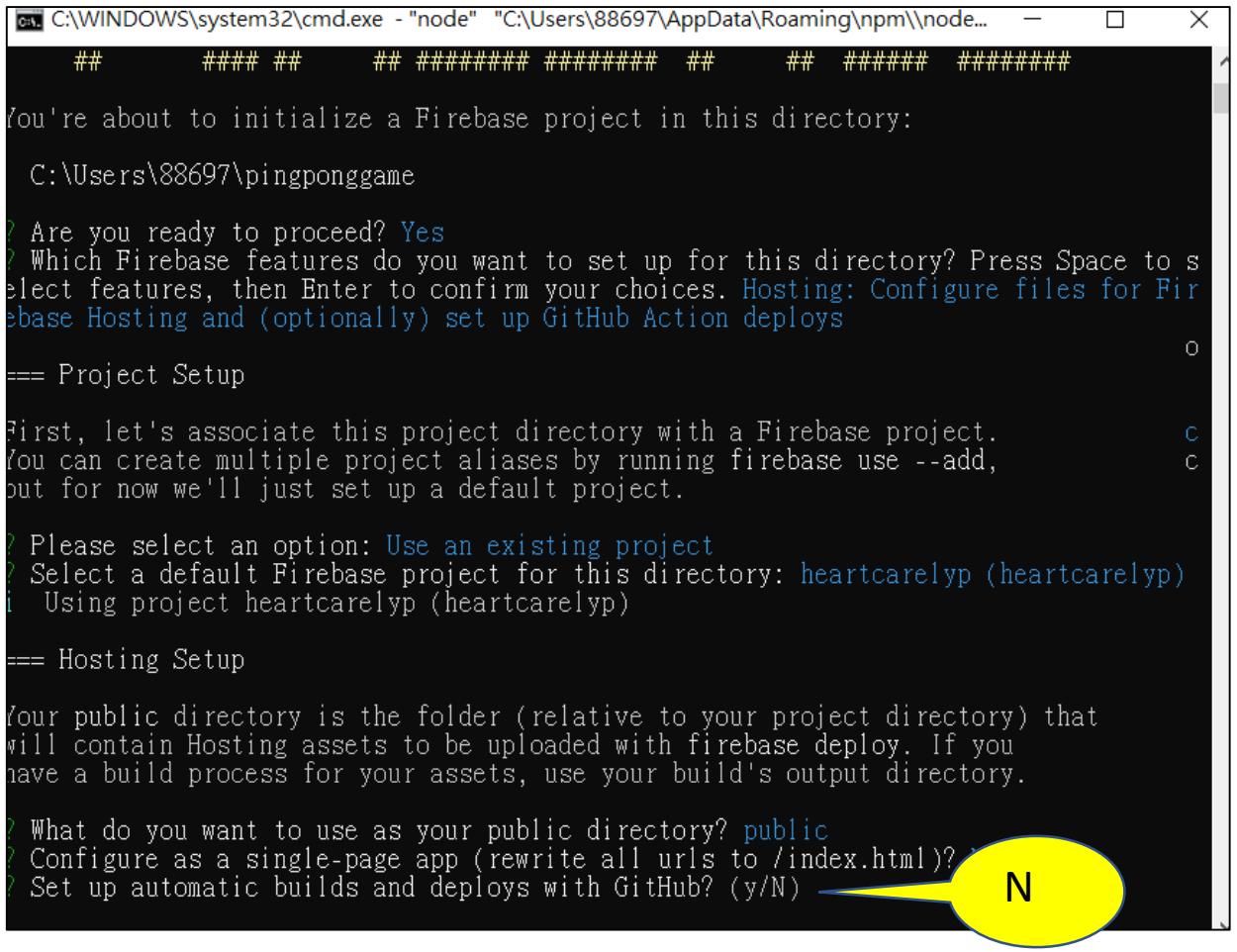
You can create multiple project aliases by running firebase use --add,
but for now we'll just set up a default project.
? Please select an option: Use an existing project
? Select a default Firebase project for this directory: heartcarelyp (heartcarelyp)
i Using project heartcarelyp (heartcarelyp)
=== Hosting Setup
Your public directory is the folder (relative to your project directory) that
will contain Hosting assets to be uploaded with firebase deploy. If you
have a build process for your assets, use your build's output directory.
? What do you want to use as your public directory? public
? Configure as a single-page app (rewrite all urls to /index.html)? (y/N)
N

N


C:\WINDOWS\system32\cmd.exe - "node" "C:\Users\88697\AppData\Roaming\npm\\node...
########
You're about to initialize a Firebase project in this directory:
C:\Users\88697\pingponggame
? Are you ready to proceed? Yes
? Which Firebase features do you want to set up for this directory? Press Space to s
elect features, then Enter to confirm your choices. Hosting: Configure files for Fir
ebase Hosting and (optionally) set up GitHub Action deploys
=== Project Setup
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? Select a default Firebase project for this directory: heartcarelyp (heartcarelyp)
i Using project heartcarelyp (heartcarelyp)
=== Hosting Setup
Your public directory is the folder (relative to your project directory) that
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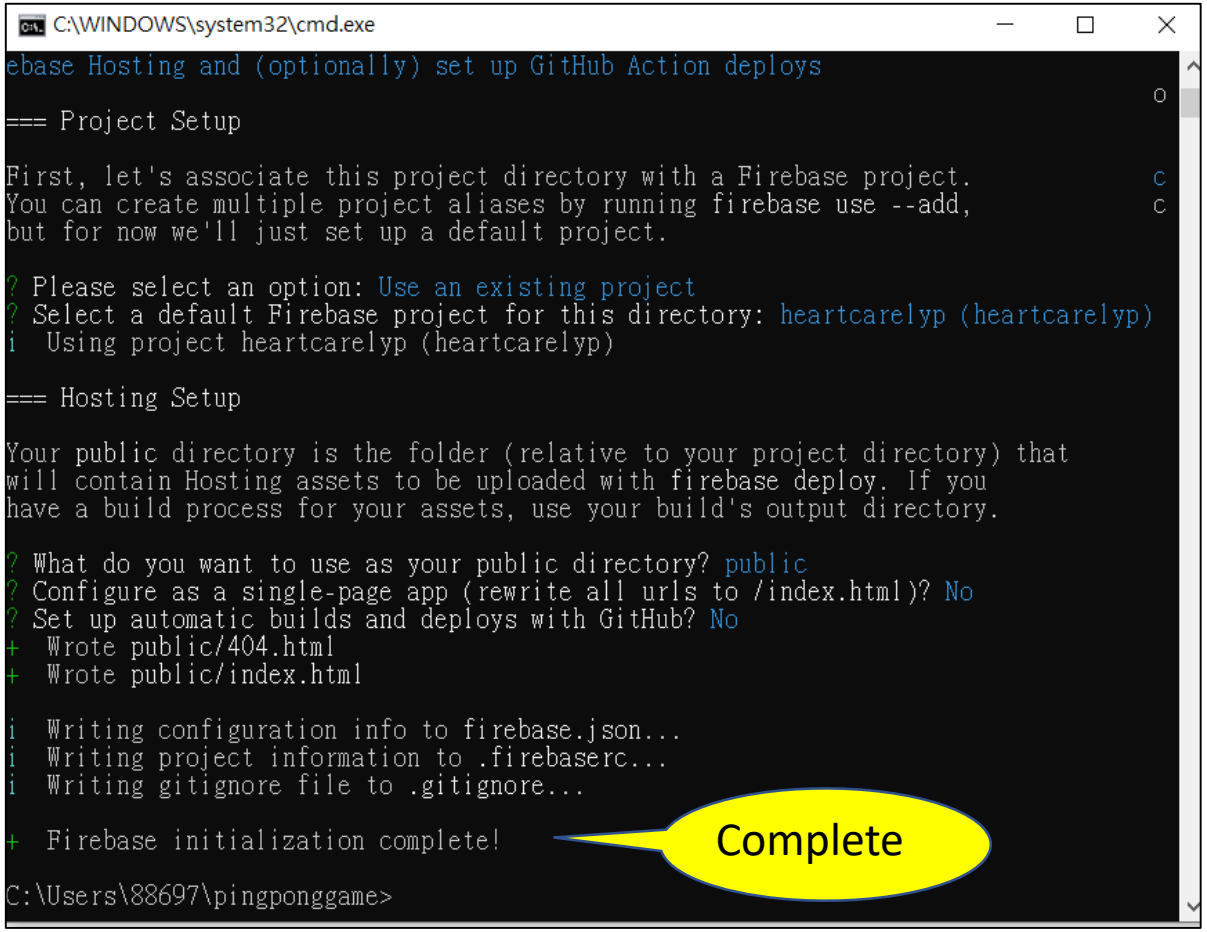
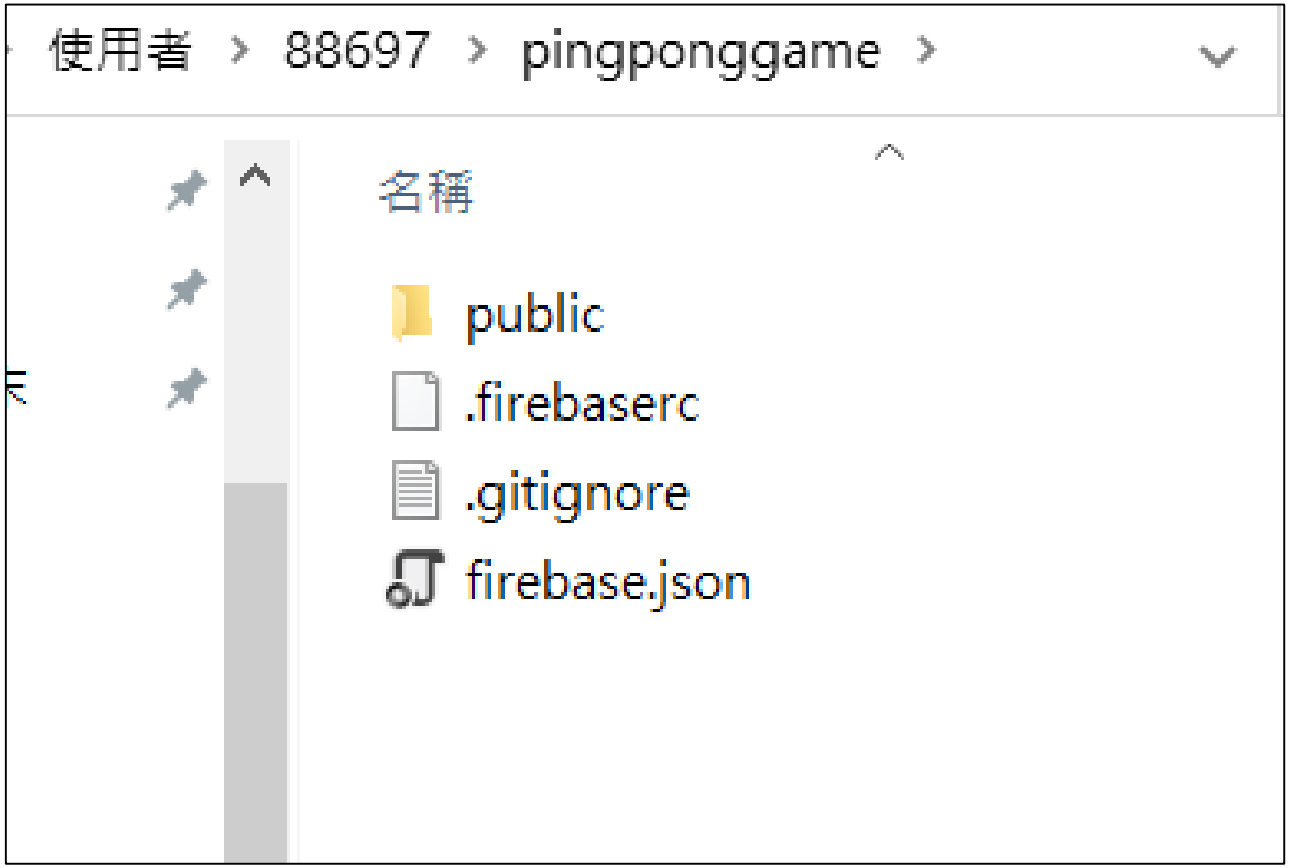
have a build process for your assets, use your build's output directory.
? What do you want to use as your public directory? public
? Configure as a single-page app (rewrite all urls to /index.html)?
? Set up automatic builds and deploys with GitHub? (y/N)
N

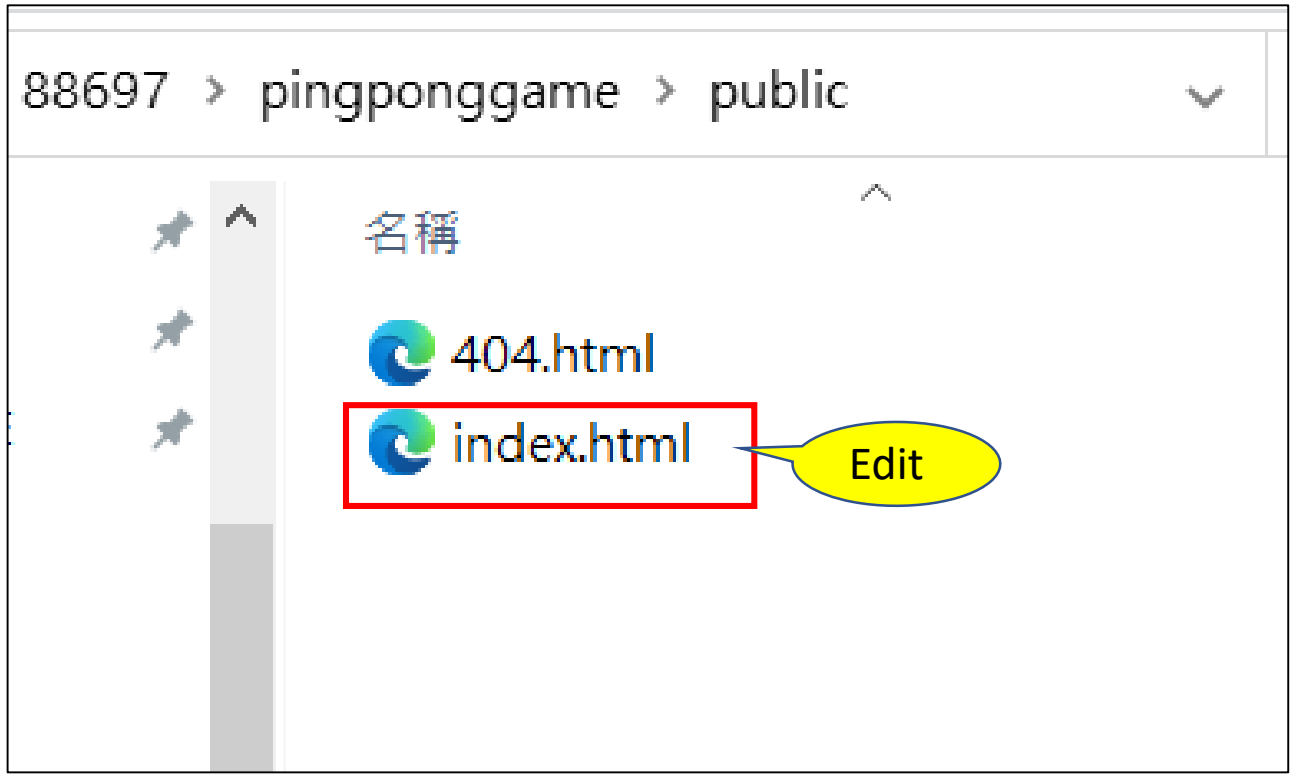
Complete


C:\WINDOWS\system32\cmd.exe
ebase Hosting and (optionally) set up GitHub Action deploys
=== Project Setup
First, let's associate this project directory with a Firebase project.
You can create multiple project aliases by running firebase use --add,
but for now we'll just set up a default project.
? Please select an option: Use an existing project
? Select a default Firebase project for this directory: heartcarelyp (heartcarelyp)
i Using project heartcarelyp (heartcarelyp)
=== Hosting Setup
Your public directory is the folder (relative to your project directory) that
will contain Hosting assets to be uploaded with firebase deploy. If you
have a build process for your assets, use your build's output directory.
? What do you want to use as your public directory? public
? Configure as a single-page app (rewrite all urls to /index.html)? No
? Set up automatic builds and deploys with GitHub? No
+ Wrote public/404.html
+ Wrote public/index.html
i Writing configuration info to firebase.json...
i Writing project information to .firebaserc...
i Writing gitignore file to .gitignore...
+ Firebase initialization complete!
C:\Users\88697\pingponggame>
Complete

pingponggame/



pingponggame/public

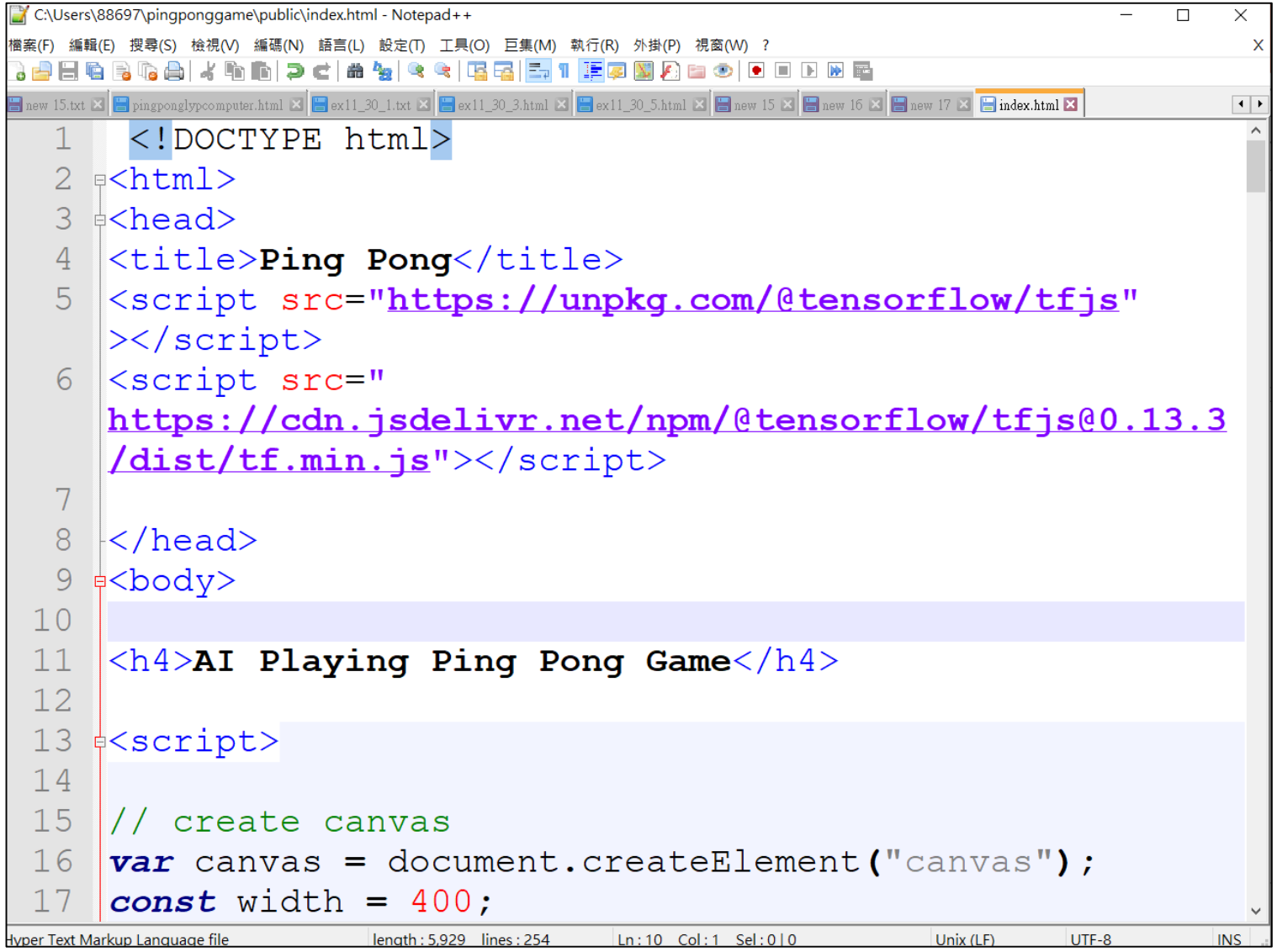


Copy the content of ex12_07_1.txt

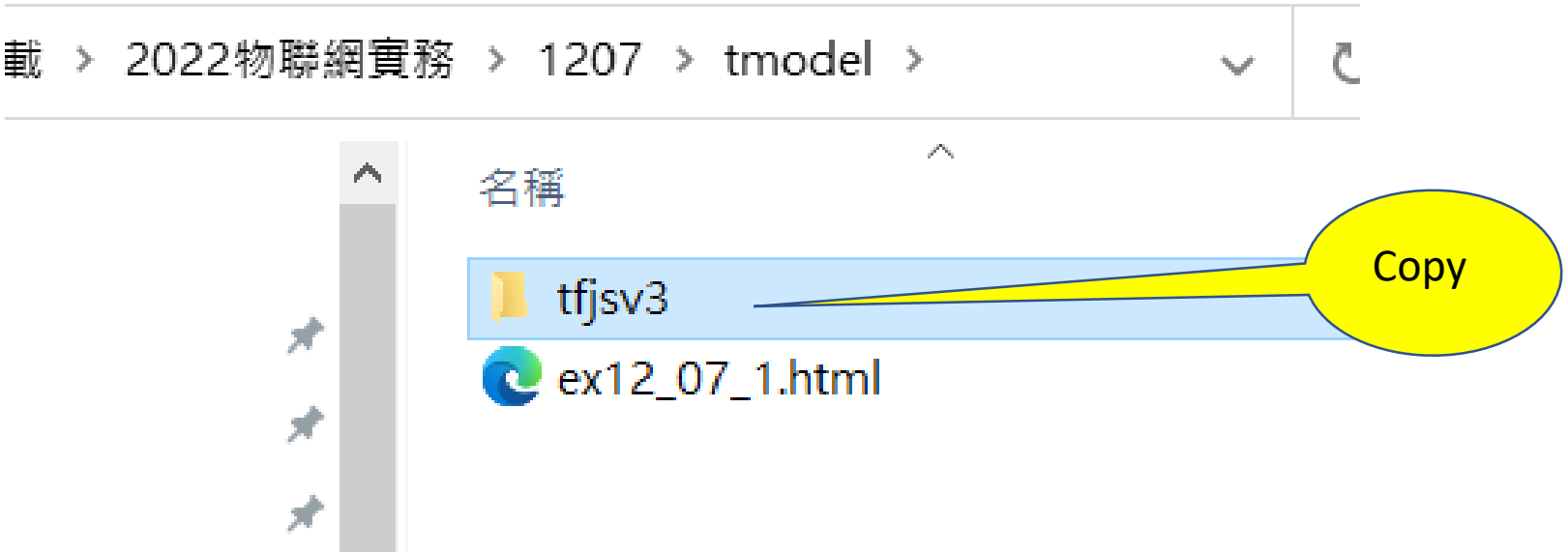
```
<!DOCTYPE html>
<html>
<head>
<title>Ping Pong</title>
<script src="https://unpkg.com/@tensorflow/tfjs"
></script>
<script src="
https://cdn.jsdelivr.net/npm/@tensorflow/tfjs@0.13.3
/dist/tf.min.js"></script>

</head>
<body>

<h4>AI Playing Ping Pong Game</h4>

<script>

// create canvas
var canvas = document.createElement("canvas");
const width = 400;
```

Select All , Paste

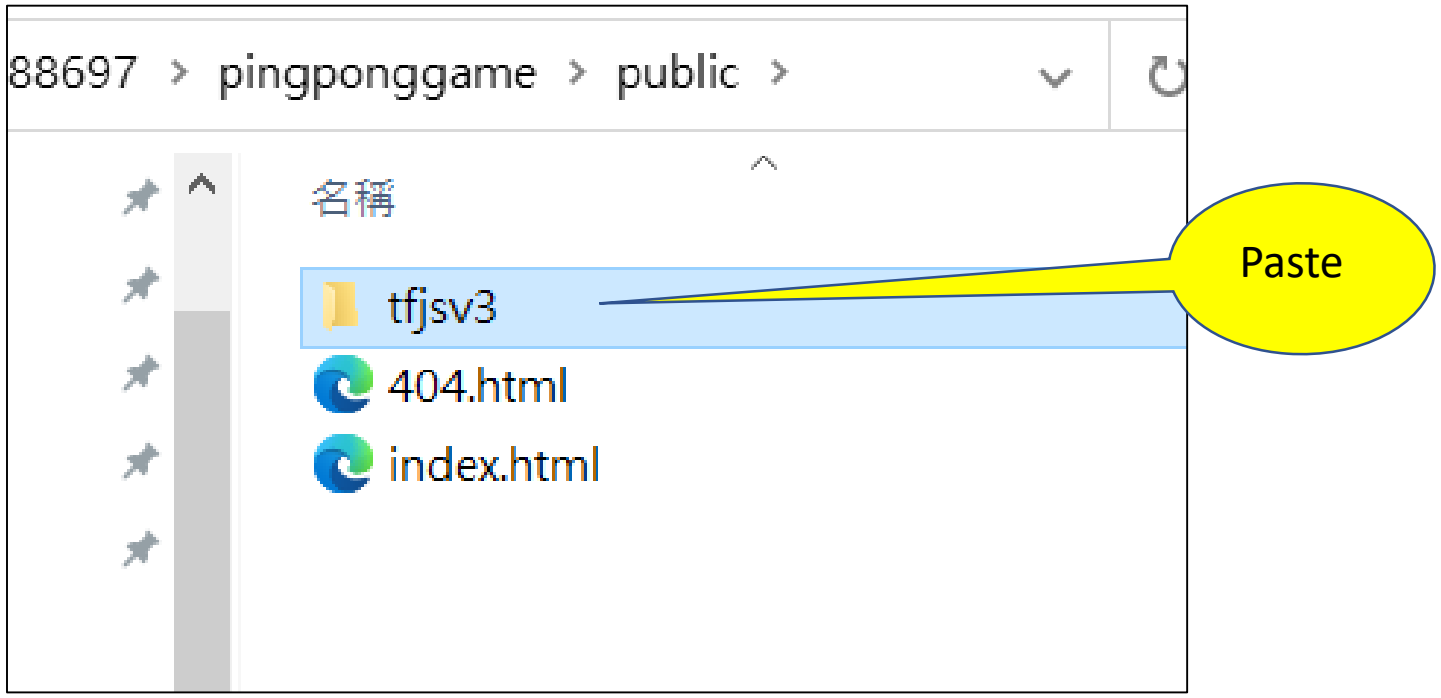
Save


C:\Users\88697\pingponggame\public\index.html - Notepad++
檔案(F) 編輯(E) 搜尋(S) 檢視(V) 編碼(N) 語言(L) 設定(T) 工具(O) 巨集(M) 執行(R) 外掛(P) 視窗(W) ?
new 15.txt
pingponglypcomputer.html
ex11_30_1.txt
ex11_30_3.html
ex11_30_5.html
new 15
new 16
new 17
index.html
1 <!DOCTYPE html>
2 <html>
3 <head>
4 <title>Ping Pong</title>
5 <script src="https://unpkg.com/@tensorflow/tfjs"
></script>
6 <script src="
https://cdn.jsdelivr.net/npm/@tensorflow/tfjs@0.13.3
/dist/tf.min.js"></script>
7
8 </head>
9 <body>
10
11 <h4>AI Playing Ping Pong Game</h4>
12
13 <script>
14
15 // create canvas
16 var canvas = document.createElement("canvas");
17 const width = 400;
Hyper Text Markup Language file
length : 5,929 lines : 254
Ln : 10 Col : 1 Sel : 0 | 0
Unix (LF)
UTF-8
INS

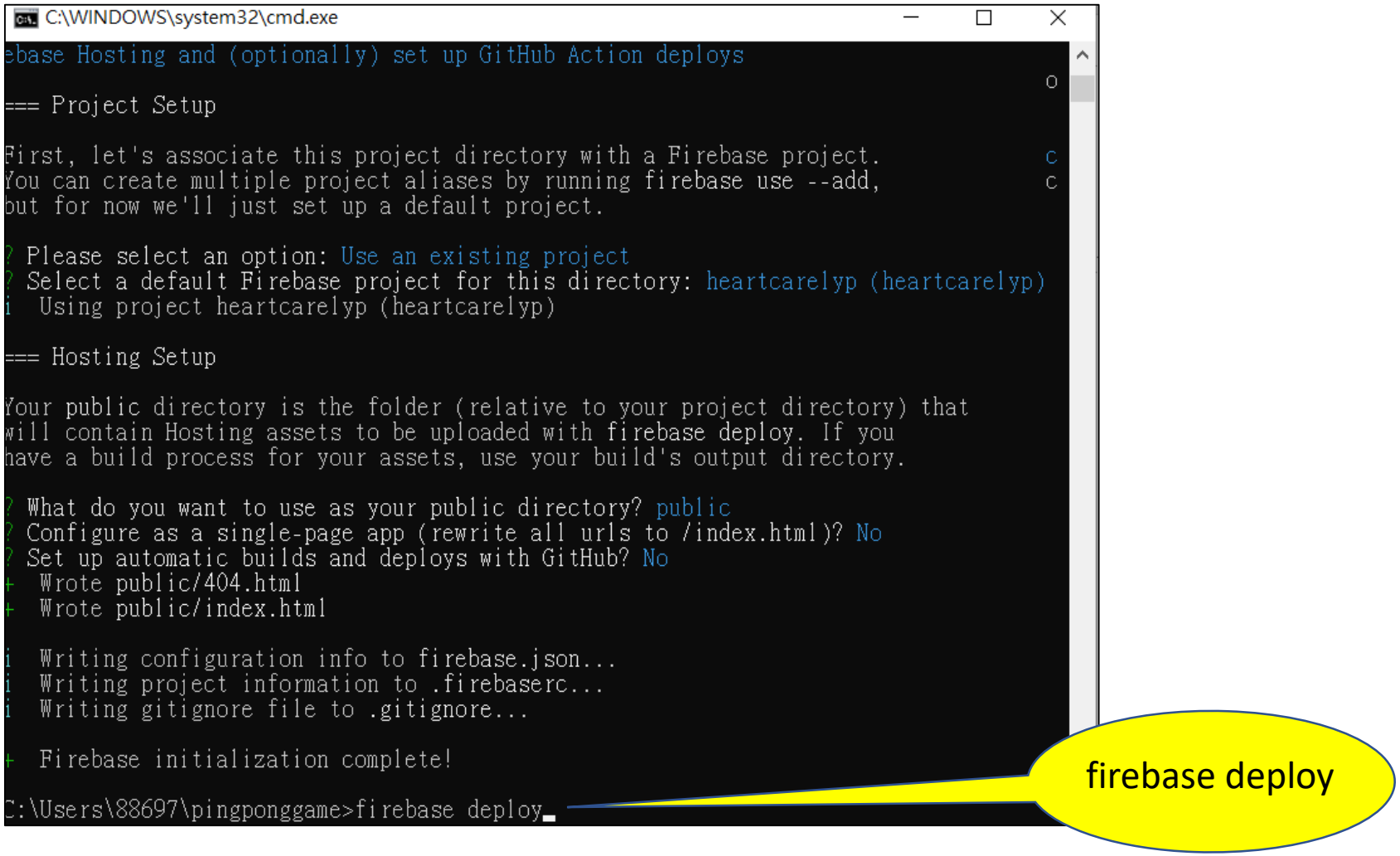
Copy tfjsv3



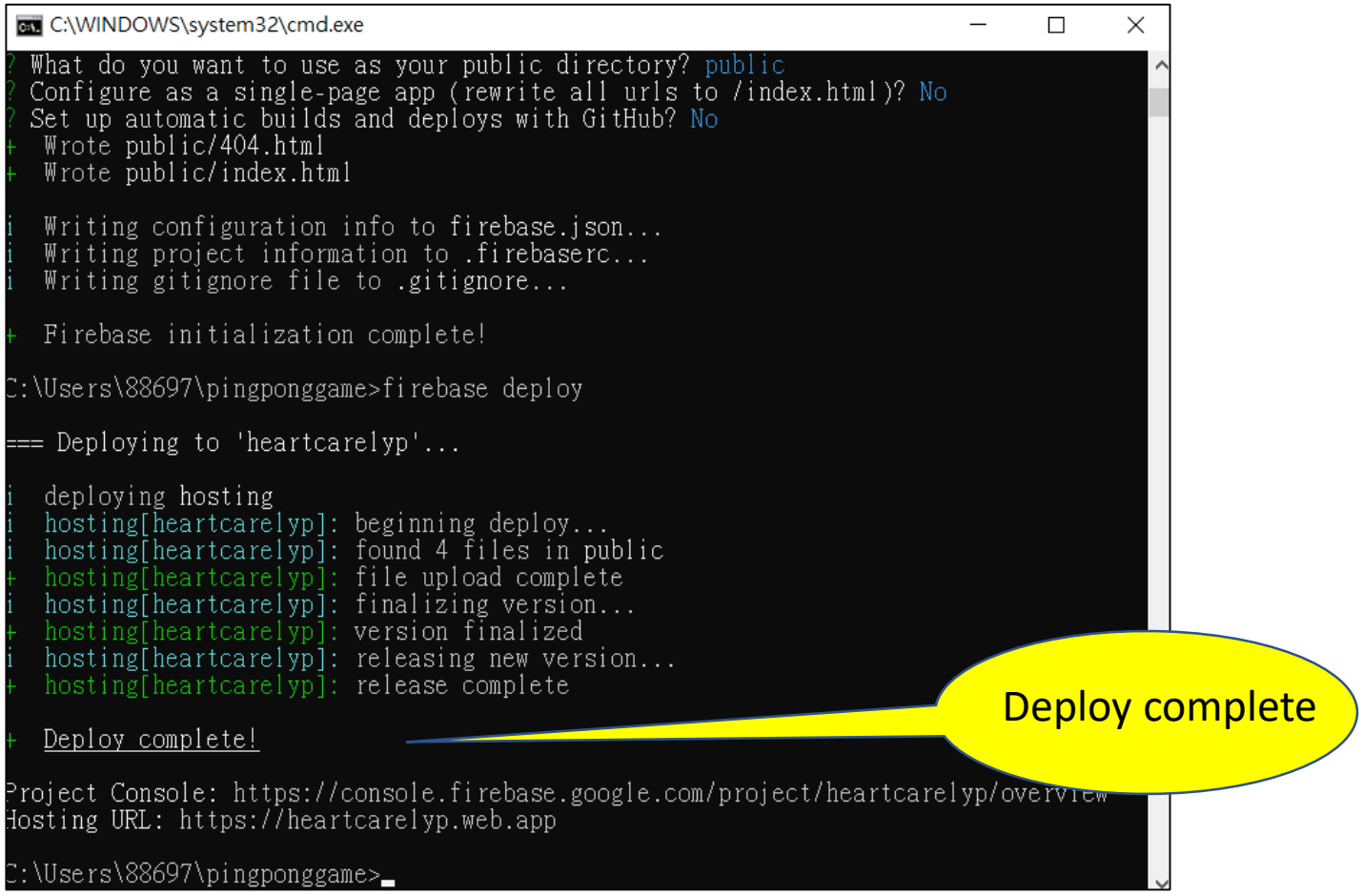
Paste


88697 › pingponggame › public ›
名稱
tfjsv3
404.html
index.html
Paste

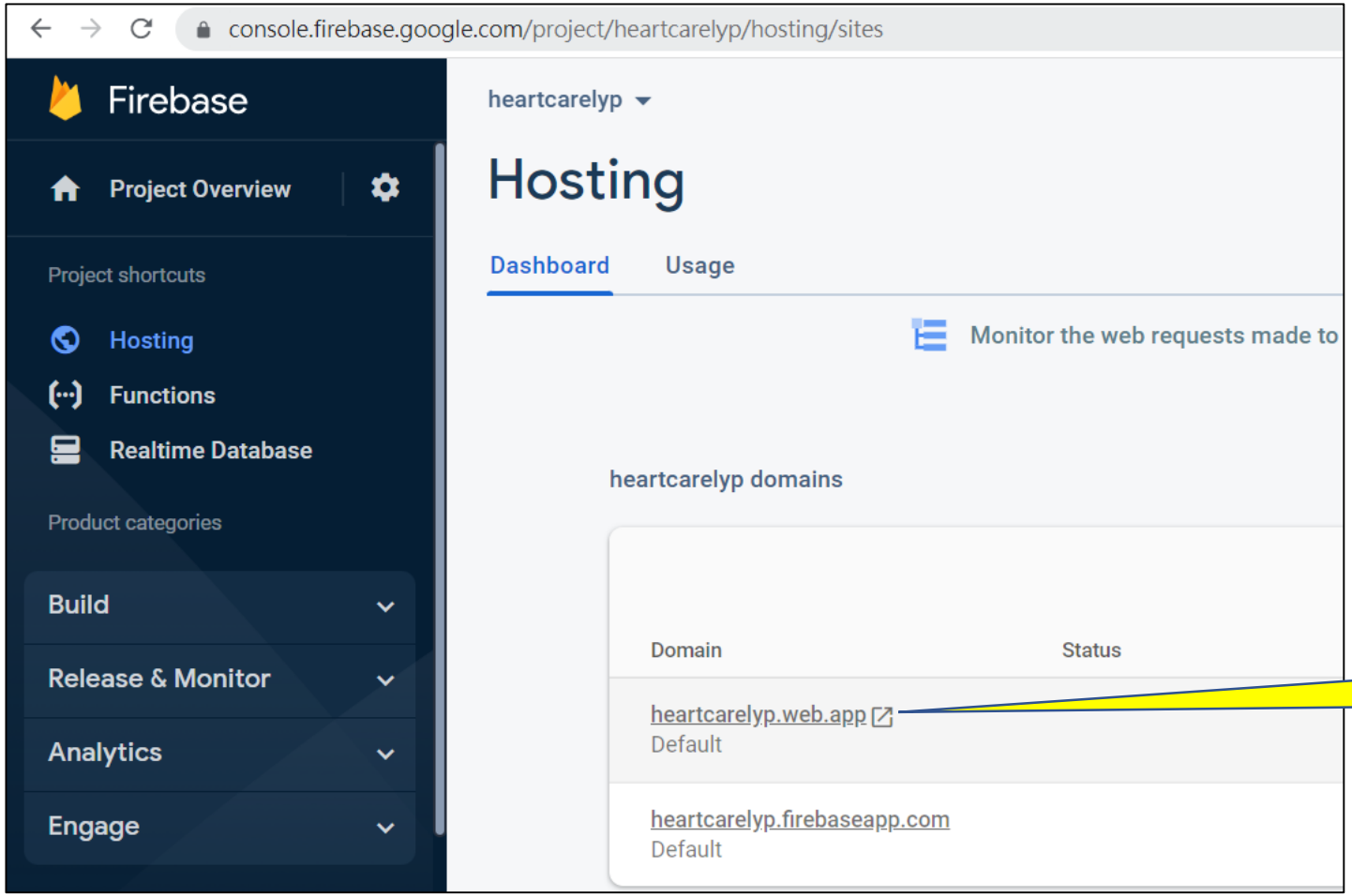
firebase deploy

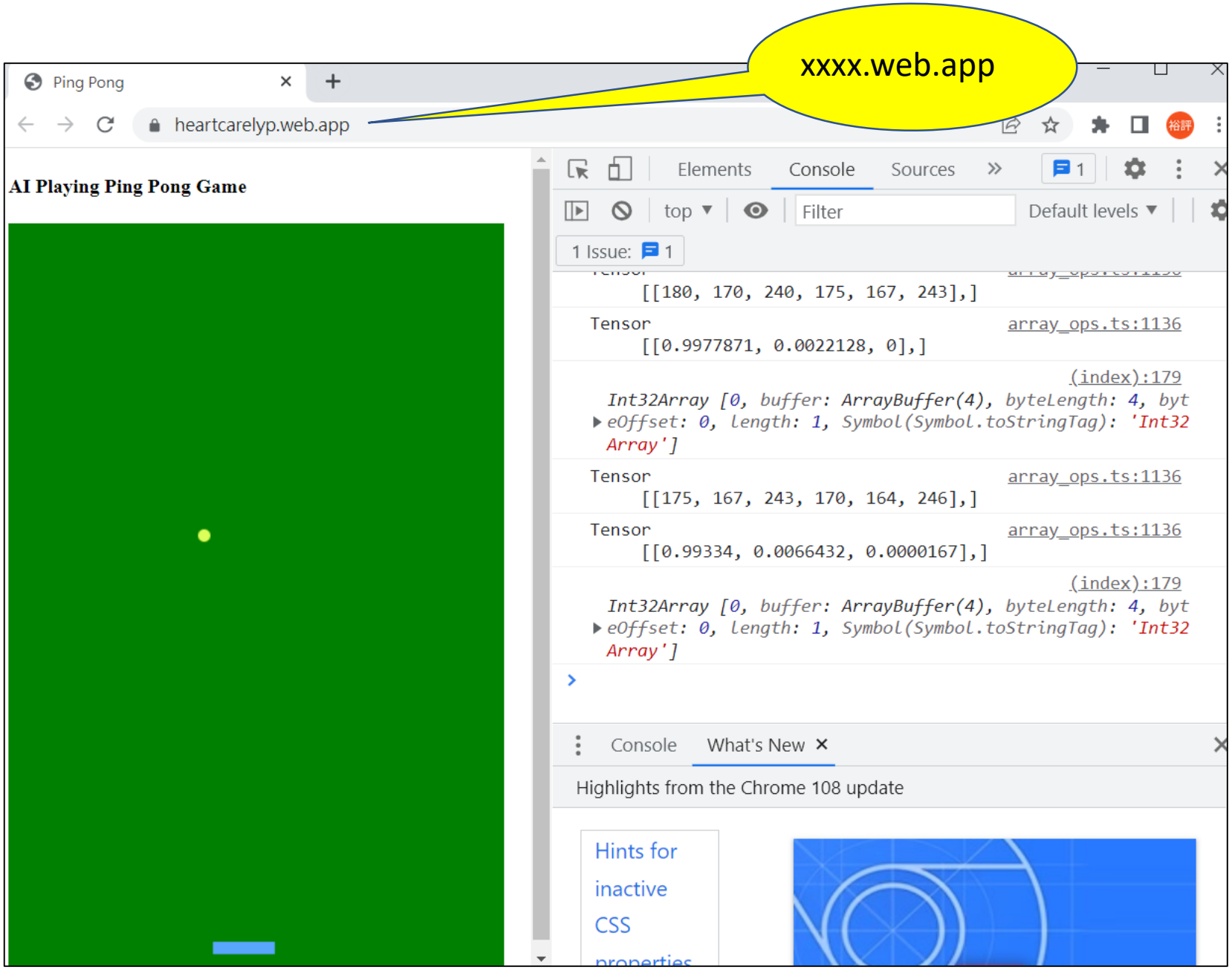


Deploy complete



Go to web app


console.firebase.google.com/project/heartcarelyp/hosting/sites
Firebase
Project Overview
Project shortcuts
Hosting
Functions
Realtime Database
Product categories
Build
Release & Monitor
Analytics
Engage
heartcarelyp
Hosting
Dashboard
Usage
Monitor the web requests made to
heartcarelyp domains
Domain
Status
heartcarelyp.web.app
Default
heartcarelyp.firebaseapp.com
Default
xxxx.web.app


xxxx.web.app
Ping Pong
heartcarelyp.web.app
AI Playing Ping Pong Game
Elements
Console
Sources
1
top
Filter
Default levels
1 Issue: 1
[[180, 170, 240, 175, 167, 243],]
Tensor
array_ops.ts:1136
[[0.9977871, 0.0022128, 0],]
(index):179
Int32Array [0, buffer: ArrayBuffer(4), byteLength: 4, byteOffset: 0, length: 1, Symbol(Symbol.toStringTag): 'Int32Array']
Tensor
array_ops.ts:1136
[[175, 167, 243, 170, 164, 246],]
Tensor
array_ops.ts:1136
[[0.99334, 0.0066432, 0.0000167],]
(index):179
Int32Array [0, buffer: ArrayBuffer(4), byteLength: 4, byteOffset: 0, length: 1, Symbol(Symbol.toStringTag): 'Int32Array']
Console
What's New
Highlights from the Chrome 108 update
Hints for inactive CSS properties

OpenSSL

演算法 [編輯]

OpenSSL支援許多不同的加密演算法：

加密

AES、Blowfish、Camellia、Chacha20、Poly1305、SEED、CAST-128、DES、IDEA、RC2、RC4、RC5、TDES、GOST 28147-89[15]、SM4

密碼雜湊函式

MD5、MD4、MD2、SHA-1、SHA-2、SHA-3、RIPEMD-160、MDC-2、GOST R 34.11-94[15]、BLAKE2、Whirlpool[16]、SM3

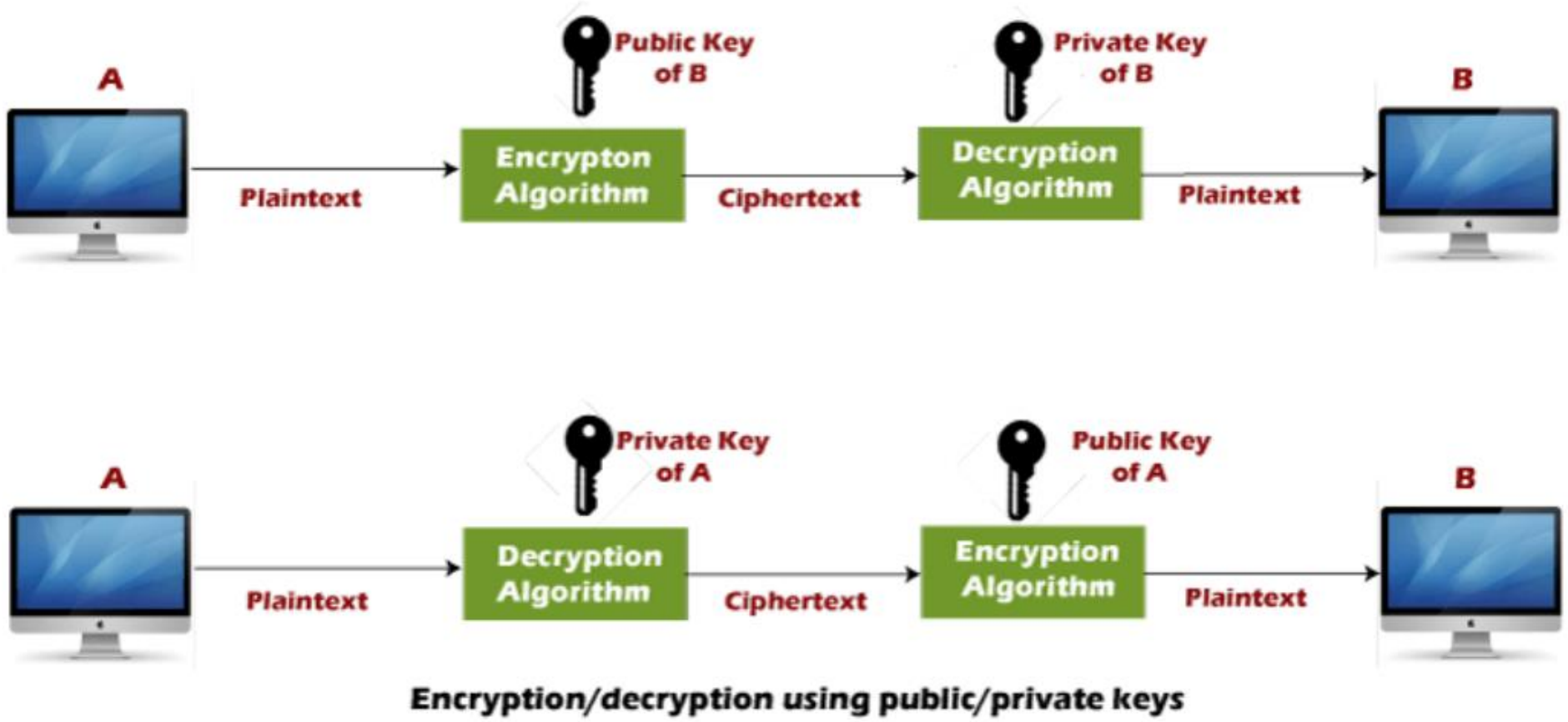
公開金鑰加密

RSA、DSA、ECDSA、ECDHE、迪菲-赫爾曼密鑰交換、橢圓曲線密碼學、X25519、Ed25519、X448、Ed448、GOST R 34.10-2001[15]、SM2

（從1.0版開始，橢圓曲線迪菲-赫爾曼金鑰交換用於支援前向安全性）[17])

https://zh.wikipedia.org/zh-tw/OpenSSL

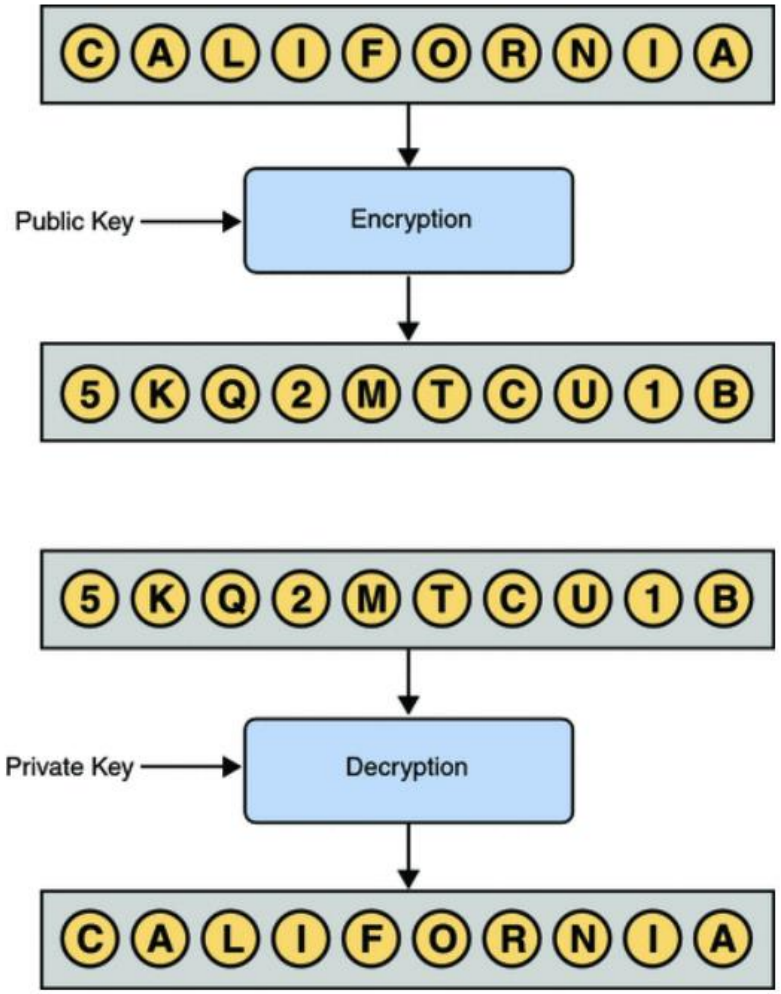
Encryption/decryption using public/private keys



Encryption/decryption using public/private keys

https://www.javatpoint.com/rsa-encryption-algorithm

public-key cryptography



What is RSA encryption and how does it work?

https://www.comparitech.com/blog/information-security/rsa-encryption/

RSA Cryptosystem

$n = p \times q$
$t = (p-1)(q-1)$
p, q為質數

公鑰 Public key

(n, e)

條件：$e \neq 0 \bmod t$

私鑰 Private key

(n, d)

條件：$ed = 1 \bmod t$

公鑰 (n, e)

m

$c = m^e \bmod n$

加密 encryption

c

私鑰 (n, d)

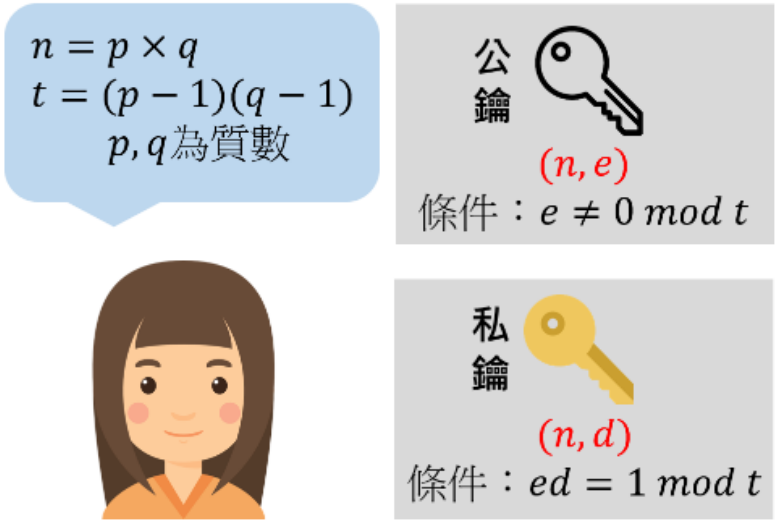
m

解密 decryption

$m = c^d \bmod n$

https://case.ntu.edu.tw/blog/?p=29107

RSA example



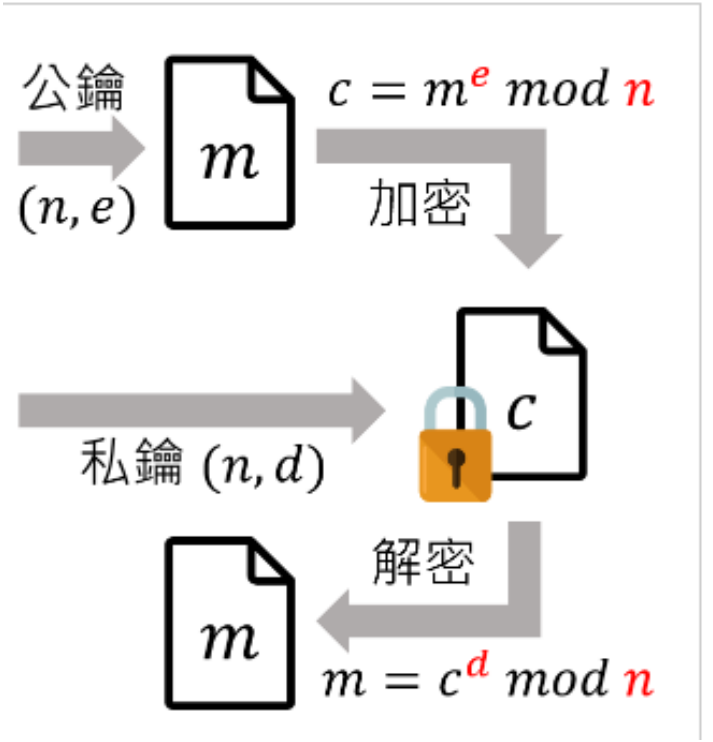
- 公鑰(Public key)： e, n
  私鑰(Private key)： d, n
  訊息(message)： m
  密文(cyphertext)： c

  taking p = 3、q = 11， thus n = 33。 t = (3-1)(11-1) = 20。
  constrain：
  ed ≡ 1 (mod 20)
  so： ed = 20k + 1，if k = 1，we can get e = 3、d = 7。

- Thus： Public key (3, 33)， Private key ： (7, 33)。

  While m = 17
  RSA Encryption： $(17)^3 \pmod{33} = 29$

  We can get the cyphertext c = 29
  RSA decryption ： $(29)^7 \pmod{33} = 17$



The RSA trapdoor permutation

G(): choose random primes p,q ≈1024 bits. Set **N=pq**.

choose integers **e , d** s.t. **e·d = 1 (mod φ(N))**

output pk = (N, e) , sk = (N, d)

F(pk, x): $\mathbb{Z}_N^* \rightarrow \mathbb{Z}_N^*$; **RSA(x) = x^e** (in Z_N)

$y = RSA(x) = x^e$

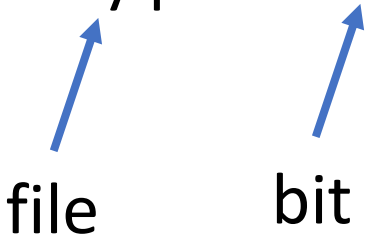
F^{-1}(sk, y) = y^d; y^d = **RSA(x)^d** = x^{ed} = $x^{k\varphi(N)+1}$ = $(x^{\varphi(N)})^k \cdot x$ = x

$ed = k \cdot \varphi(N) + 1$; $= 1$

Generate a RSA private key

- genrsa

  openssl genrsa -out key.pem 2048



"key.pem" file

```
-----BEGIN RSA PRIVATE KEY-----
MIIEpQIBAAKCAQEA3twsjJQ9UCk9M5WMsX4[illegible]hmBxccV4Ti4vu7hyfU1wQHiK3
Di4MCybn8DrZS3vM+vuqWiq9VMlIkKeY3f3i[illegible]h7yiIeYgqPz8DZFM//p3WriOev
S2oXc7yjzn2mfZ7iKrZXk626KCm/1l0ZlfFe6Nl2/3ooMu4eAcW5RZQGen5R4ShF
jNQpQfqUT95Ce+xK4Xf4Roc6C/I8EVBHX5LlBaURCvc+lX0jR9aaeAWVnMiXyUYF
V2ViQkoUwUGPRKs/AcX3t4x8Bo/NfKqPrdcaAJx5q1BNqAwLcKhHXtuCCPcIUMeC
fWoYadiTMFq+okuv+4Q4iePHQV6T6URhFS0ryQIDAQABAoIBAQCotA15QcKESyOM
SBpgRoiOuRWye02zeB7dlUmCsOIfTWLaHTdroYn2azZK0ZGqpYYPPLHBXfdDFrg6
4NREwCsuQxNqeZd8ajhhccAjFC2Yy+fVVGWLdj1YnKV37AA7uinFYZE8NtfkDW6u
TH3Q1w4cwHpnfUau/zhx6QaOWDbrRAhr3ThboVUWs2mmA9B6s0dGUUVvf98eTEok
sv0zw0tJ8zMyDTnXQWorkWXnH/oe+3nA8jp3PJouCoGT8Ej9S+yyw03oJRVSpVpi
iiLohpKHqRqFeH5KbnoEmBtm6KBkCAmb6+NuMYabyluFRSYTh5Wnovia88tUeoab
xm4yX9iBAoGBAPzGyDuACXYkQyLMq/jRr90LZvvpDv1UYv8MIrP9UijvI8GGiYzR
QQ+mfwxT8gK8Jw3jHUvD4EdJLZr8JpiZ1io5QhLF+vnAN0B/k6BrEd76G40Rwi/M
IwL3E0WyKueJQ7g6aAo/709NK0X/4Bpe8FeT0xOEhTpJmkuT2EOFWeXRAoGBAOGz
uemRT6RXqEKtQnJgOa8ZQPilVVyZxzlCL410wSz2//nY5d1LiEoy6XYKU/Si+suK
AmCzXjYQ0Y1kRU7d3y37W62GyM129MYkmR9uuiwN+4iT55rpDz3d2SQg9+ublrzh
A7MohPO9BLKCwQ903B74svxMKMkfl+4/DYpb/cx5AoGAf4I6kSEWJL1IDG7YNQx5
PPS6f0piIFIIGgXiH48iebmf/MhD7H/F5QIkxnA1/UEyJiQxq/1jzjHQyoR1Z7b6
PJRjixrJbmCSvntcWaiI/ESHz1Js9TVxV9aQpzCnyeIJAg6cWsdDjWos8QOQ5VyM
unC8IfVQS0XDimpKxkynO3ECgYEAyEBxLBWcZwDLLlWRRe+wXnX2mmX+5cke5OOf
U0+K8b05AlF6KS0SAFtJnkytjrln8V1CnM+oQCoN8vhLMh1THfYNslmLIhlwNblV
Dnlsvxes29H2xRARUN/b/90seqOyS2UNplDGHYfQeh3e8zrI7sXT8FwWN9RLNbxF
5EOYXGkCgYEAnnYN/Qe7yfx8g0O08YEbMWBrTadSV5IR44YautL+4dv+NgZv0mml
HsJQ3DnY2gEMfZo6HbVrOS0ewtEj4HW5XTiFjL8dZm8LfkyhuW6q8YPKS91hEecg
6FpxBQsWvS9899U938J4LiHpED+m/L52SYj84h2mDXl2UDkc8iYFTgk=
-----END RSA PRIVATE KEY-----
```

https://bryceknowhow.blogspot.com/2018/05/cryptography-rsa-private-key-public-key.html

https://bryceknowhow.blogspot.com/2018/05/cryptography-rsa-private-key-public-key.html

Generate a RSA public ksey

- openssl rsa -in key.pem -pubout -out pubkey.pem

```
-----BEGIN PUBLIC KEY-----
MIIBIjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEA3twsjJQ9UCk9M5WMsX46
BE/hmBxccV4Ti4vu7hyfU1wQHiK3Di4MCybn8DrZS3vM+vuqWiq9VMlIkKeY3f3i
TOh7yiIeYgqPz8DZFM//p3WriOevS2oXc7yjzn2mfZ7iKrZXk626KCm/1l0ZlfFe
6Nl2/3ooMu4eAcW5RZQGen5R4ShFjNQpQfqUT95Ce+xK4Xf4Roc6C/I8EVBHX5Ll
BaURCvc+lX0jR9aaeAWVnMiXyUYFV2ViQkoUwUGPRKs/AcX3t4x8Bo/NfKqPrdca
AJx5q1BNqAwLcKhHXtuCCPcIUMeCfWoYadiTMFq+okuv+4Q4iePHQV6T6URhFS0r
yQIDAQAB
-----END PUBLIC KEY-----
```

https://bryceknowhow.blogspot.com/2018/05/cryptography-rsa-private-key-public-key.html

如何使用 OpenSSL 建立開發測試用途的自簽憑證 (Self-Signed Certificate)

2019/02/25 12:57 Will 保哥 Linux, Windows, 介紹好用工具, 系統管理

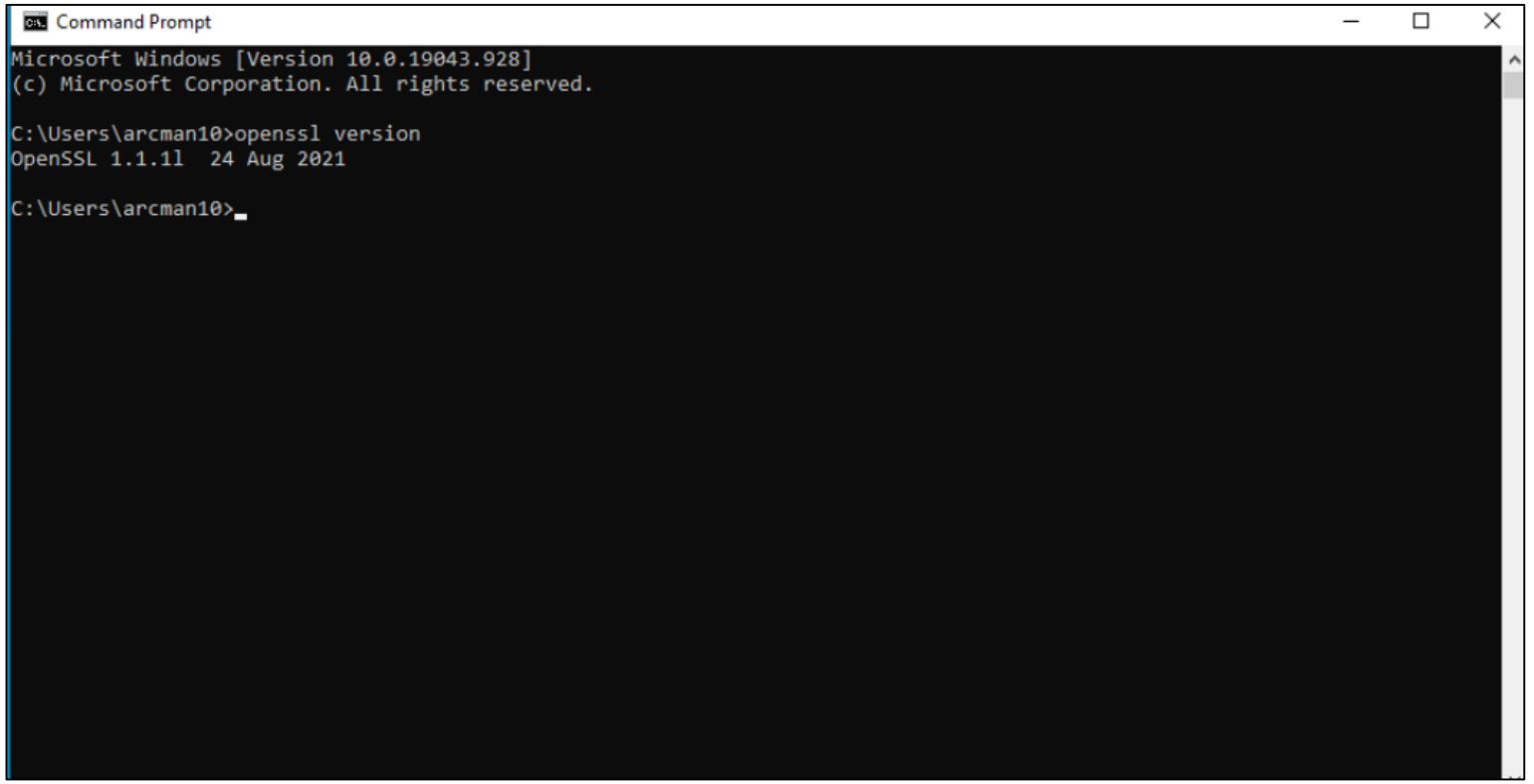
分享

如果要產生開發測試用途的自簽憑證，說到底還是跨平台的 OpenSSL 好用，這篇文章我就來談談如何透過 OpenSSL 工具來產生可信賴的 SSL/TLS 自簽憑證。

https://blog.miniasp.com/post/2019/02/25/Creating-Self-signed-Certificate-using-OpenSSL

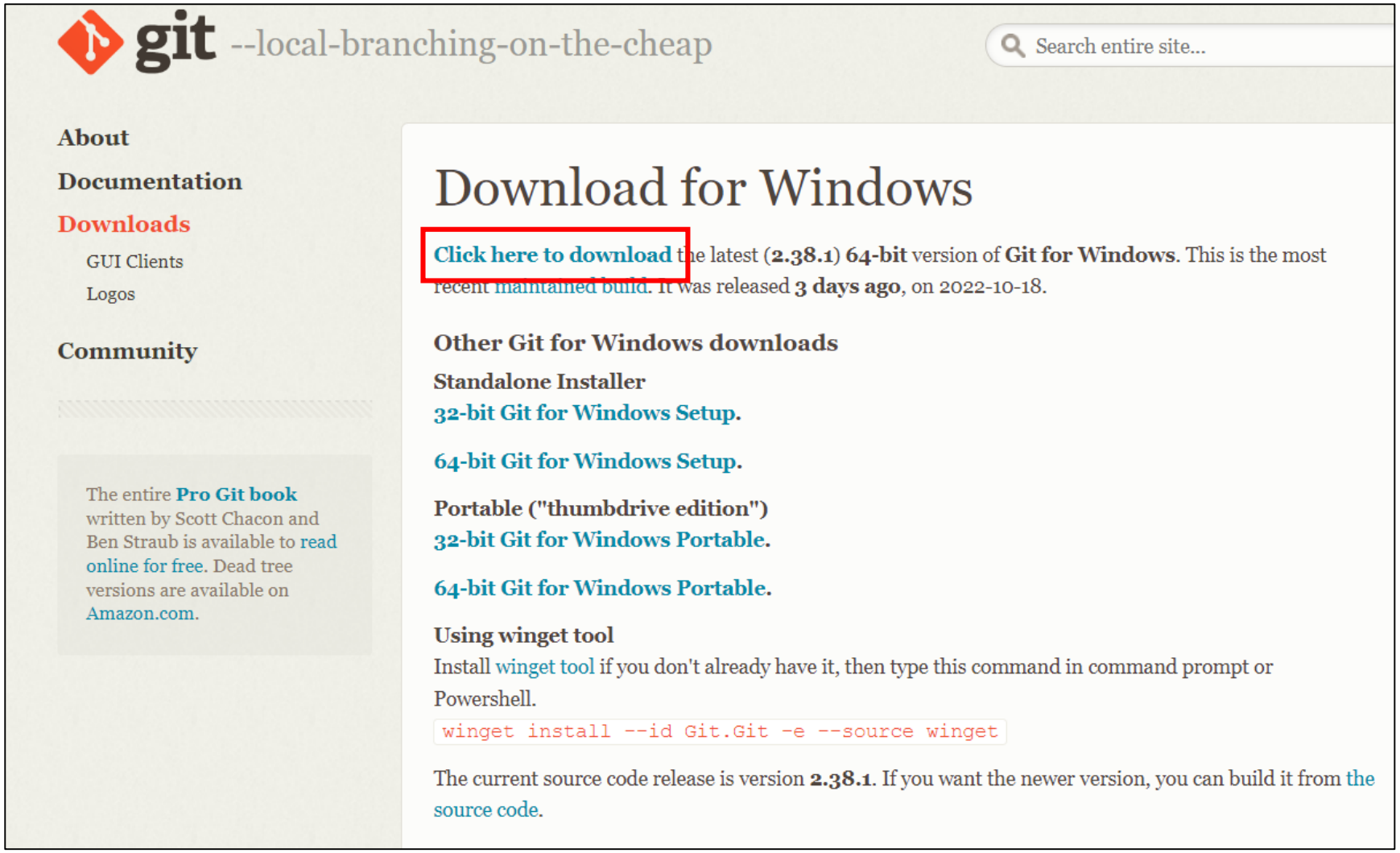
Exercise 13-3

- Install openssl



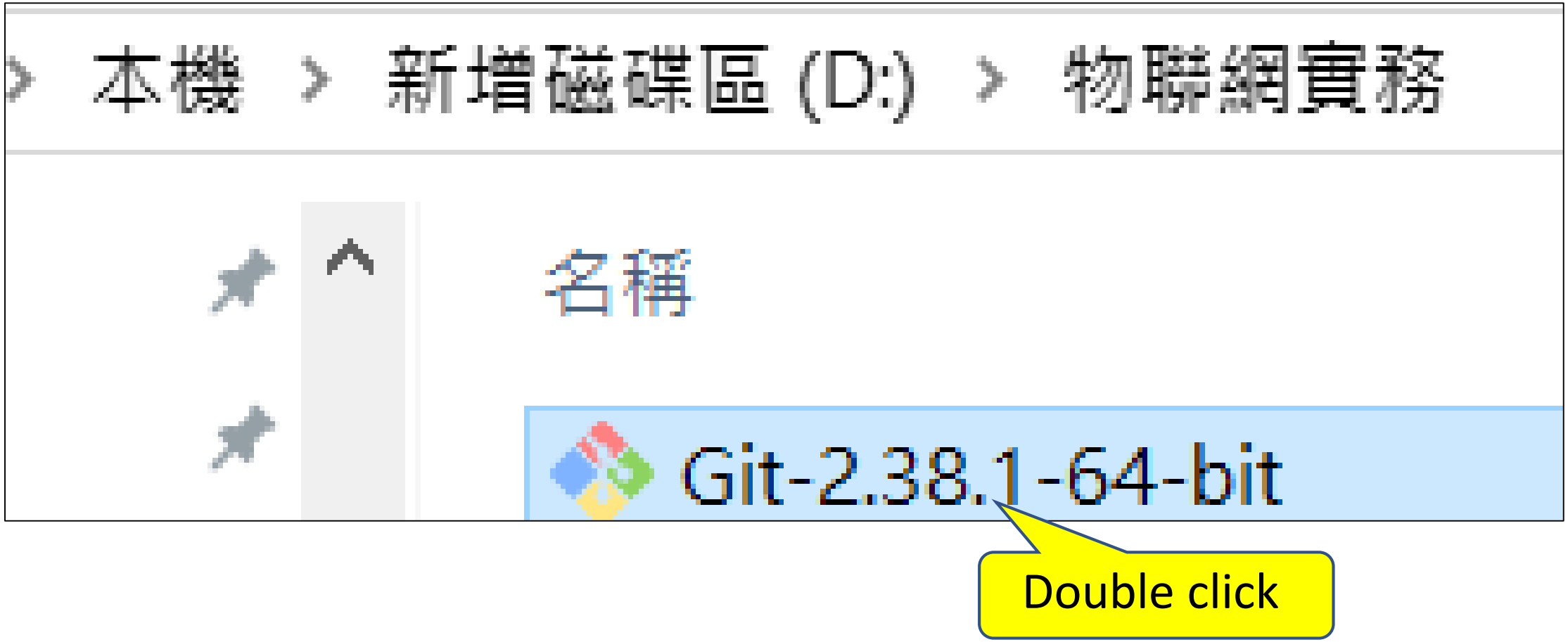
https://thesecmaster.com/procedure-to-install-openssl-on-the-windows-platform/

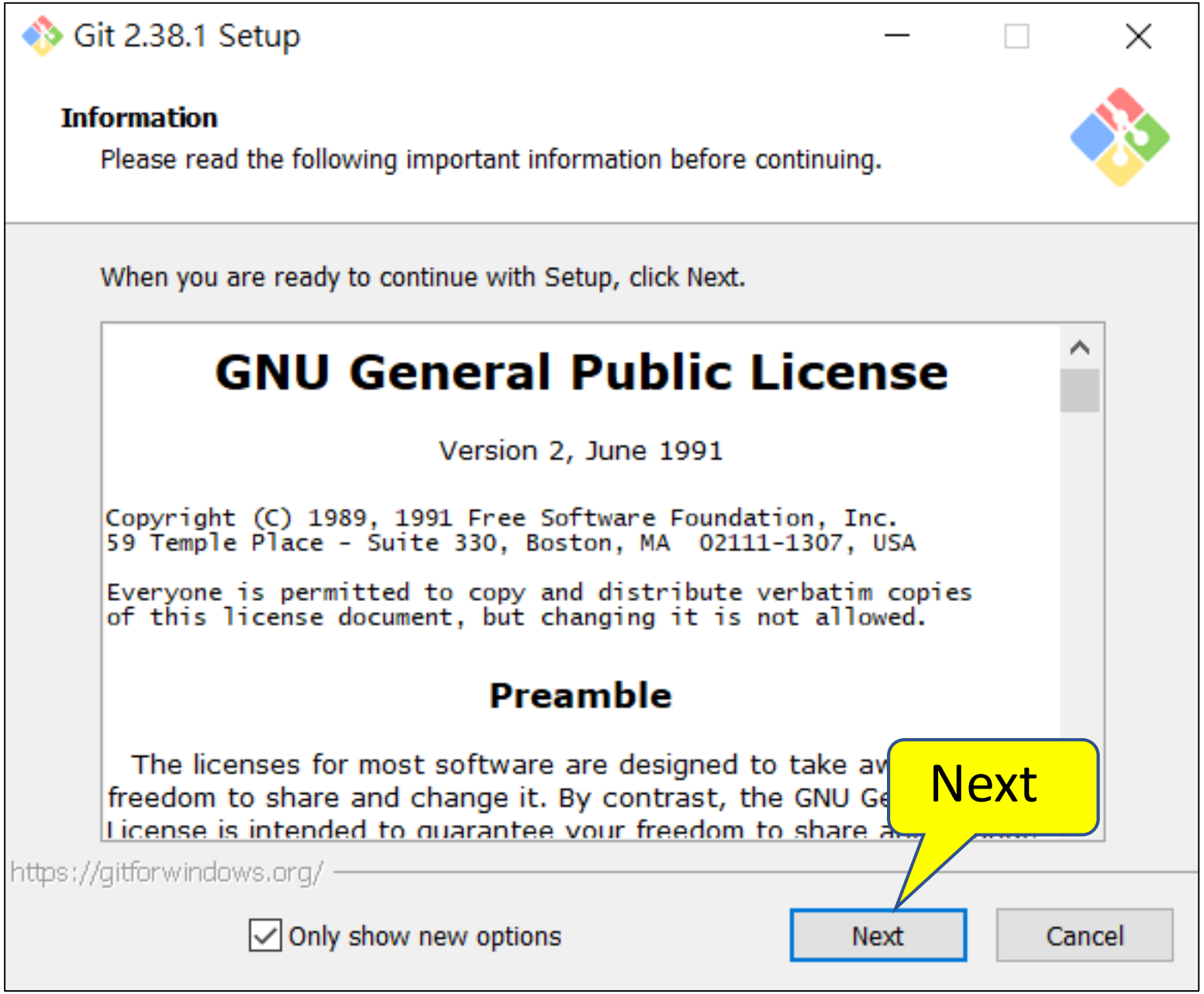
Git for Windows downloads

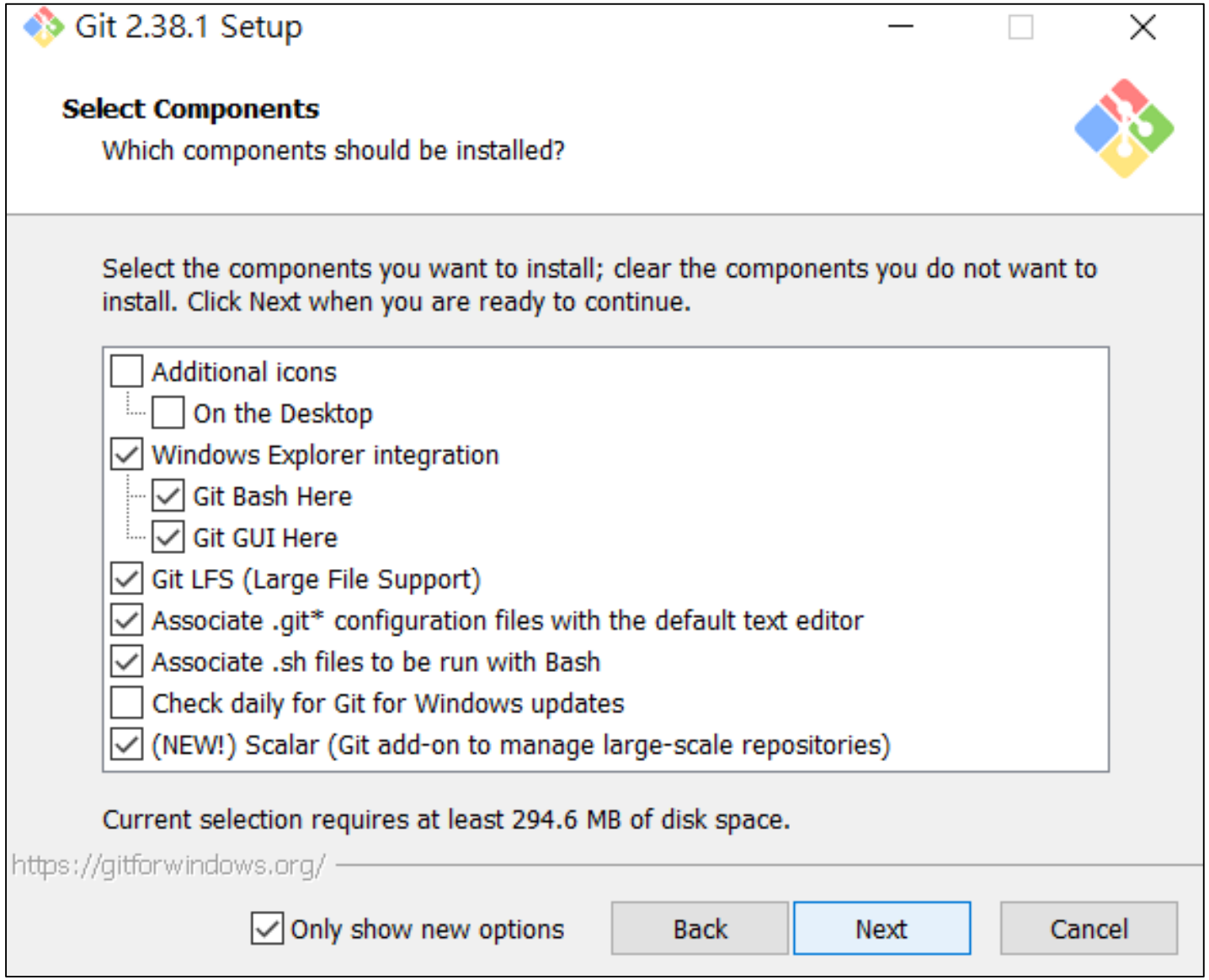


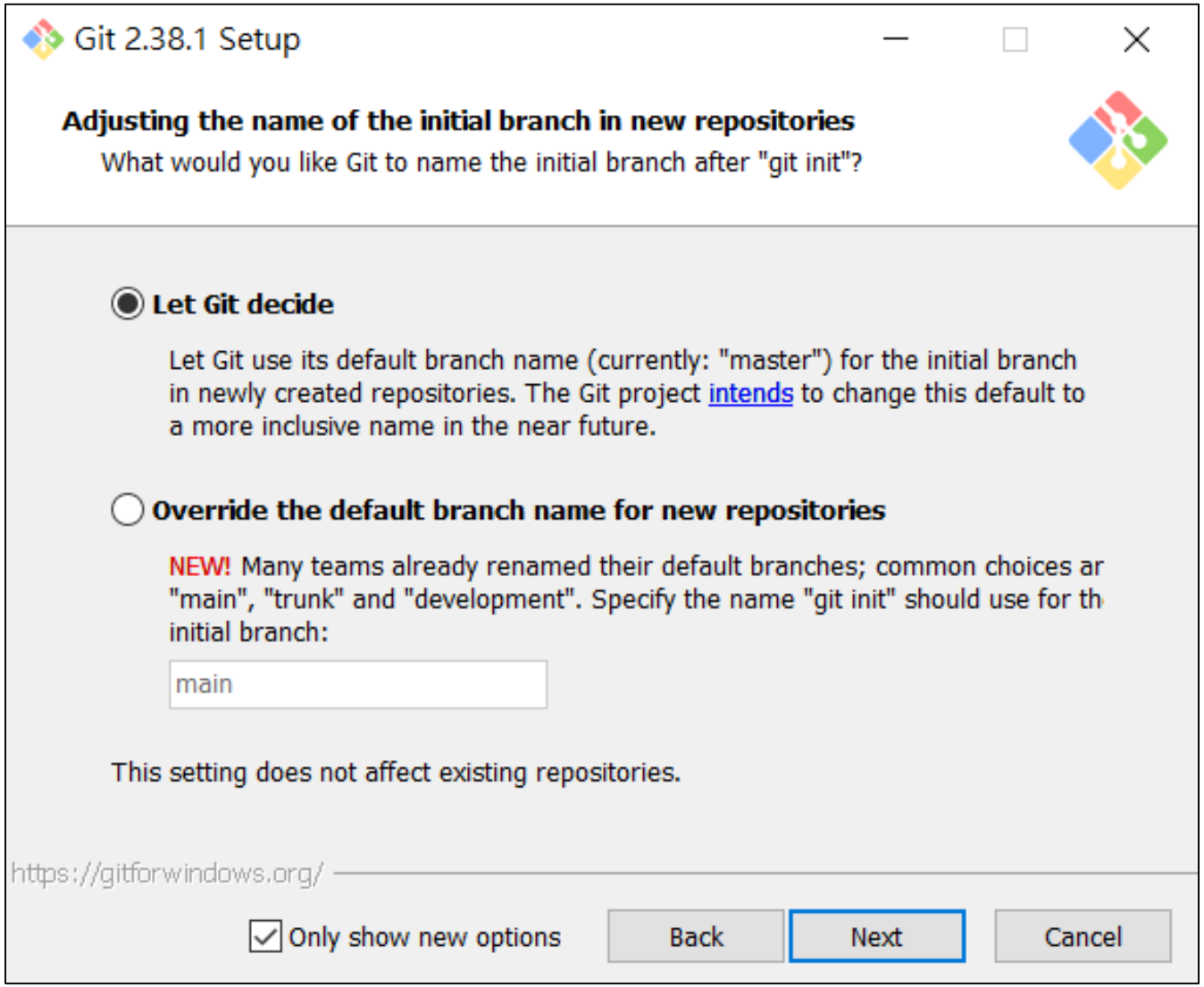
https://www.git-scm.com/download/win

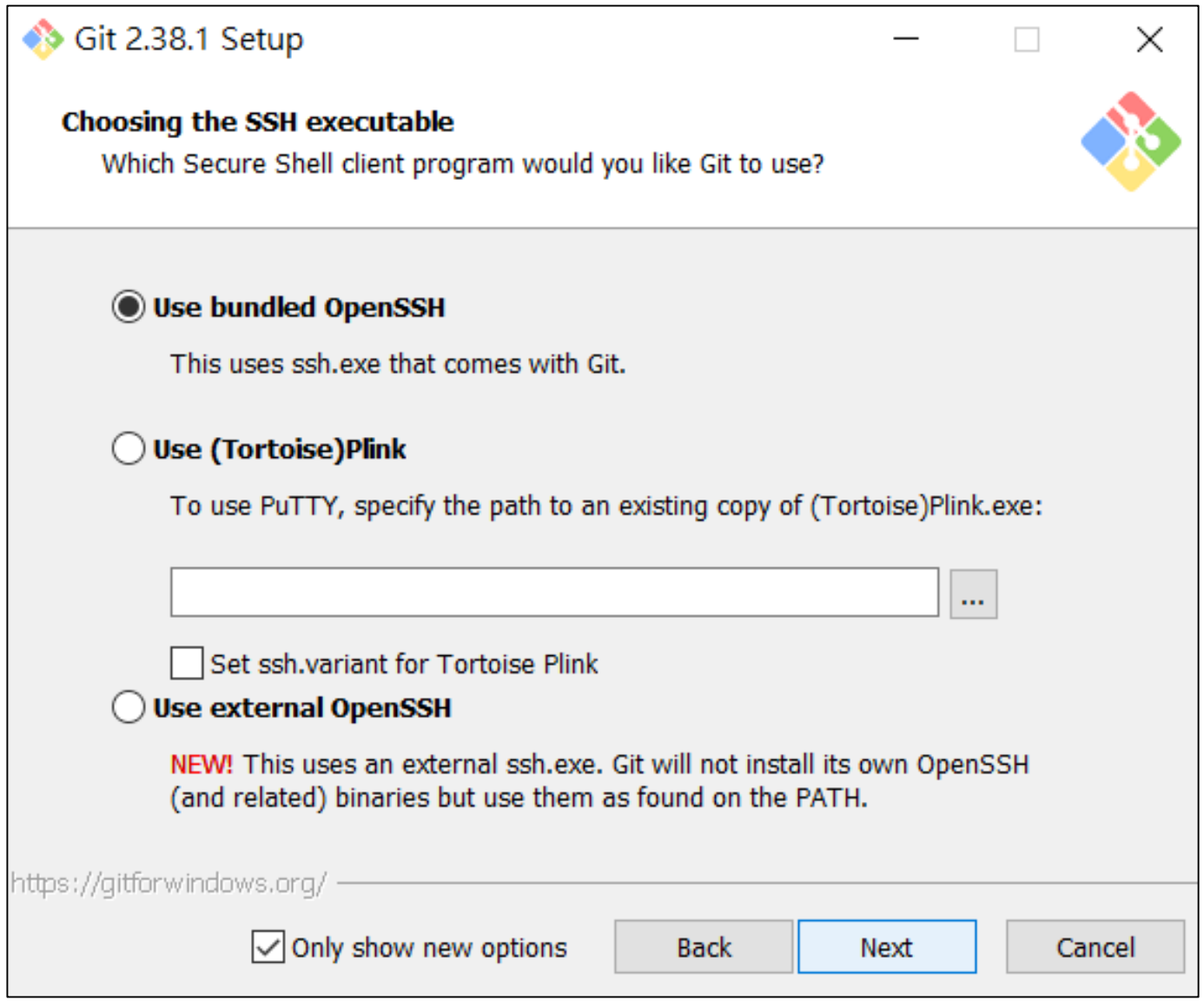
Install

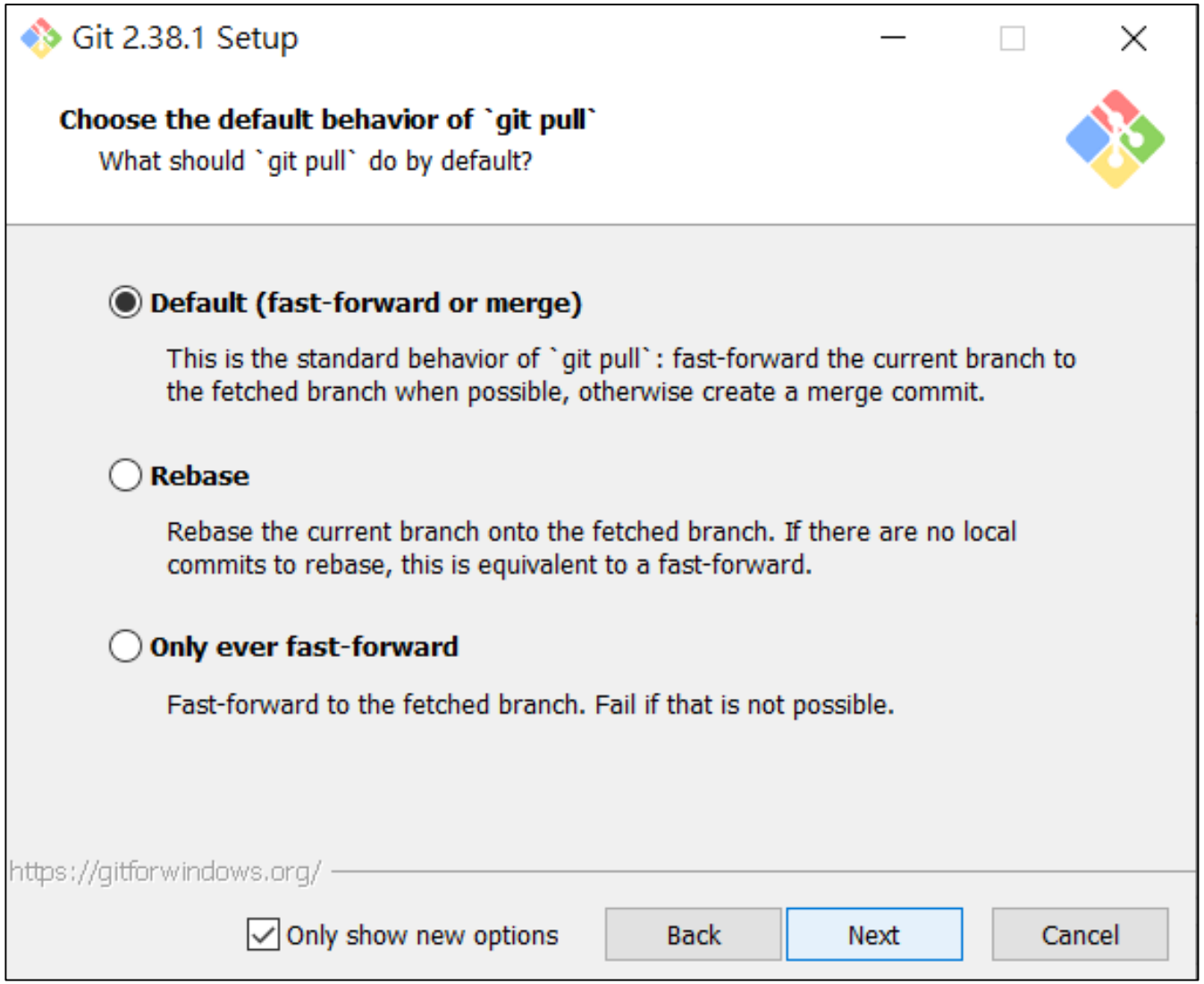


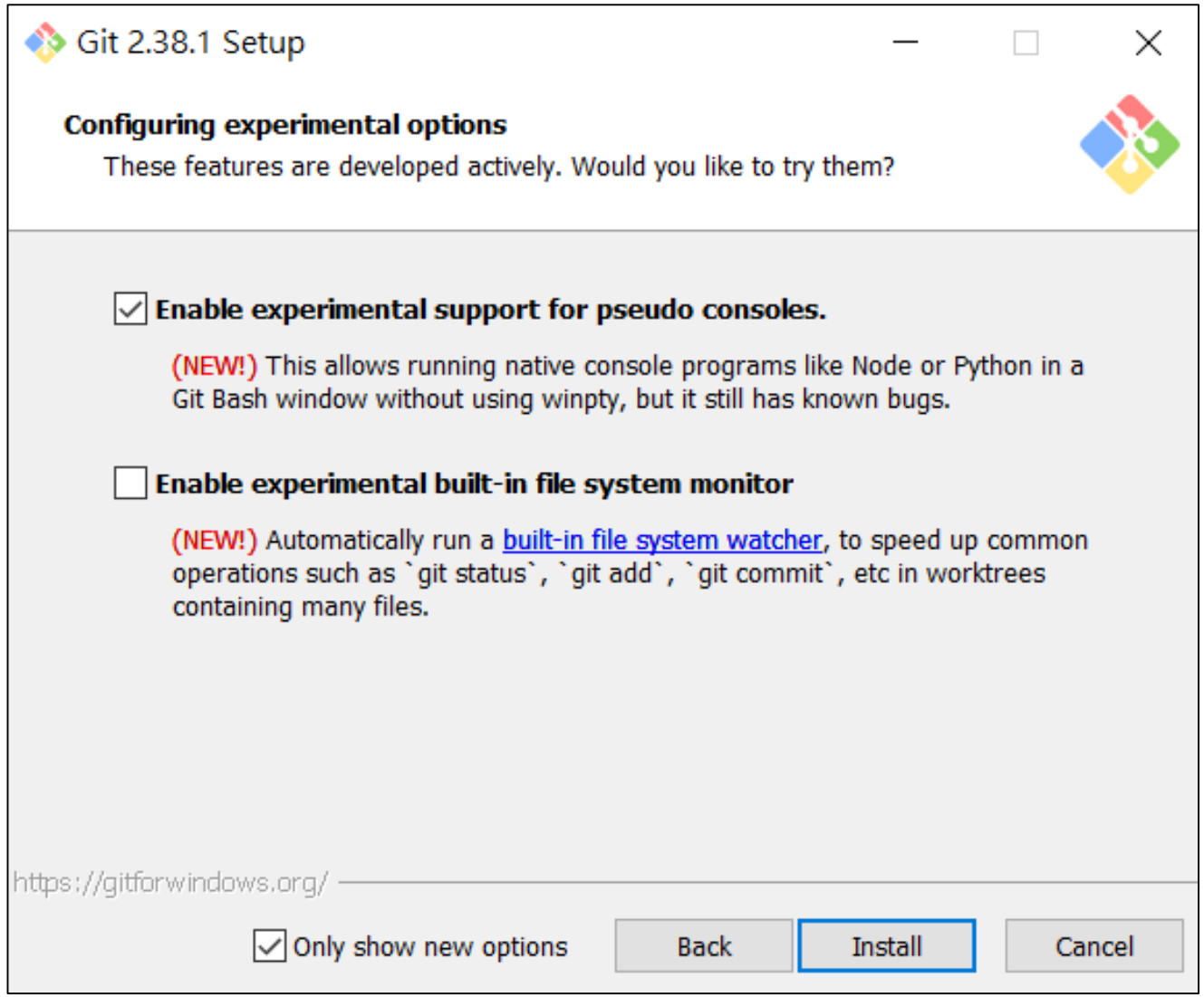

Git 2.38.1 Setup
Information
Please read the following important information before continuing.
When you are ready to continue with Setup, click Next.
GNU General Public License
Version 2, June 1991
Copyright (C) 1989, 1991 Free Software Foundation, Inc.
59 Temple Place - Suite 330, Boston, MA 02111-1307, USA
Everyone is permitted to copy and distribute verbatim copies
of this license document, but changing it is not allowed.
Preamble
The licenses for most software are designed to take av
freedom to share and change it. By contrast, the GNU Ge
License is intended to guarantee your freedom to share
https://gitforwindows.org/
Only show new options
Next
Cancel
Next

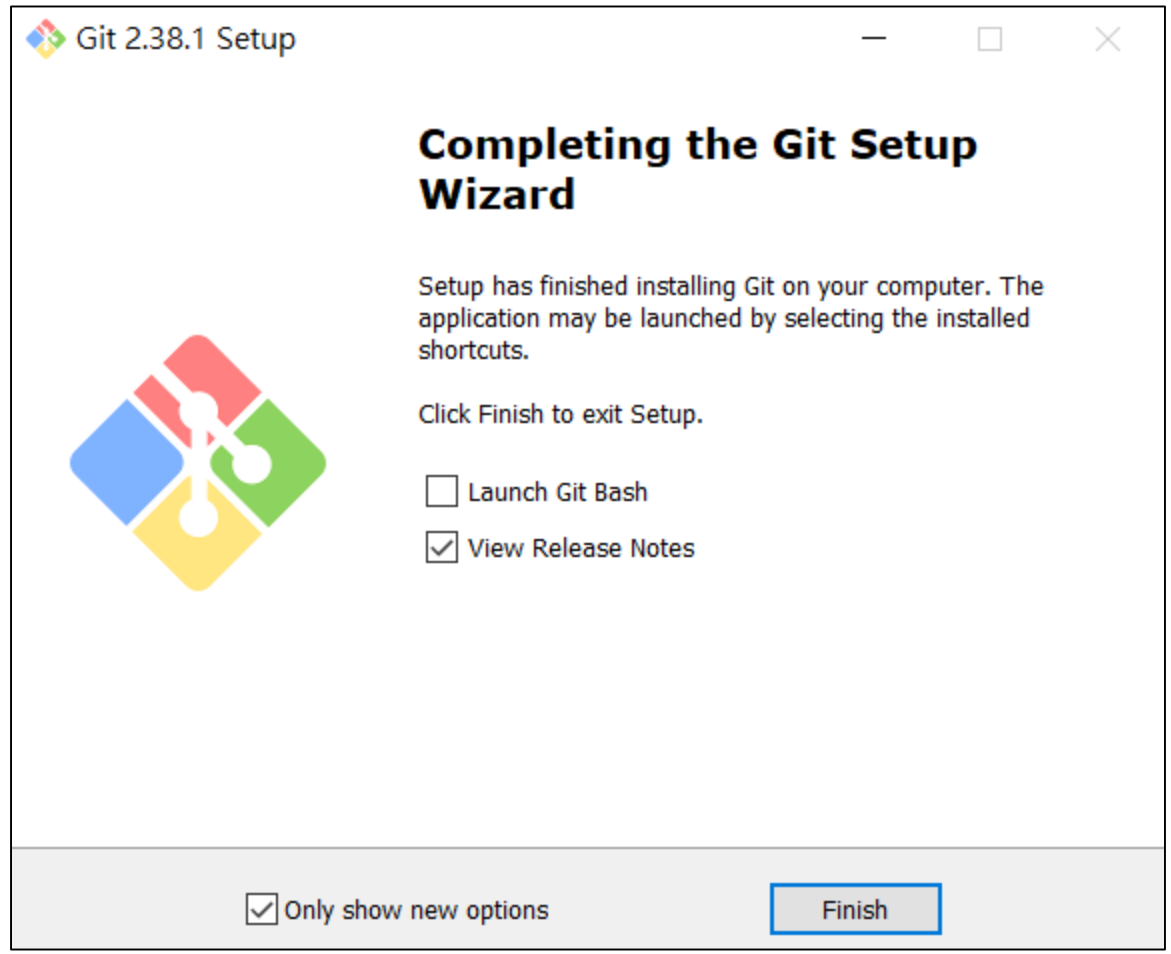

Git 2.38.1 Setup
Select Components
Which components should be installed?
Select the components you want to install; clear the components you do not want to install. Click Next when you are ready to continue.
Additional icons
On the Desktop
Windows Explorer integration
Git Bash Here
Git GUI Here
Git LFS (Large File Support)
Associate .git* configuration files with the default text editor
Associate .sh files to be run with Bash
Check daily for Git for Windows updates
(NEW!) Scalar (Git add-on to manage large-scale repositories)
Current selection requires at least 294.6 MB of disk space.
https://gitforwindows.org/
Only show new options
Back
Next
Cancel


Git 2.38.1 Setup
Adjusting the name of the initial branch in new repositories
What would you like Git to name the initial branch after "git init"?
Let Git decide
Let Git use its default branch name (currently: "master") for the initial branch in newly created repositories. The Git project intends to change this default to a more inclusive name in the near future.
Override the default branch name for new repositories
NEW! Many teams already renamed their default branches; common choices ar "main", "trunk" and "development". Specify the name "git init" should use for th initial branch:
main
This setting does not affect existing repositories.
https://gitforwindows.org/
Only show new options
Back
Next
Cancel

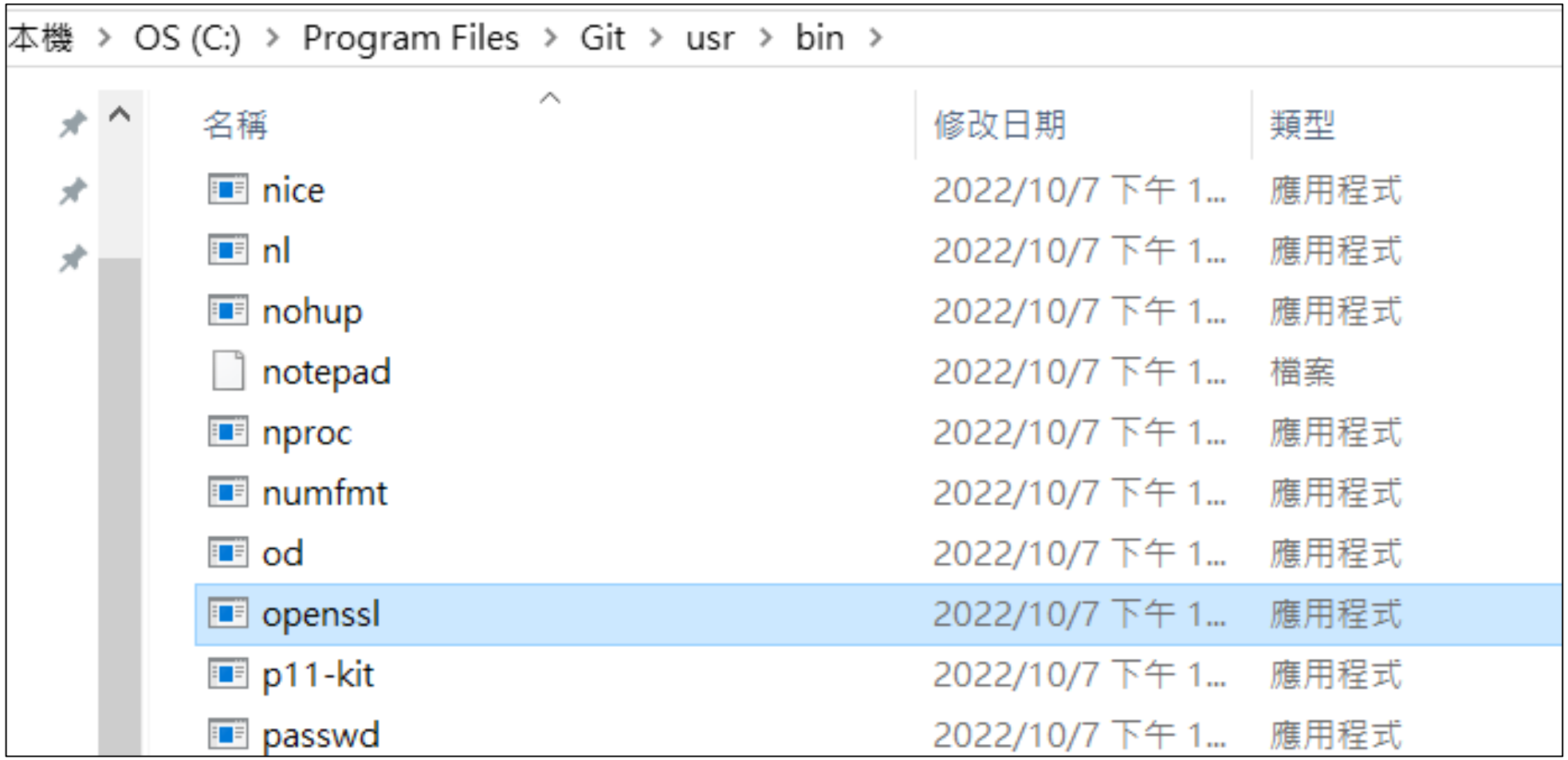

Git 2.38.1 Setup
Choosing the SSH executable
Which Secure Shell client program would you like Git to use?
Use bundled OpenSSH
This uses ssh.exe that comes with Git.
Use (Tortoise)Plink
To use PuTTY, specify the path to an existing copy of (Tortoise)Plink.exe:
...
Set ssh.variant for Tortoise Plink
Use external OpenSSH
NEW! This uses an external ssh.exe. Git will not install its own OpenSSH (and related) binaries but use them as found on the PATH.
https://gitforwindows.org/
Only show new options
Back
Next
Cancel

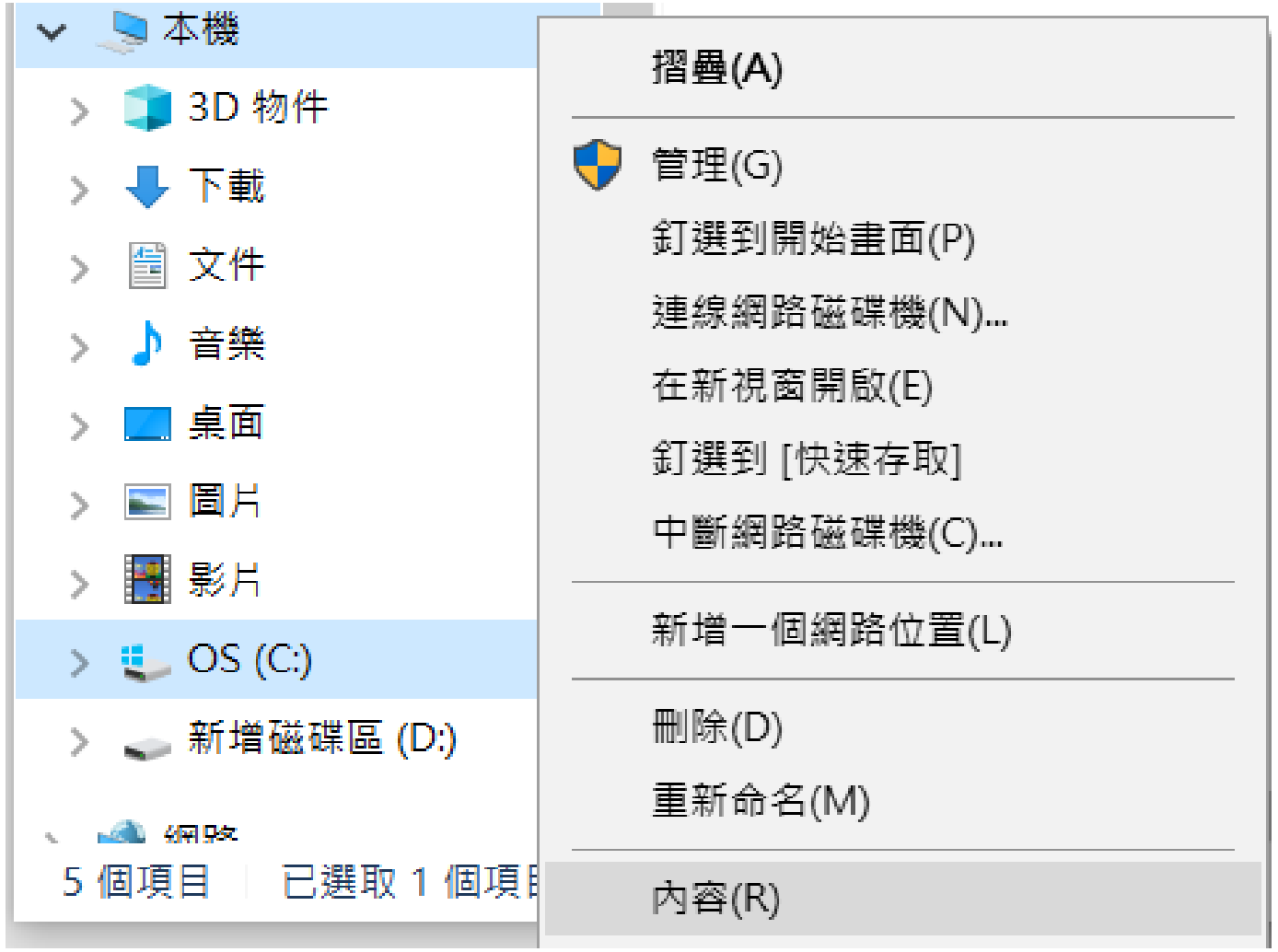

Git 2.38.1 Setup
Choose the default behavior of `git pull`
What should `git pull` do by default?
Default (fast-forward or merge)
This is the standard behavior of `git pull`: fast-forward the current branch to the fetched branch when possible, otherwise create a merge commit.
Rebase
Rebase the current branch onto the fetched branch. If there are no local commits to rebase, this is equivalent to a fast-forward.
Only ever fast-forward
Fast-forward to the fetched branch. Fail if that is not possible.
https://gitforwindows.org/
Only show new options
Back
Next
Cancel

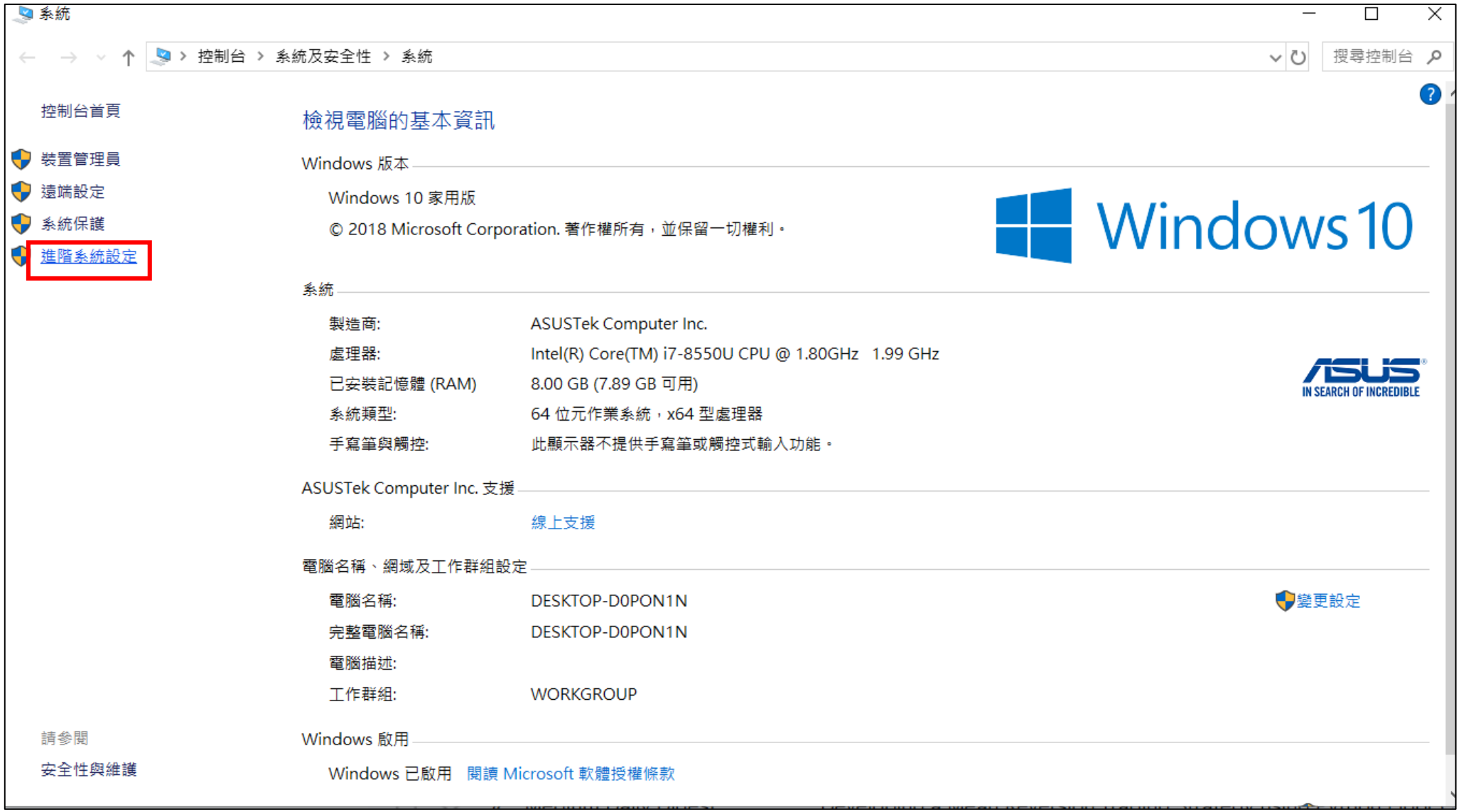

Git 2.38.1 Setup
Configuring experimental options
These features are developed actively. Would you like to try them?
Enable experimental support for pseudo consoles.
(NEW!) This allows running native console programs like Node or Python in a Git Bash window without using winpty, but it still has known bugs.
Enable experimental built-in file system monitor
(NEW!) Automatically run a built-in file system watcher, to speed up common operations such as `git status`, `git add`, `git commit`, etc in worktrees containing many files.
https://gitforwindows.org/
Only show new options
Back
Install
Cancel


Git 2.38.1 Setup
Completing the Git Setup Wizard
Setup has finished installing Git on your computer. The application may be launched by selecting the installed shortcuts.
Click Finish to exit Setup.
Launch Git Bash
View Release Notes
Only show new options
Finish

C:\Program Files\Git\usr\bin\openssl.exe




本機
3D 物件
下載
文件
音樂
桌面
圖片
影片
OS (C:)
新增磁碟區 (D:)
5 個項目
摺疊(A)
管理(G)
釘選到開始畫面(P)
連線網路磁碟機(N)...
在新視窗開啟(E)
釘選到 [快速存取]
中斷網路磁碟機(C)...
新增一個網路位置(L)
刪除(D)
重新命名(M)
內容(R)


系統
控制台 › 系統及安全性 › 系統
搜尋控制台
控制台首頁
裝置管理員
遠端設定
系統保護
進階系統設定
檢視電腦的基本資訊
Windows 版本
Windows 10 家用版
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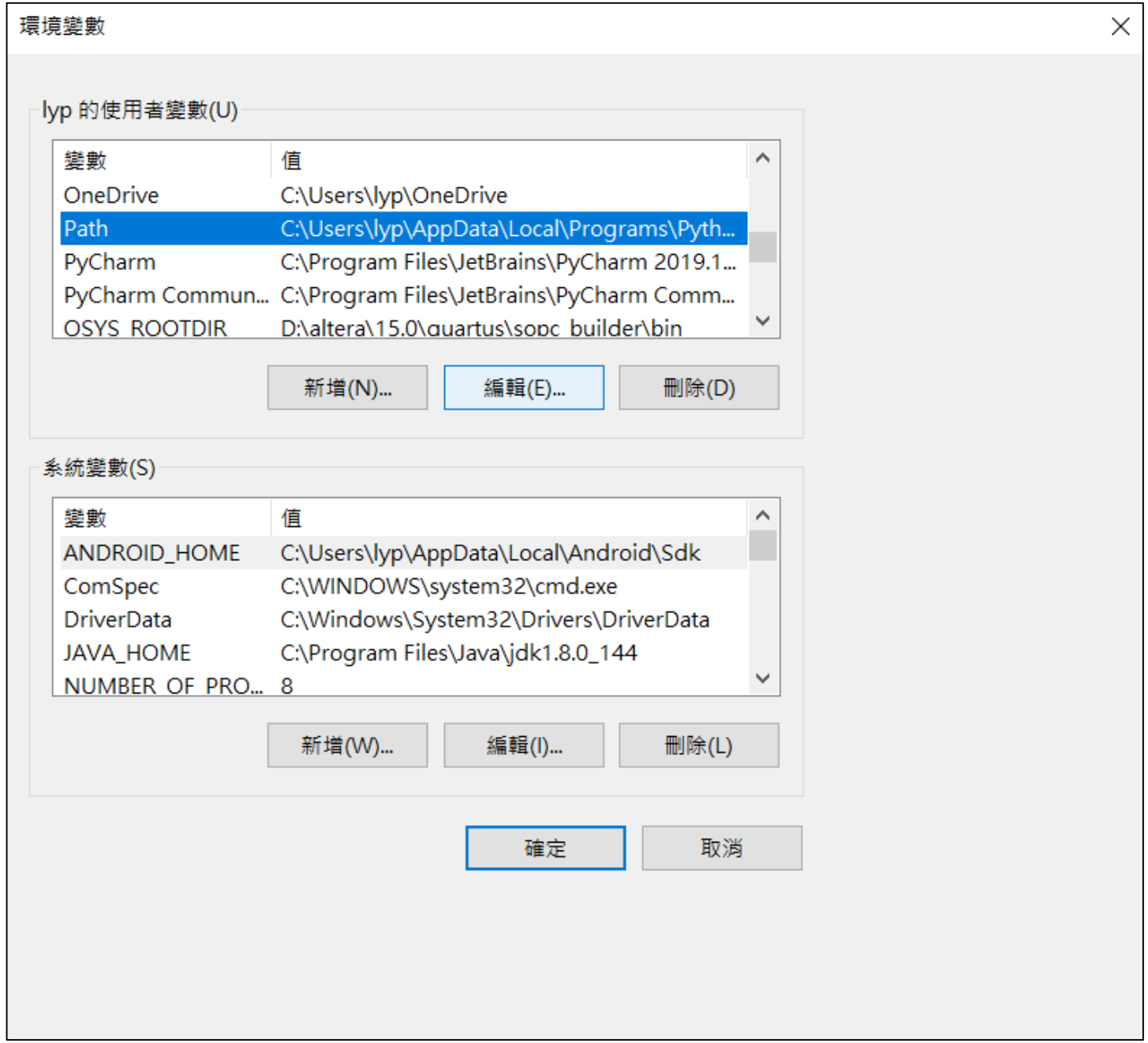
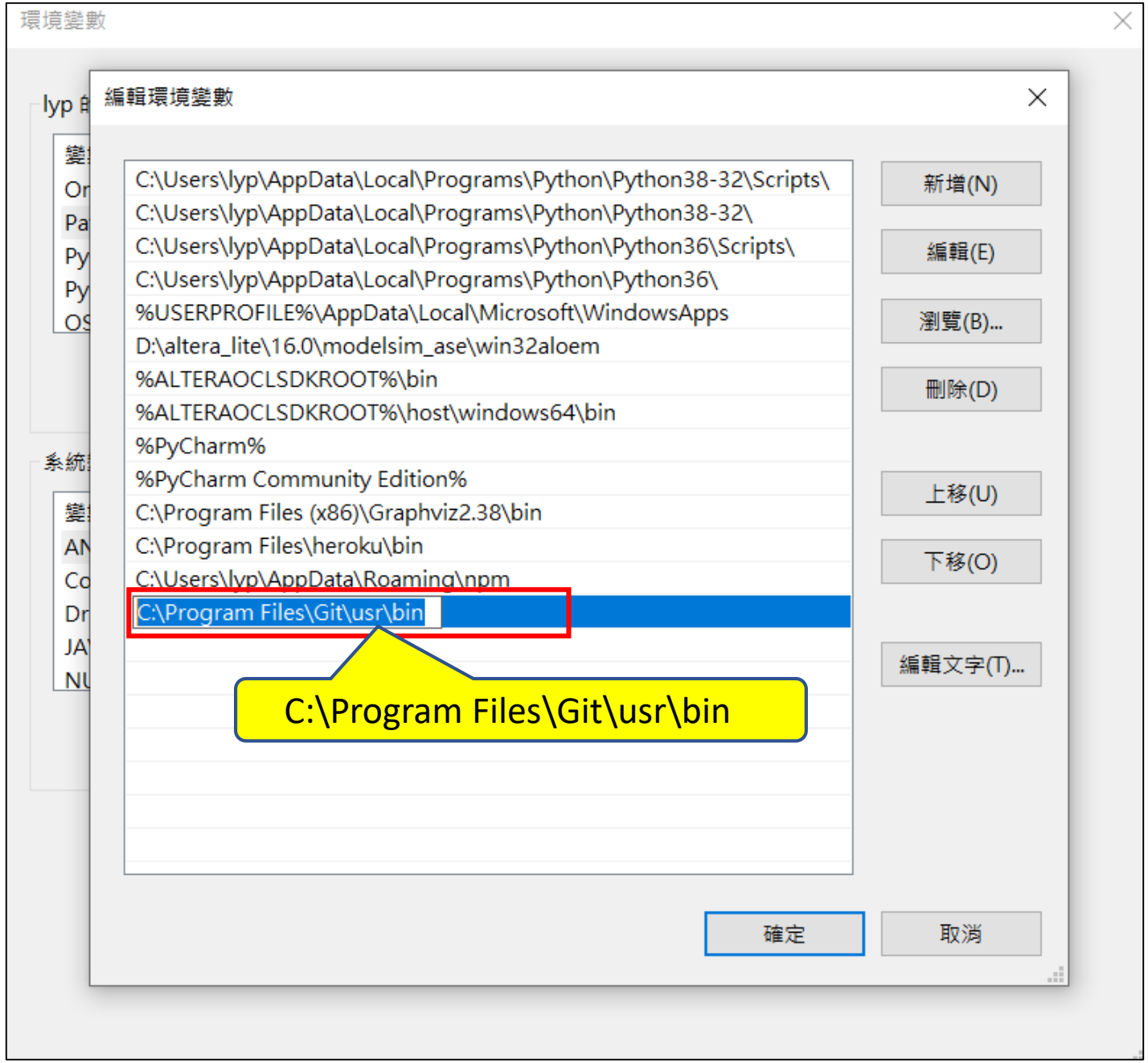
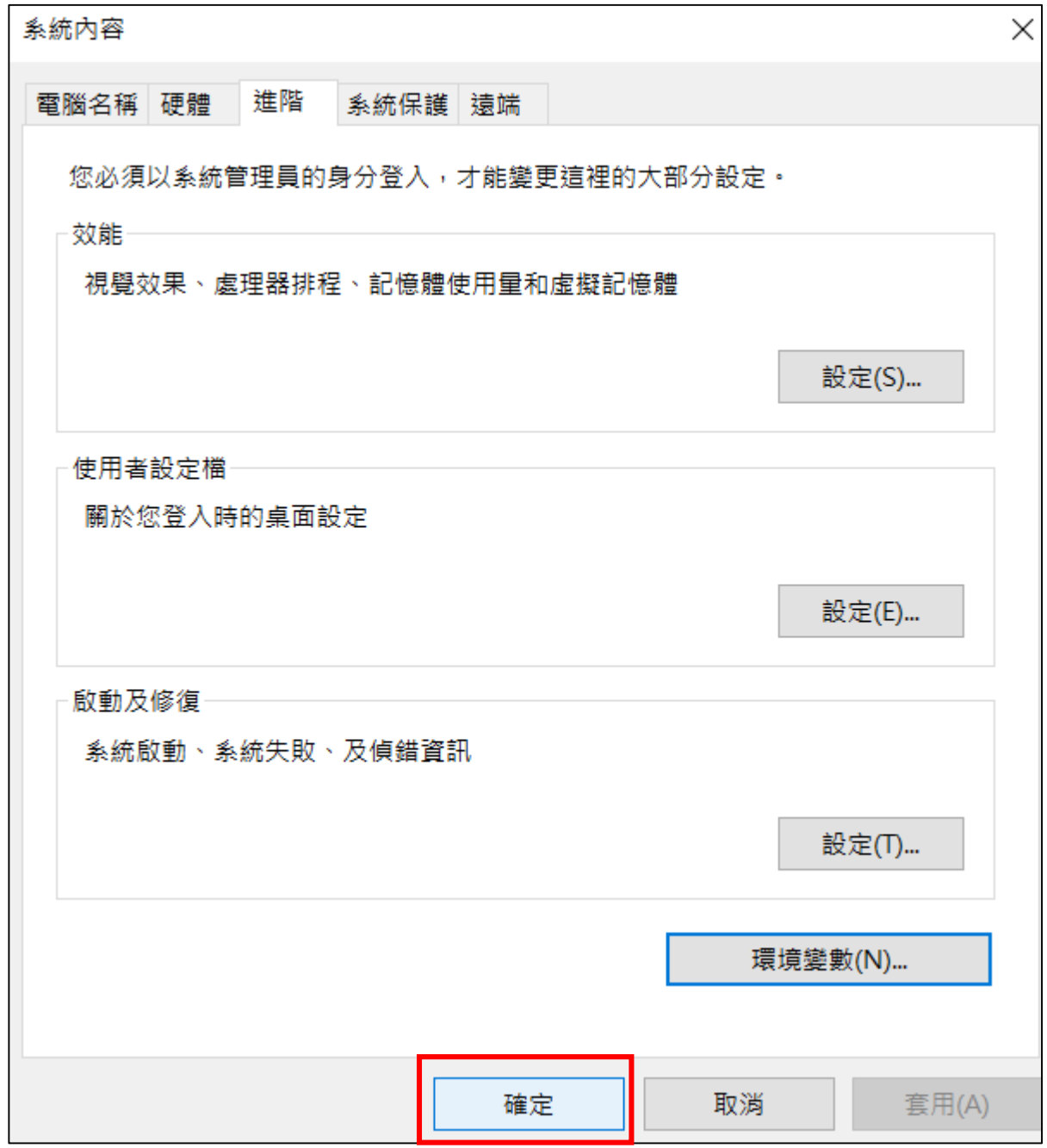
Windows 10
系統
製造商: ASUSTek Computer Inc.
處理器: Intel(R) Core(TM) i7-8550U CPU @ 1.80GHz 1.99 GHz
已安裝記憶體 (RAM) 8.00 GB (7.89 GB 可用)
系統類型: 64 位元作業系統，x64 型處理器
手寫筆與觸控: 此顯示器不提供手寫筆或觸控式輸入功能。
ASUS
IN SEARCH OF INCREDIBLE
ASUSTek Computer Inc. 支援
網站: 線上支援
電腦名稱、網域及工作群組設定
電腦名稱: DESKTOP-D0PON1N
變更設定
完整電腦名稱: DESKTOP-D0PON1N
電腦描述:
工作群組: WORKGROUP
請參閱
安全性與維護
Windows 啟用
Windows 已啟用 閱讀 Microsoft 軟體授權條款

系統內容
電腦名稱
硬體
進階
系統保護
遠端
您必須以系統管理員的身分登入，才能變更這裡的大部分設定。
效能
視覺效果、處理器排程、記憶體使用量和虛擬記憶體
設定(S)...
使用者設定檔
關於您登入時的桌面設定
設定(E)...
啟動及修復
系統啟動、系統失敗、及偵錯資訊
設定(T)...
環境變數(N)...
確定
取消
套用(A)


環境變數
lyp 的使用者變數(U)
變數
值
OneDrive
C:\Users\lyp\OneDrive
Path
C:\Users\lyp\AppData\Local\Programs\Pyth...
PyCharm
C:\Program Files\JetBrains\PyCharm 2019.1...
PyCharm Commun...
C:\Program Files\JetBrains\PyCharm Comm...
OSYS_ROOTDIR
D:\altera\15.0\quartus\sopc_builder\bin
新增(N)...
編輯(E)...
刪除(D)
系統變數(S)
變數
值
ANDROID_HOME
C:\Users\lyp\AppData\Local\Android\Sdk
ComSpec
C:\WINDOWS\system32\cmd.exe
DriverData
C:\Windows\System32\Drivers\DriverData
JAVA_HOME
C:\Program Files\Java\jdk1.8.0_144
NUMBER_OF_PRO...
8
新增(W)...
編輯(I)...
刪除(L)
確定
取消


環境變數
編輯環境變數
C:\Users\lyp\AppData\Local\Programs\Python\Python38-32\Scripts\
C:\Users\lyp\AppData\Local\Programs\Python\Python38-32\
C:\Users\lyp\AppData\Local\Programs\Python\Python36\Scripts\
C:\Users\lyp\AppData\Local\Programs\Python\Python36\
%USERPROFILE%\AppData\Local\Microsoft\WindowsApps
D:\altera_lite\16.0\modelsim_ase\win32aloem
%ALTERAOCLSDKROOT%\bin
%ALTERAOCLSDKROOT%\host\windows64\bin
%PyCharm%
%PyCharm Community Edition%
C:\Program Files (x86)\Graphviz2.38\bin
C:\Program Files\heroku\bin
C:\Users\lyp\AppData\Roaming\npm
C:\Program Files\Git\usr\bin
新增(N)
編輯(E)
瀏覽(B)...
刪除(D)
上移(U)
下移(O)
編輯文字(T)...
C:\Program Files\Git\usr\bin
確定
取消


系統內容
電腦名稱
硬體
進階
系統保護
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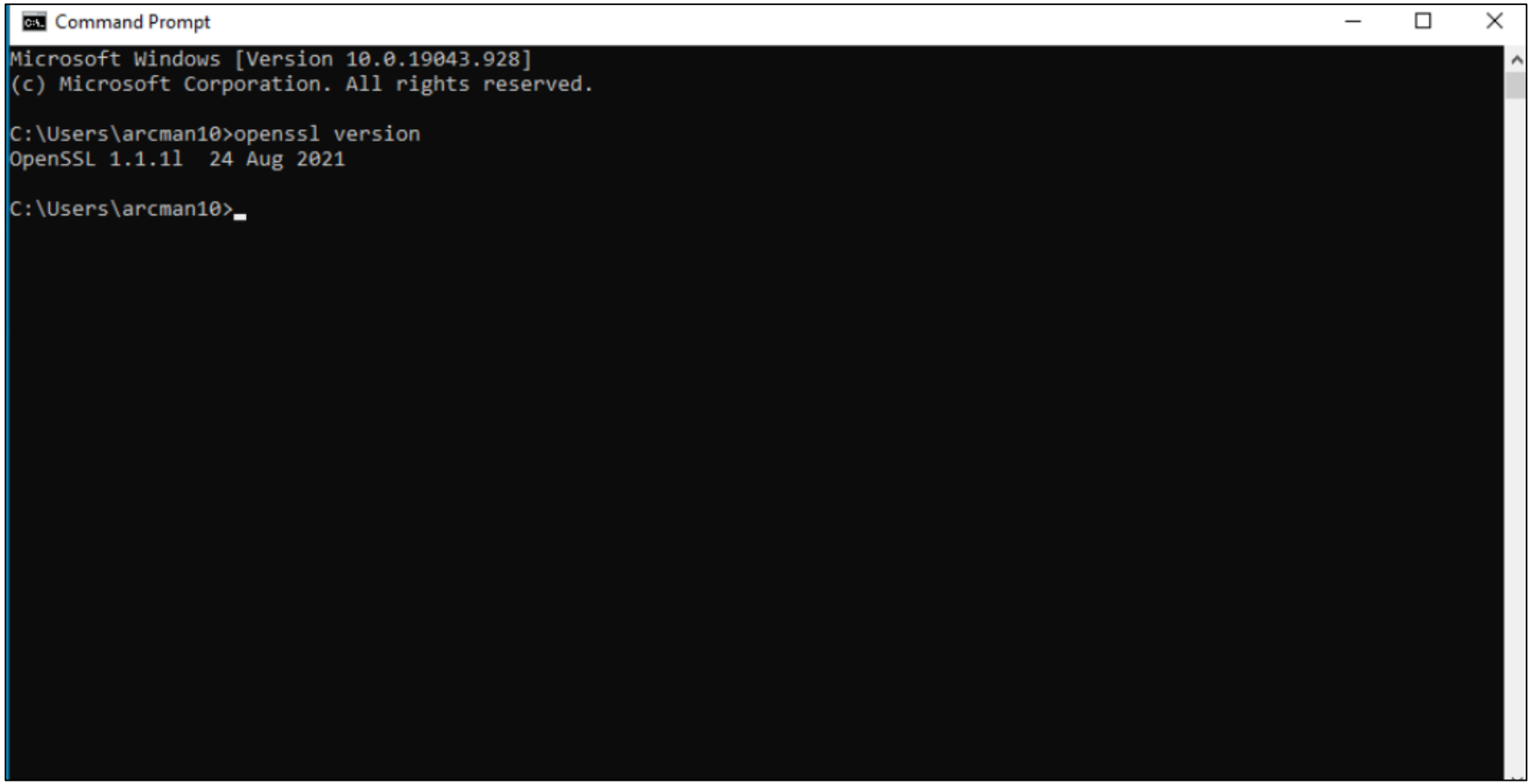
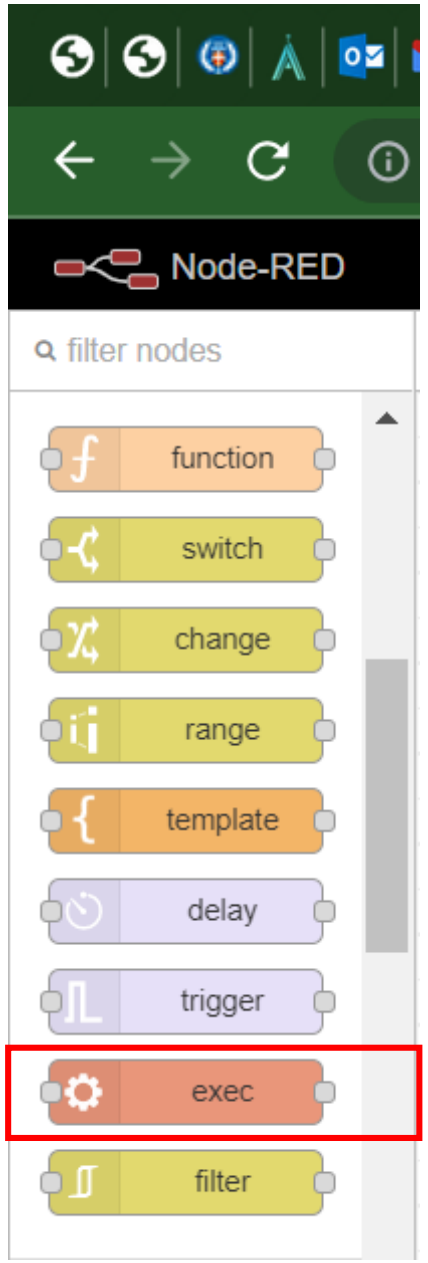
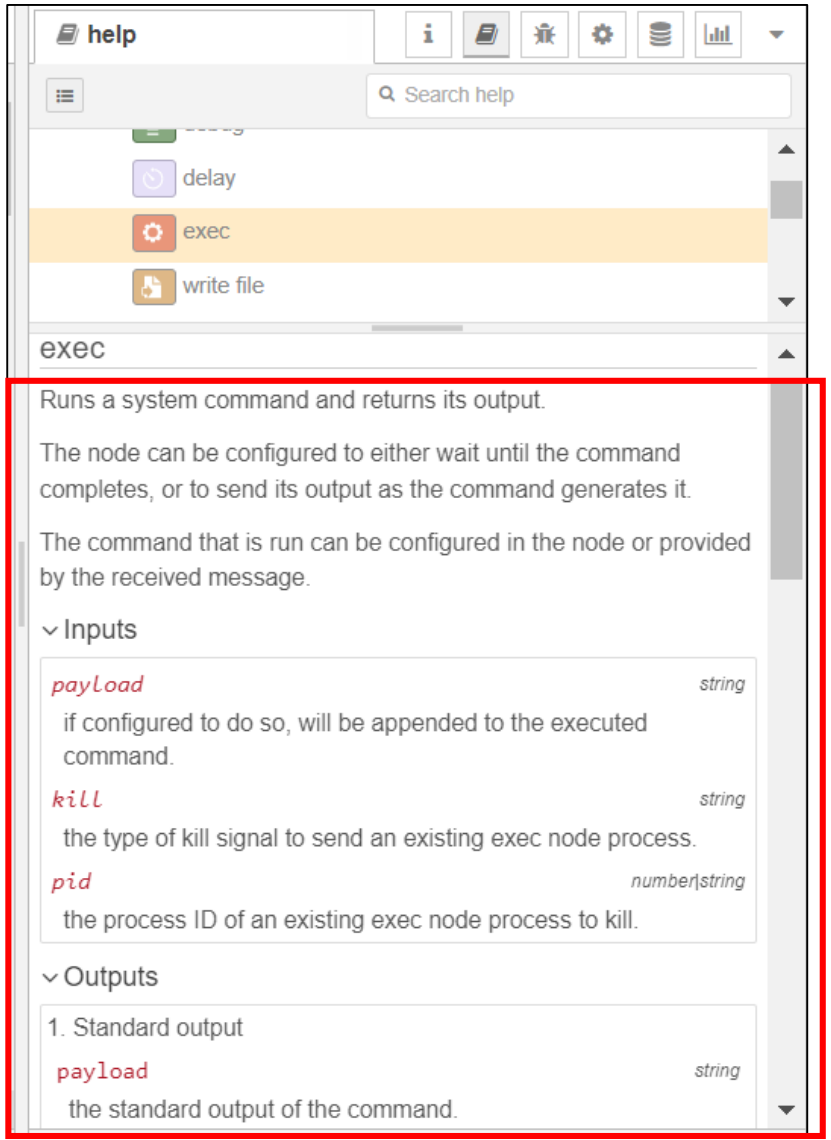
設定(E)...
啟動及修復
系統啟動、系統失敗、及偵錯資訊
設定(T)...
環境變數(N)...
確定
取消
套用(A)

Run OpenSSL

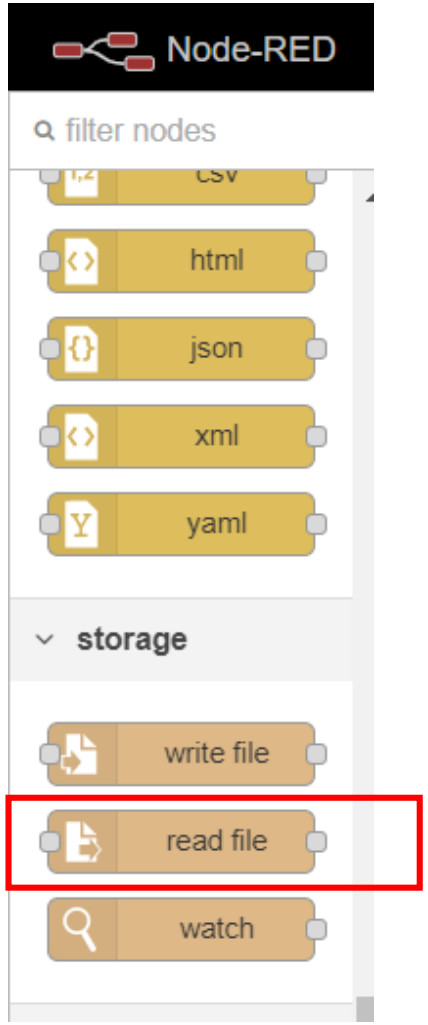

Command Prompt
Microsoft Windows [Version 10.0.19043.928]
(c) Microsoft Corporation. All rights reserved.
C:\Users\arcman10>openssl version
OpenSSL 1.1.1l 24 Aug 2021
C:\Users\arcman10>

exec Node


Node-RED
filter nodes
function
switch
change
range
template
delay
trigger
exec
filter


help
Search help
delay
exec
write file
exec
Runs a system command and returns its output.
The node can be configured to either wait until the command completes, or to send its output as the command generates it.
The command that is run can be configured in the node or provided by the received message.
Inputs
payload
string
if configured to do so, will be appended to the executed command.
kill
string
the type of kill signal to send an existing exec node process.
pid
number|string
the process ID of an existing exec node process to kill.
Outputs
1. Standard output
payload
string
the standard output of the command.

read file node



read file

Reads the contents of a file as either a string or binary buffer.

Inputs

filename — *string*

The name of the file to be read can be provided in the node configuration, or as a message property. By default it will use `msg.filename` but this can be customised in the node.

Outputs

`payload` — *string | buffer*

The contents of the file as either a string or binary buffer.

filename — *string*

If not configured in the node, this optional property sets the name of the file to be read.

Details

The filename should be an absolute path, otherwise it will be relative to the working directory of the Node-RED process.

On Windows, path separators may need to be escaped, for

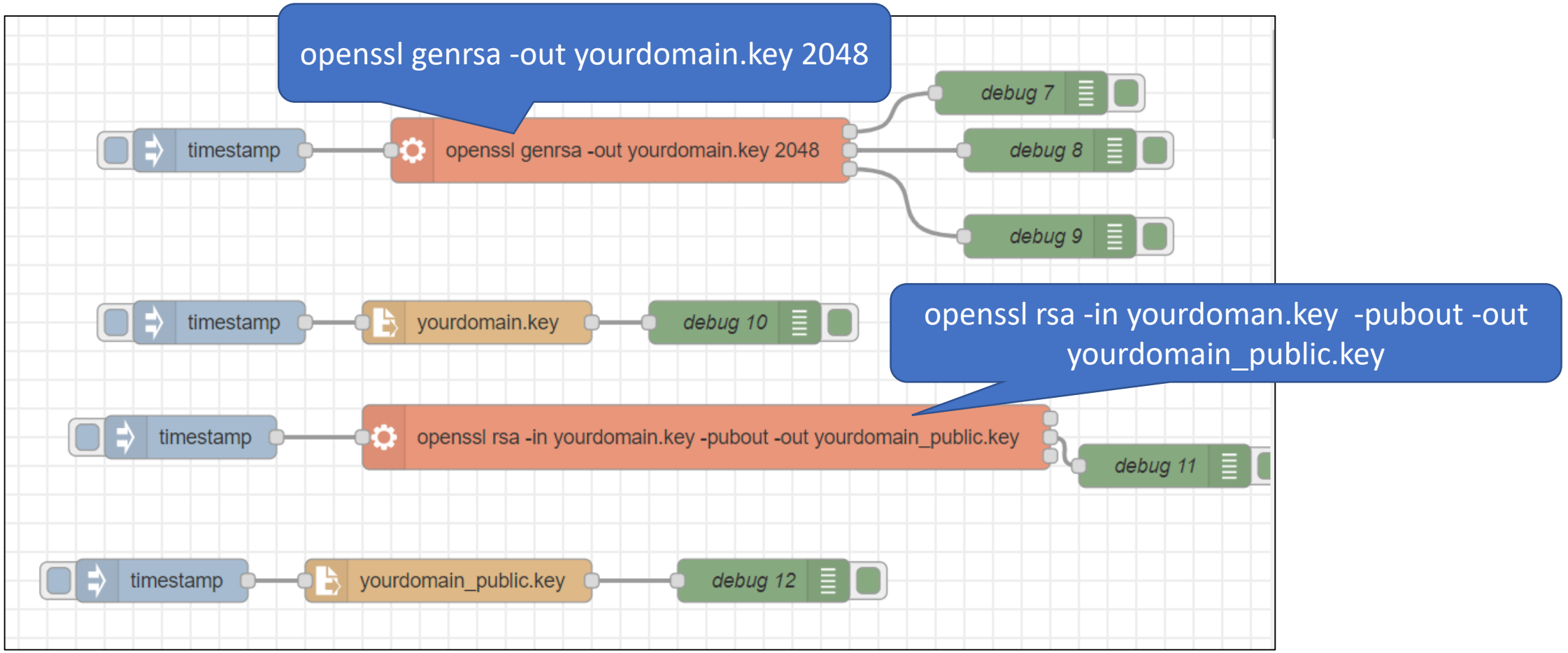
Exercise 13-4

- Generate a new pub/priv keypair

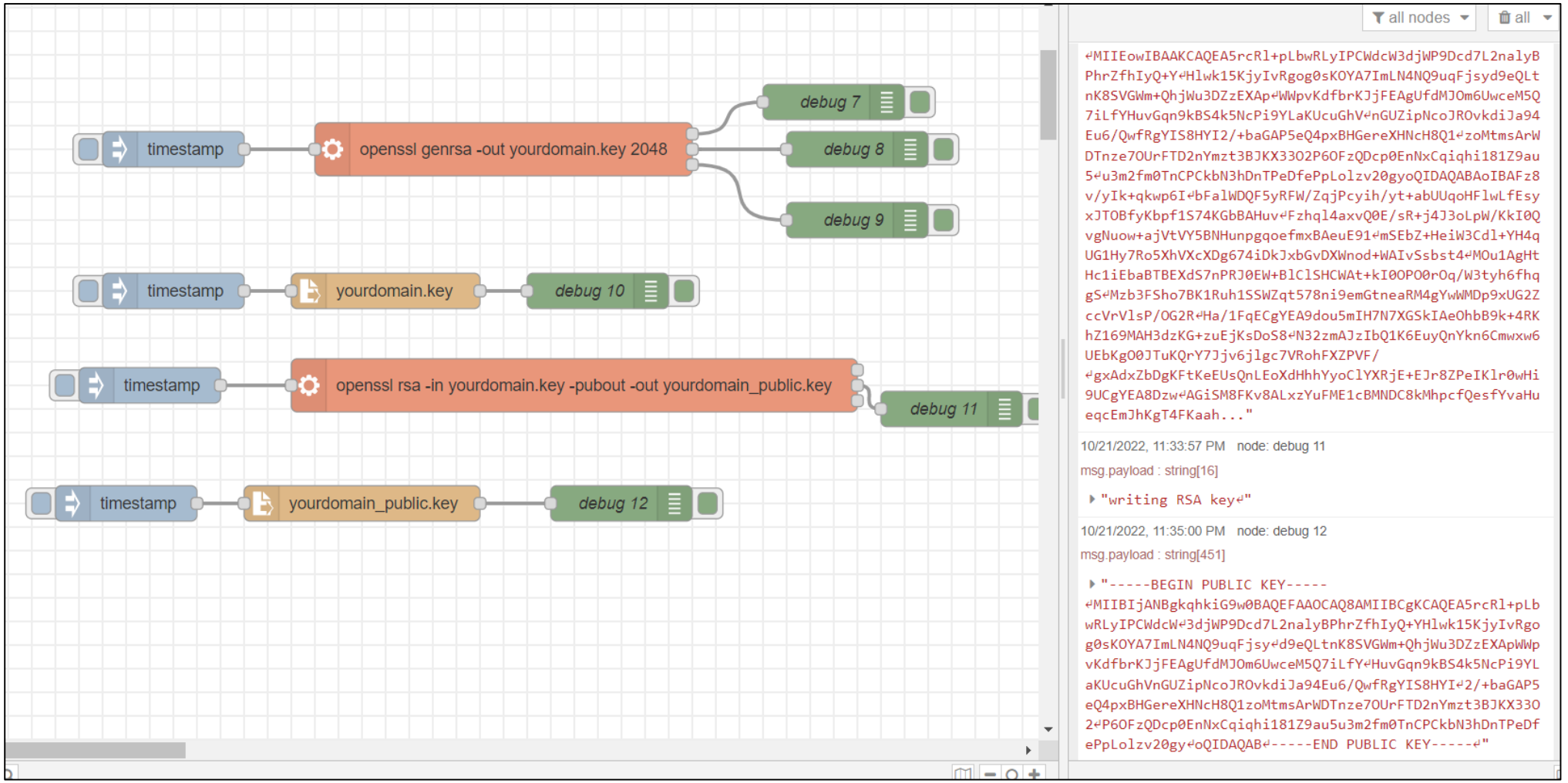
  openssl genrsa -out yourdomain.key 2048

  openssl rsa -in yourdoman.key -pubout -out yourdomain_public.key

Node-RED flows



Debug


timestamp
openssl genrsa -out yourdomain.key 2048
debug 7
debug 8
debug 9
timestamp
yourdomain.key
debug 10
timestamp
openssl rsa -in yourdomain.key -pubout -out yourdomain_public.key
debug 11
timestamp
yourdomain_public.key
debug 12
all nodes
all
↵MIIEowIBAAKCAQEA5rcRl+pLbwRLyIPCWdcW3djWP9Dcd7L2nalyB
PhrZfhIyQ+Y↵Hlwk15KjyIvRgog0sKOYA7ImLN4NQ9uqFjsyd9eQLt
nK8SVGWm+QhjWu3DZzEXAp↵WWpvKdfbrKJjFEAgUfdMJOm6UwceM5Q
7iLfYHuvGqn9kBS4k5NcPi9YLaKUcuGhV↵nGUZipNcoJROvkdiJa94
Eu6/QwfRgYIS8HYI2/+baGAP5eQ4pxBHGereXHNcH8Q1↵zoMtmsArW
DTnze7OUrFTD2nYmzt3BJKX33O2P6OFzQDcp0EnNxCqiqhi181Z9au
5↵u3m2fm0TnCPCkbN3hDnTPeDfePpLolzv20gyoQIDAQABAoIBAFz8
v/yIk+qkwp6I↵bFalWDQF5yRFW/ZqjPcyih/yt+abUUqoHFlwLfEsy
xJTOBfyKbpf1S74KGbBAHuv↵Fzhql4axvQ0E/sR+j4J3oLpW/KkI0Q
vgNuow+ajVtVY5BNHunpgqoefmxBAeuE91↵mSEbZ+HeiW3Cdl+YH4q
UG1Hy7Ro5XhVXcXDg674iDkJxbGvDXWnod+WAIvSsbst4↵MOu1AgHt
Hc1iEbaBTBEXdS7nPRJ0EW+BlClSHCWAt+kI0OPO0rOq/W3tyh6fhq
gS↵Mzb3FSho7BK1Ruh1SSWZqt578ni9emGtneaRM4gYwWMDp9xUG2Z
ccVrVlsP/OG2R↵Ha/1FqECgYEA9dou5mIH7N7XGSkIAeOhbB9k+4RK
hZ169MAH3dzKG+zuEjKsDoS8↵N32zmAJzIbQ1K6EuyQnYkn6Cmwxw6
UEbKgO0JTuKQrY7Jjv6jlgc7VRohFXZPVF/
↵gxAdxZbDgKFtKeEUsQnLEoXdHhhYyoClYXRjE+EJr8ZPeIKlr0wHi
9UCgYEA8Dzw↵AGiSM8FKv8ALxzYuFME1cBMNDC8kMhpcfQesfYvaHu
eqcEmJhKgT4FKaah..."
10/21/2022, 11:33:57 PM node: debug 11
msg.payload : string[16]
"writing RSA key↵"
10/21/2022, 11:35:00 PM node: debug 12
msg.payload : string[451]
"-----BEGIN PUBLIC KEY-----
↵MIIBIjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEA5rcRl+pLb
wRLyIPCWdcW↵3djWP9Dcd7L2nalyBPhrZfhIyQ+YHlwk15KjyIvRgo
g0sKOYA7ImLN4NQ9uqFjsy↵d9eQLtnK8SVGWm+QhjWu3DZzEXApWWp
vKdfbrKJjFEAgUfdMJOm6UwceM5Q7iLfY↵HuvGqn9kBS4k5NcPi9YL
aKUcuGhVnGUZipNcoJROvkdiJa94Eu6/QwfRgYIS8HYI↵2/+baGAP5
eQ4pxBHGereXHNcH8Q1zoMtmsArWDTnze7OUrFTD2nYmzt3BJKX33O
2↵P6OFzQDcp0EnNxCqiqhi181Z9au5u3m2fm0TnCPCkbN3hDnTPeDf
ePpLolzv20gy↵oQIDAQAB↵-----END PUBLIC KEY-----↵"