

DevOps Workshop

Using Azure & GitHub Action

N.L. Hsueh

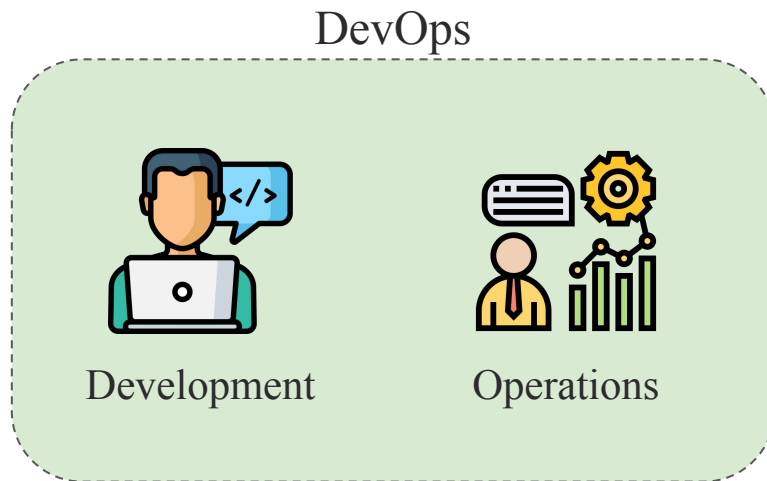
目錄

- 基本概念
- 常用工具工具
- 雲端支援- Azure

基本概念

DevOps

- 一種將開發 (Development) 和維運 (Operations) 融為一體的文化改革
- 經常使用自動化工具來促進合作改革
- 更快、更持續地交付產品



DevOps 運作方式

- 在DevOps的模型下，開發與維運團隊有時會合併成為一個團隊，讓工程師負責整個軟體開發生命週期中包含開發和測試、部署以及營運的工作。
- 團隊使用各種工具，將過往手動且緩慢的程序自動化。這些自動化工具也使工程師能獨力完成通常需要其他團隊協助的工作，如部署程式碼等。
- 對於每個團隊都能自由定義其獨特的工作流程。

DevOps 優點

- 速度
 - 更快進行版本更新, 適應市場需求
- 快速交付
 - 提升版本發行的頻率和速度
- 可靠性
 - 確保產品更新後的品質
- 擴展
 - 自動化和一致性協助管理開發、測試和生產環境
- 合作
 - 結合開發和維運團隊的工作流程, 節省交接時間
- 安全性
 - 將安全政策實例化為程式碼, 省去易出錯的安全配置環節

DevOps 現況

多個企業皆有提出其 DevOps 的流程, 如微軟、Cisco 等

- 微軟 (Microsoft)
 - 修正 bug 或實作功能 → 建立不同分支
 - 要求合併分支: 進行快速測試 → 審閱程式碼
 - 完成合併 → 部署程式碼

許多公司招募 DevOps 工程師, 如台達電、聯發科等



DevOps工程師_資訊處(台北)

台達電子工業股份有限公司
台北市內湖區 面議 (經常性薪資4萬/月含以上)

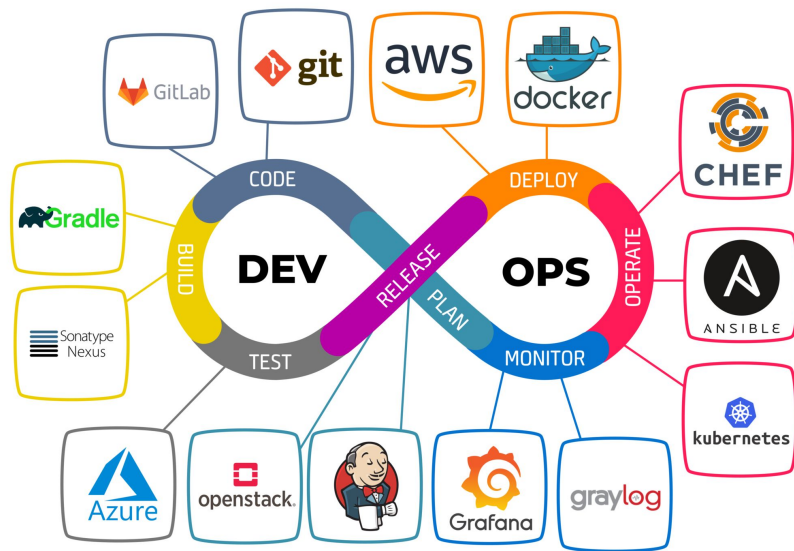
《Responsibilities》1. 參與應用程式部署工作, 以容器化為
主 Docker/K8S ; Legacy 系統則有 Tomcat, IIS 2. 參與 Azur
e DevOps CI/CD Pipelines 設計; 並維護及優化 3. 協助網...

2022/08/21
應徵人數: 1-5人 🔥

❤️ 應徵

流程

Plan	定義需求、追蹤 issue、專案管理
Code	軟體設計、程式碼建立
Build	使用自動化工具編譯
Test	手動或自動測試，確保程式碼品質
Release	管理軟體建置和版本，封裝程式碼
Deploy	發佈產品到正式的作業環境上
Operate	正式作業期間的管理軟體
Monitor	辨識和收集正式環境上的問題和資訊



常用工具

工具類別

- **需求和 issues 管理**: 管理開發的需求和待解決的問題
- **Source Code 管理**: 管理程式碼, 便於多人開發
- **建置和持續整合**: 管理專案建置和版本, 編譯並封裝程式碼
- **程式碼品質和測試**: 測試功能性、程式碼品質等等
- **部署**: 發佈版本, 管理已發佈的版本
- **紀錄和監控**: 紀錄問題, 監控硬體資源

需求和 issues 管理

- 建立開發任務和需解決的問題，分配任務給團隊成員，持續追蹤進度
- 常用工具
 - Trello



- Jira



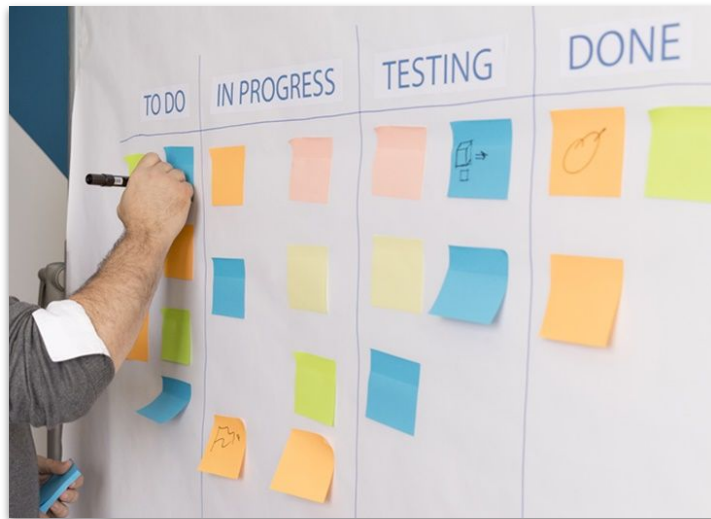
Trello

- 方便更動卡片位置和狀態
- 能在卡片中增加細節



其他方法：

- 便條紙空間有限, 無法及時調整



Trello

The image shows a screenshot of the Trello web interface with several Chinese annotations pointing to specific features:

- 設定標籤, 簡述任務**: Points to the top navigation bar and the task cards.
- 指派任務的負責成員**: Points to the user avatars on the task cards.
- 進度追蹤列表**: Points to the columns representing different stages of work (待辦事項, 進行中, 完成).
- 期限**: Points to the date indicator on a task card.
- 已完成的項數**: Points to the progress bar on a task card.
- 拖曳, 移動卡片**: Points to the task cards, indicating they can be moved between columns.

The interface includes a top navigation bar with 'Trello 工作區', a search bar, and a main workspace with columns for '待辦事項', '進行中', and '完成'. A red box highlights the '+ 新增卡片' button in the '待辦事項' column.

Trello - 新增卡片

The screenshot shows a Trello card titled "自動化測試" (Automated Testing) in the "進行中" (In Progress) list. The card is annotated with several callouts:

- 指派任務的負責成員** (Assign task responsible member): Points to the "成員" (Members) section, which shows two user avatars and a plus sign.
- 卡片名稱** (Card title): Points to the card title "自動化測試".
- 設定標籤** (Set label): Points to the "標籤" (Labels) section, which shows a green label and a plus sign.
- 設定任務的期限** (Set task deadline): Points to the "到期日" (Due date) section, which shows a calendar icon and the date "8月13日 晚上11點45分".
- 新增至卡片** (Add to card): A red box highlights the right-hand sidebar menu, which includes options like "成員", "標籤", "待辦清單", "日期", "附件", "封面", and "自訂欄位".
- 細分任務 建立待辦清單 可勾選已完成的任務** (Subdivide tasks, create to-do list, can check off completed tasks): Points to the "待辦清單" (To-do list) section, which shows a progress bar at 50% and a list of tasks: "單元測試" (checked), "程式碼品質" (unchecked), and "增加項目" (Add item).

Source Code 管理

- 管理程式碼的版本, 方便多人開發和維護

- 常用工具

- git



- SVN (SubVersion)



- 線上 git 專案管理系統
包含 git server

- GitHub

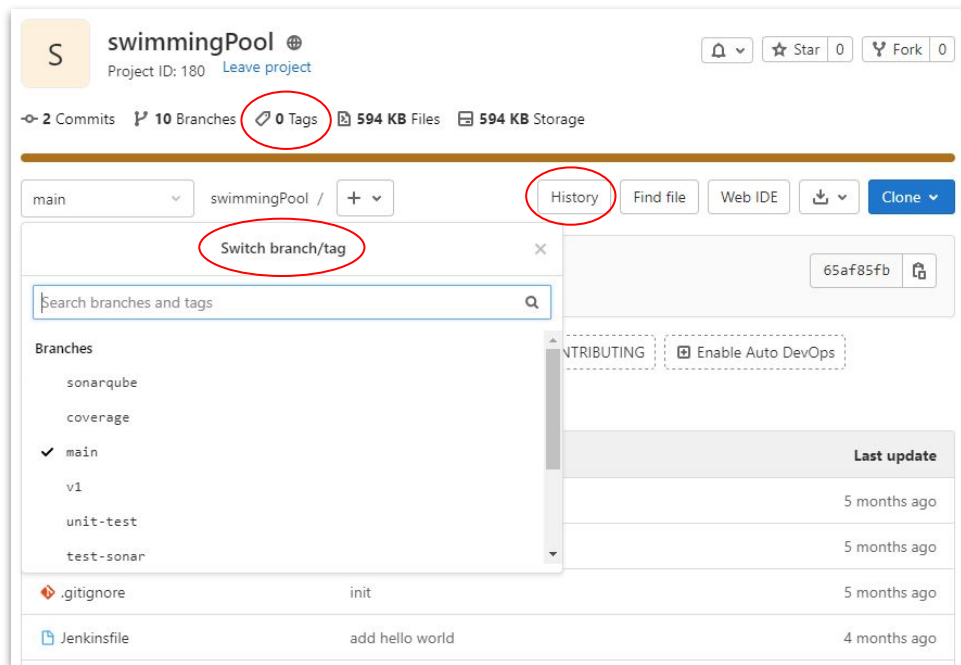


- GitLab



GitLab

- git 版本控制系統
 - 查看程式碼的歷史版本
 - 建立標籤 (Tags)
 - 便於多人同時開發專案
- 專案管理
 - 建立多個專案
 - 專案下的議題 (issue) 管理



GitLab

列出所有參與的專案

專案中的角色

新增專案

The screenshot shows the GitLab 'Projects' page. At the top right, there is a 'New project' button. Below it, there are filters for 'Your projects' (16), 'Stared projects' (0), and 'Explore projects'. A search bar and a 'Name' dropdown are also present. The main content is a list of projects, each with a letter icon, a name, a role (Maintainer), star and fork counts, and an update date. One project, 'teacher1 / ex-swim', is highlighted with a red box and has a subtitle 'for 實驗範例 的專案'. An arrow points from the 'Maintainer' role of the first project to the text '專案中的角色'. Another arrow points from the 'New project' button to the text '新增專案'.

Icon	Project Name	Role	Stars	Forks	Updated
B	teacher1 / blank	Maintainer	0	0	Updated 7 months ago
C	usertest / coverage	Maintainer	0	0	Updated 6 months ago
E	test1 / ex-swim	Maintainer	0	0	Updated 4 months ago
E	teacher1 / ex-swim for 實驗範例 的專案	Maintainer	0	0	Updated 3 months ago
G	teacher1 / Gradle 使用 Gradle 模板	Maintainer	0	0	Updated 7 months ago
L	student1 / lab-ex 實驗範例 課程的專案	Maintainer	0	0	Updated 5 months ago

GitLab - 專案頁面

專案的基本資訊

程式碼版本紀錄: 查看程式碼改動的歷史

The screenshot shows the GitLab project page for 'ex-swim'. At the top, it displays the project name, ID (168), and statistics: 1 Commit, 16 Branches, 0 Tags, 522 KB Files, and 522 KB Storage. Below this, the current branch is 'main' and the repository path is 'ex-swim'. There are buttons for 'History', 'Find file', 'Web IDE', and 'Clone'. A commit history table is visible, showing files like 'app', 'gradle/wrapper', '.gitignore', 'Jenkinsfile', 'gradlew', 'gradlew.bat', and 'settings.gradle', all with 'init' as the last commit and '5 months ago' as the last update. Callout boxes point to these elements: '專案的基本資訊' points to the top statistics; '程式碼版本紀錄: 查看程式碼改動的歷史' points to the 'History' button; 'clone 專案: 將程式碼下載至本機上進行開發' points to the 'Clone' button; '提交資訊: 為每一次提交註記' points to the 'Last commit' column in the table; '檔案更新時間' points to the 'Last update' column; '分支名稱: 多分支便於多人或不同功能的開發' points to the 'main' branch dropdown; and '專案內的資料夾及檔案' points to the file list table.

1 Commit 16 Branches 0 Tags 522 KB Files 522 KB Storage

for 實驗範例 的專案

main ex-swim / +

History Find file Web IDE Clone

init
teacher1 authored 5 months ago

6dba4127

Add README Add LICENSE Add CHANGELOG Add CONTRIBUTING Add Kubernetes cluster Set up CI/CD

Name	Last commit	Last update
app	init	5 months ago
gradle/wrapper	init	5 months ago
.gitignore	init	5 months ago
Jenkinsfile	init	5 months ago
gradlew	init	5 months ago
gradlew.bat	init	5 months ago
settings.gradle	init	5 months ago

分支名稱:
多分支便於多人或
不同功能的開發

clone 專案:
將程式碼下載至
本機上進行開發

提交資訊:
為每一次提交註記

檔案更新時間

專案內的資料夾
及檔案

建置和持續整合

- 管理專案建置和版本, 編譯並封裝程式碼
- 專案自動化建構工具

- Gradle



- Maven



- 持續整合的工具

- Jenkins



- Travis CI



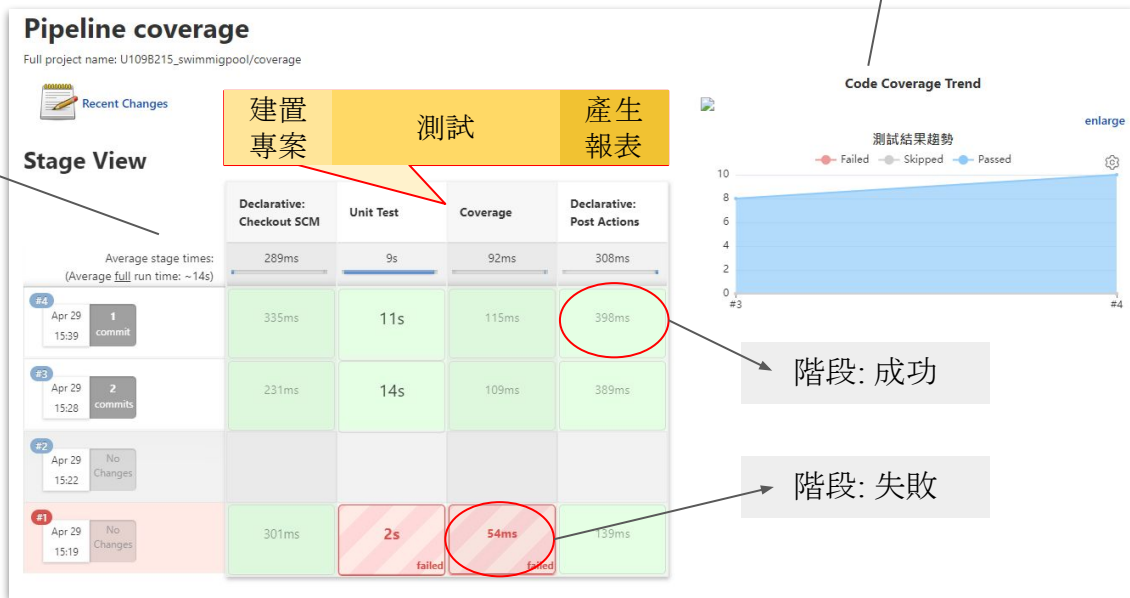
- CircleCI



Jenkins

- 自動建置專案、進行測試、產生分析報表、進行通知等
- 自動化流程降低工作量和時間成本

分階段的自動化流程



測試結果報告

Code Coverage Trend

測試結果趨勢

階段: 成功

階段: 失敗

程式碼品質和測試

- 程式碼品質、功能、安全性、壓力測試等等
- 常用工具
 - JUnit: Java 的單元測試框架
 - pytest: Python 測試框架
 - Selenium: 自動化網頁測試框架
 - SonarQube: 程式碼品質管理平台
 - JMeter: 壓力測試工具

JUnit 

 pytest

 Selenium

sonarqube 

 APACHE
JMeter™

SonarQube

- 程式碼檢測及品質管理系統
- 支援多種程式語言的分析檢測
- 提供程式碼重複性、bug、測試覆蓋率等報告

專案的錯誤
(bug、漏洞等)

錯誤類型

Overview Issues Security Hotspots Measures Code Activity

Project Settings Project Information

1 / 37 issues 6h 48min effort

src/main/java/main/Discount.java

Type	Severity	Effort
Code Smell	Minor	10min effort
Code Smell	Minor	10min effort
Code Smell	Minor	10min effort
Code Smell	Major	10min effort
Code Smell	Minor	10min effort

部署

- 發佈產品至正式環境, 管理已發佈的版本
- 會借助到持續整合工具 (Jenkins, Travis CI ...)
- 容器化服務 (獨立分割**基礎設施**)

- Docker



- Kubernetes



- 配置工具

- Ansible



- Chef

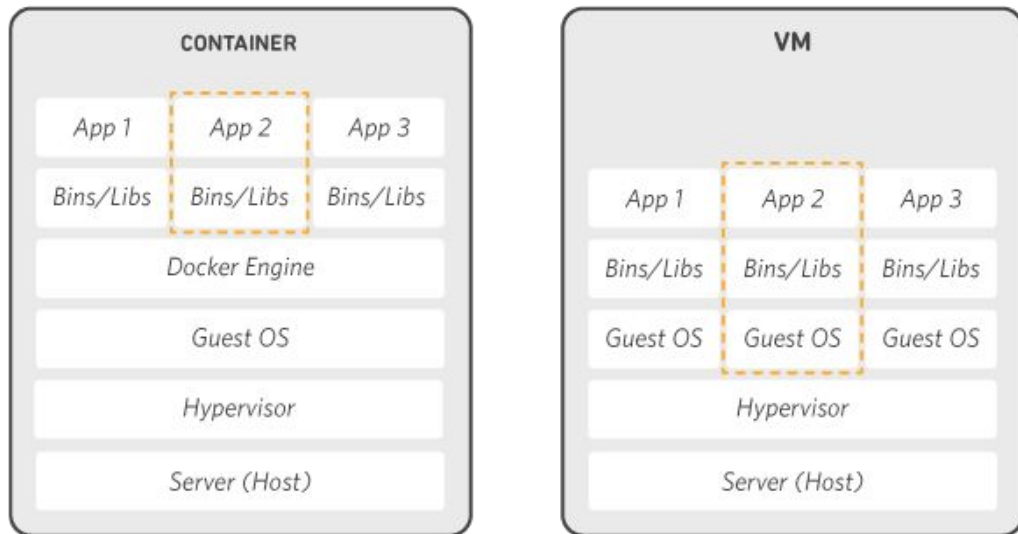


- Puppet



Docker

- 獨立分割基礎設施 (infrastructure), 並封裝成**容器**, 提高交付軟體的速度
 - **容器** 類似於虛擬機器 (VM), 將**作業系統層**虛擬化



紀錄和監控

- 紀錄客戶端的問題, 監控硬體資源
- 常用工具
 - Prometheus: 監控預警框架



- Grafana: 監控資料的圖表化



Grafana

- 將監控資料圖表化
 - 支援的資料來源: Prometheus、Graphite 等等
- 多種視覺化指標和展示方式 (折線圖、熱點圖、儀表圖等等)



雲端支援

雲端支援 - AWS

- 全受管服務
 - 不用自行設定、安裝和操作基礎設施。
- 為擴展而建置
 - 可以使用 AWS 服務管理單一執行個體或大量擴展。
- 可程式化
 - 可以透過 AWS 命令列界面或透過 API 和 SDK 來使用每個服務。
- 自動化
 - 使用 AWS 服務自動化手動任務或程序，例如部署、開發與測試工作流程、容器管理以及組態管理。
- 安全
 - 可更精細地控制可存取資源的人員，以及其存取資源的方式。

雲端支援 - Azure

- 提供多種解決方案的架構
- 在每個流程皆提供多樣性的工具, 以便因應各種不同的工作流程。

AWS CodePipeline

- [Getting started with CodePipeline](#)
- [CodePipeline tutorials](#)

I want to use the wizard to create a pipeline that uses CodeDeploy to deploy a sample application from an Amazon S3 bucket to Amazon EC2 instances running Amazon Linux. After using the wizard to create my two-stage pipeline, I want to add a third stage.	See Tutorial: Create a simple pipeline (S3 bucket) .
I want to create a two-stage pipeline that uses CodeDeploy to deploy a sample application from a CodeCommit repository to an Amazon EC2 instance running Amazon Linux.	See Tutorial: Create a simple pipeline (CodeCommit repository) .
I want to add a build stage to the three-stage pipeline I created in the first tutorial. The new stage uses Jenkins to build my application.	See Tutorial: Create a four-stage pipeline .
I want to set up a CloudWatch Events rule that sends notifications whenever there are changes to the execution state of my pipeline, stage, or action.	See Tutorial: Set up a CloudWatch Events rule to receive email notifications for pipeline state changes .
I want to create a pipeline with a GitHub source that builds and tests an Android app with CodeBuild and AWS Device Farm.	See Tutorial: Create a pipeline that builds and tests your Android app with AWS Device Farm .
I want to create a pipeline with an Amazon S3 source that tests an iOS app with AWS Device Farm.	See Tutorial: Create a pipeline that tests your iOS app with AWS Device Farm .
I want to create a pipeline that deploys my product template to AWS Service Catalog.	See Tutorial: Create a pipeline that deploys to AWS Service Catalog .
I want to use sample templates to create a simple pipeline (with an Amazon S3, CodeCommit, or GitHub source) using the AWS CloudFormation console.	See Tutorial: Create a pipeline with AWS CloudFormation .
I want to create a two-stage pipeline that uses CodeDeploy and Amazon ECS for blue/green deployment of an image from an Amazon ECR repository to an Amazon ECS cluster and service.	See Tutorial: Create a pipeline with an Amazon ECR source and ECS-to-CodeDeploy deployment .
I want to create a pipeline that continuously publishes my serverless application to the AWS Serverless Application	See Tutorial: Create a pipeline that publishes your serverless

Azure Education 申請

歡迎使用 Azure!

沒有訂用帳戶嗎。請查看下列選項。



從 Azure 免費試用開始

取得美金 \$200 元的免費點數，您可用於購買 Azure 產品和服務，外加 12 個月的熱門免費服務。

[開始](#)

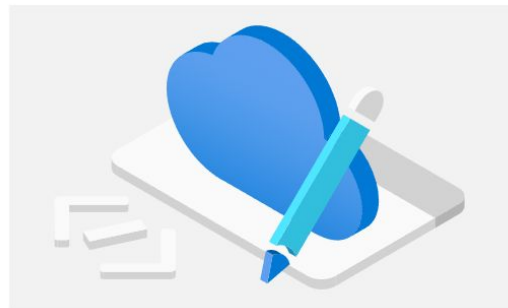


管理 Azure Active Directory

使用 Azure Active Directory 管理存取、設定智慧型原則，以及增強安全性。

[檢視](#)

[深入了解](#)



存取學生權益

在驗證學術狀態後取得免費軟體、Azure 點數或存取 Azure Dev Tools for Teaching。

[瀏覽](#)

[深入了解](#)

Azure Education 申請

<https://azure.microsoft.com/zh-tw/free/students/>

使用 Azure 學生版免費在雲端建置

每年使用您的大學或學校電子郵件註冊並續約。您是學生。

開始免費使用

[深入了解適用性 >](#)

從 \$100 Azure
點數開始使用

不需要信用卡

+

免費服務

取得免費的熱門服務，同時取得點數。

Azure Education 申請

- 點擊左邊導航列的"開始使用"

Microsoft Azure 搜尋資源、服務及文件 (G+)

首頁 > Education | 概觀

概觀

開始使用

學習資源

角色

軟體

學習

需要協助嗎?

支援

您是學生嗎? 請兌換 Azure 學生版供應項目, 取得其他免費權益。 →

開始使用 Azure 學生版打造未來!

學生有資格取得 Azure 學生版提供的美金 \$100 元點數。

立即取得您的 Azure 點數

探索 Azure 角色 [查看所有角色](#)

Data Scientist

AI Engineer

Developer

Azure Education 申請

- 點擊中間的"啟用供應"項目按鈕

歡迎使用 Azure Education Hub!

無論您是剛入門的學生、教授進階工作負載的授課者，還是只是對培養雲端技能有興趣，我們都有您所需的開發資源。 [深入了解](#)



探索 Azure 角色

探索 Azure 角色以開始建立關鍵雲端技能，您必須在先進的技術職業生涯中取得成功。

啟動您的職業

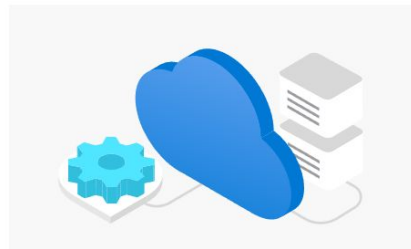


兌換學生點數

開始使用 Azure 學生版打造未來! 當您啟用 Azure 學生版供應項目時，即可取得美金 \$100 元的 Azure 點數。

[深入了解](#)

啟用供應項目



下載免費軟體

免費取得專業開發人員工具的完整版本，以協助您建置程式碼，並在您的 Azure 訂用帳戶上部署。

下載軟體

Azure Education 申請

- 若使用**非逢甲 o365 帳號**登入, 需要驗證學校信箱, 建議使用學校 o365 信箱。

學生驗證



必須進行學術驗證

您登入的帳戶未經過驗證，無法存取供應項目的權益。請使用下方表單進行驗證。

驗證方法

學校電子郵件地址



請輸入您的學校電子郵件地址。若您的學校存在於我們的資料庫中，則會透過電子郵件傳送驗證連結給您。

您的學校電子郵件地址僅供驗證目的之用，若為其他目的，請使用 Microsoft 帳戶電子郵件地址。

學校電子郵件地址

重新輸入學校電子郵件地址

驗證學術狀態

Azure Education 申請

- 使用 o365 帳號登入(學術驗證完成)後, 勾選第一個方框, 按 "下一步", 直接按 "註冊" 即可完成註冊 Azure 帳戶。

協議 ^

我同意 [客戶合約](#) 與 [隱私權聲明](#)。

我願意收到 Microsoft 寄給我的 Azure 及其他 Microsoft 產品與服務相關資訊、祕訣及優惠, 並同意 Microsoft 與精選的合作夥伴分享我的資訊, 讓我能收到其產品與服務的相關資訊。

下一步

稅務資訊 v

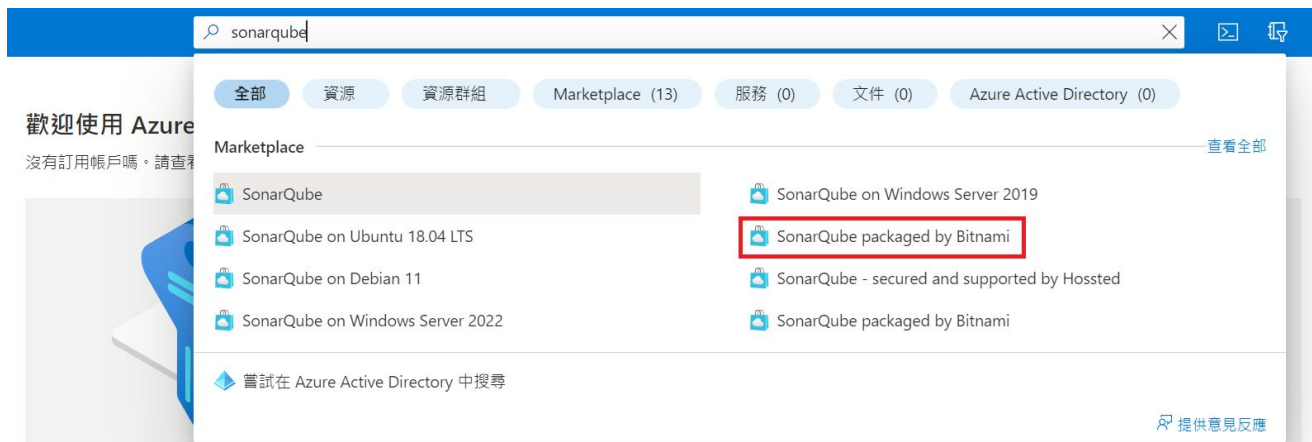
註冊

Azure 學生版

獲得價值 \$100 美元的 Azure 點數, 並免費存取熱門雲端服務及 Visual Studio Code 等開發人員工具

架設 SonarQube

- 進到 [Azure 首頁](#)後, 上方搜尋框輸入 "sonarqube", 選取 "SonarQube packaged by Bitnami"



從 Azure 免費試用開始

取得美金 \$200 元的免費點數, 您可用於購買 Azure 產品和服務, 外加 12 個月的熱門免費服務。

開始

管理 Azure Active Directory

使用 Azure Active Directory 管理存取、設定智慧型原則, 以及增強安全性。

檢視

深入了解

存取學生權益

在驗證學術狀態後取得免費軟體、Azure 點數或存取 Azure Dev Tools for Teaching。

瀏覽

深入了解

架設 SonarQube

[首頁](#) >

SonarQube packaged by Bitnami  

Bitnami




SonarQube packaged by Bitnami  [新增至我的最愛](#)

Bitnami

★ 5.0 (3 Marketplace 評分) | ★ 5.0 (2 個外部評論)

方案

SonarQube packaged by Bitnami 

建立

要以程式設計方式部署嗎? [開始使用](#)

[首頁](#) > [SonarQube packaged by Bitnami](#) >

建立虛擬機器 ...

[基本](#) [磁碟](#) [網路](#) [管理](#) [Monitoring](#) [進階](#) [標籤](#) [檢閱 + 建立](#)

請建立執行 Linux 或 Windows 的虛擬機器。請從 Azure Marketplace 選取映像，或使用您自己的自訂映像。完成 [基本] 索引標籤，然後檢閱並建立，以使用預設參數佈建虛擬機器，或檢閱每個索引標籤進行完全的自訂。 [深入了解](#)

i 此訂用帳戶可能不符合在特定區域部署特定大小 VM 的資格。

專案詳細資料

選取用以管理部署資源及成本的訂用帳戶。使用像資料夾這樣的資源群組來安排及管理您的所有資源。

訂用帳戶 *	<input type="text" value="Azure for Students"/>
資源群組 *	<input type="text" value="(新增) 資源群組"/>

[新建](#)

執行個體詳細資料

虛擬機器名稱 *	<input type="text"/>
區域 *	<input type="text" value="(Asia Pacific) Korea Central"/>
可用性選項	<input type="text" value="不需要基礎結構備援"/>
安全性類型	<input type="text" value="標準"/>
映像 *	<input type="text" value="SonarQube packaged by Bitnami - Gen1"/>

[查看所有映像](#) | 設定 VM 世代

[檢閱 + 建立](#)[< 上一步](#)[下一步: 磁碟 >](#)

架設 SonarQube

- 需要進行基本設定才能建立此虛擬機
 - 專案詳細資料
 - 執行個體詳細資料
 - Administrator 帳戶

架設 SonarQube

- 訂用帳戶**不需更改**
- 資源群組點擊"新建"
 - 名稱**隨意**
- 虛擬機器名稱**隨意**
- 區域**隨意**

專案詳細資料

選取用以管理部署資源及成本的訂用帳戶。使用像資料夾這樣的資源群組來安排及管理您的所有資源。

訂用帳戶 * ⓘ

Azure for Students

資源群組 * ⓘ

(新增) SonarQubeVM

新建

執行個體詳細資料

虛擬機器名稱 * ⓘ

SonarQubeVM

區域 * ⓘ

(Asia Pacific) Korea Central

架設 SonarQube

- 使用者名稱與密碼設定完成後按下"**檢閱+建立**"
- 跳轉後再按一次**建立**

Administrator 帳戶

驗證類型 ①

SSH 公開金鑰

密碼

使用者名稱 * ①

✘ 值不得為空白。

✘ 使用者名稱必須包含字母、數字、連字號和底線，且不能以連字號或數字開頭。

✘ 此值的長度必須介於 1 和 64 個字元之間。

密碼 * ①

✘ 值不得為空白。

✘ 密碼必須要有下列項目中的 3 項: 1 個小寫字元、1 個大寫字元、1 個數字與 1 個特殊字元。

✘ 此值的長度必須介於 12 和 72 個字元之間。

確認密碼 * ①

✘ 值不得為空白。

✘ [密碼] 和 [確認密碼] 必須相符。

檢閱 + 建立

< 上一步

下一步: 磁碟 >

架設 SonarQube

- 建立完成, 點選"前往資源"

首頁 >

CreateVm-bitnami.sonarqube-6-4-20220913120352 | 概觀 ✨ ...

部署

搜尋 (Ctrl+/) << 刪除 取消 重新部署 下載 重新整理

概觀 輸入 輸出 範本

歡迎您提供寶貴的意見! →

您的部署已完成

部署名稱: CreateVm-bitnami.sonarqube-6-4-20220913120352 開始時間: 13/9/2022 下午12:11:00
訂用帳戶: Azure for Students 相互關聯識別碼: 1e46e35a-4180-42ea-881e-9b030302ad13
資源群組: SonarQubeVM

部署詳細資料

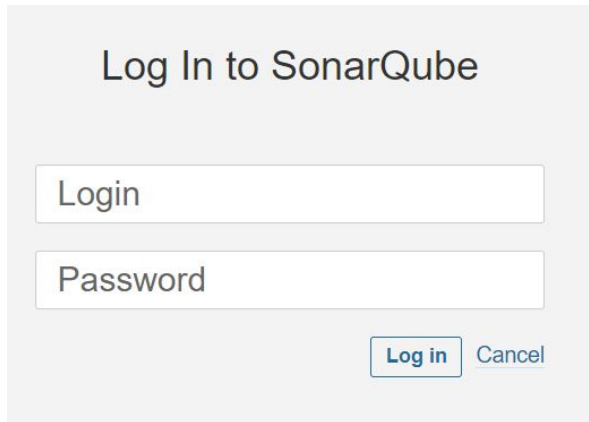
後續步驟

設定自動關機 建議
監視 VM 健康情況、效能與網路相依性 建議
在虛擬機器內執行指令碼 建議

前往資源 建立另一個 VM

架設 SonarQube

- 看到此畫面 **未必架設完成**，需等待10-20分鐘，直到虛擬機完成佈署。
- 若要檢查可將此公用 IP 複製後貼到網址列，成功執行便可看見如右圖畫面。



Microsoft Azure 搜尋資源、服務及文件 (G+)

首頁 >

SonarQubeVM 虛擬機器

搜尋 (Ctrl+/) << 連接 > 啟動 重新啟動 停止 擷取 刪除 重新整理 在行動裝置中開啟 CLI / PS 意見反應

概觀

- 活動記錄
- 存取控制 (IAM)
- 標籤
- 診斷並解決問題

設定

- 網路

程式集

資源群組 (移動) : SonarQubeVM

狀態 : 正在執行

位置 : Korea Central

訂用帳戶 (移動) : Azure for Students

訂用帳戶識別碼 : 99a4dca6-27ca-441f-8772-b11b28590ea3

標籤 (編輯) : 按一下這裡即可新增標籤

作業系統 : Linux (debian 11)

大小 : Standard B2s (2 vcpu · 4 GiB 記憶體)

公用 IP 位址 : 20.194.33.30

虛擬網路/子網路 : SonarQubeVM-vnet/default

DNS 名稱 : 未設定

架設 SonarQube

- 登入帳號為"admin"
- 密碼從左邊導航列找到 "開機診斷" → "序列記錄檔"



SonarQubeVM | 開機診斷 ☆ ...

虛擬機器

搜尋 (Ctrl+/) << 重新整理 設定 疑難排解

警訊
計量
診斷設定
記錄檔
連線監視器 (傳統)
活頁簿

自動化
工作 (預覽)
匯出範本

說明
資源健康狀態
開機診斷
效能診斷
VM Inspector (預覽)
重設密碼
重新部署 + 重新套用
序列主控台
疑難排解連線
支援 + 疑難排解

螢幕擷取畫面 **序列記錄檔**

更新於: 2022年9月13日星期二 上午4:36:21 UTC [下載螢幕擷取畫面](#)

```
bebian@Linux 11: SonarQubeVM tty1
SonarQubeVM login: [ 55.1347371 hu_balloon: Box_dramatic memory size: 40% MB
```


架設 SonarQube

- 找到記錄檔中如右圖部分，
即為首次登入密碼。
- 或是帳號密碼皆為 admin



SonarQubeVM | 開機診斷 ☆ ...

搜尋 (Ctrl+/) << 重新整理 設定 疑難排解

螢幕擷取畫面 序列記錄檔

更新於: 2022年9月13日星期二 上午4:29:21 UTC 下載序列記錄檔

```
[ 18.317049] bitnami[635]: resize2fs 1.46.2 (28-Feb-2021)
[ 18.488750] bitnami[635]: The filesystem is already 7831547 (4k) blocks long. Nothing to do!
[ 18.492308] bitnami[635]: ## 2022-09-13 04:11:49+00:00 ## INFO ## Running /opt/bitnami/var/init/
pre-start/040_hostname...
[ 18.496730] bitnami[635]: ## 2022-09-13 04:11:49+00:00 ## INFO ## Running /opt/bitnami/var/init/
pre-start/050_swap_file...
[ 18.535314] bitnami[635]: ## 2022-09-13 04:11:49+00:00 ## INFO ## Running /opt/bitnami/var/init/
pre-start/060_check_if_demo_machine...
[ 18.747060] bitnami[635]: ## 2022-09-13 04:11:49+00:00 ## INFO ## Running /opt/bitnami/var/init/
pre-start/070_change_boot_log_permissions...
[ 18.752000] bitnami[635]: ## 2022-09-13 04:11:49+00:00 ## INFO ## Running /opt/bitnami/var/init/
pre-start/080_get_default_passwords...
[ 18.996362] bitnami[635]: #####
[ 18.998576] bitnami[635]: #
[ 19.001371] bitnami[635]: # Setting Bitnami application password to 'oywo8cRKhezK'
[ 19.002197] bitnami[635]: # (the default application username is 'admin')
[ 19.003820] bitnami[635]: #
[ 19.004238] bitnami[635]: #####
[ 19.246553] bitnami[629]: ## 2022-09-13 04:11:49+00:00 ## INFO ## Running first-boot...
```

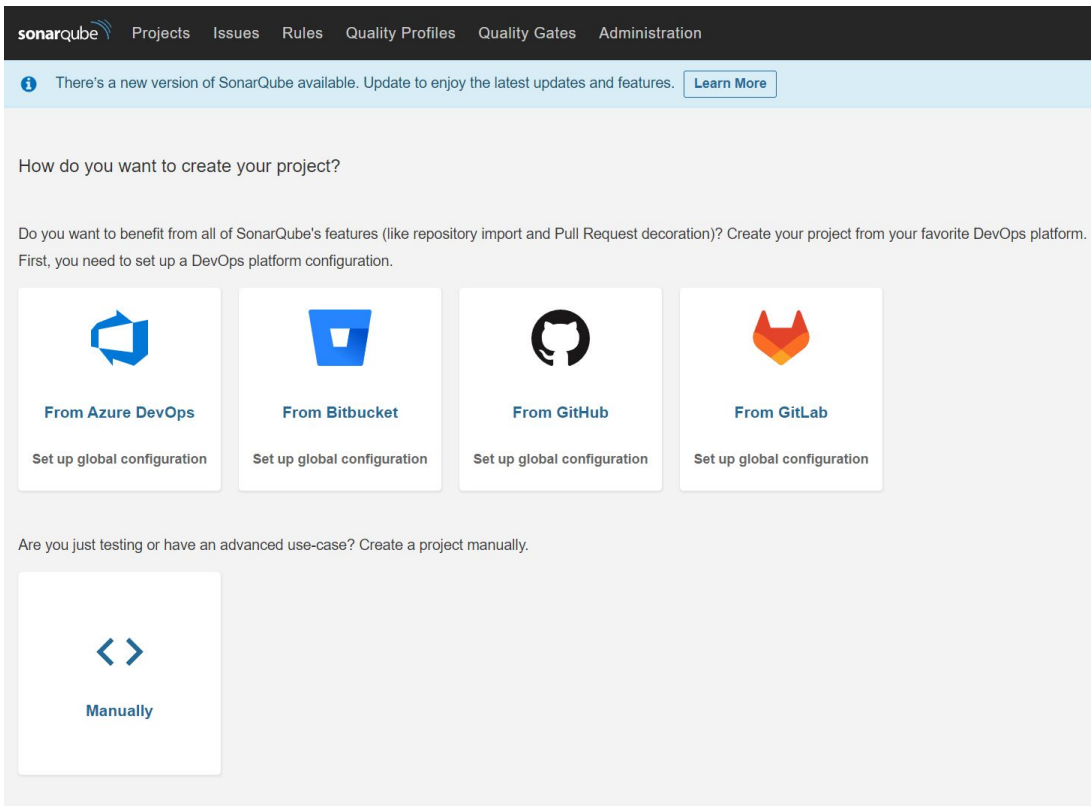
Debian GNU/Linux 11 SonarQubeVM ttyS0

SonarQubeVM login: [20.266219] apt-setup[695]: Fetched 23.7 MB in 5s (4,733 kB/s)

```
[ 20.991202] apt-setup[695]: Reading package lists...
[ 21.828053] bitnami[1362]: 2022-09-13T04:11:52.576Z - info: Saving configuration info to disk
[ 22.182414] bitnami[1362]: 2022-09-13T04:11:52.931Z - info: Saving configuration info to disk
[ 22.198105] bitnami[1362]: 2022-09-13T04:11:52.939Z - warn: No peerAddress provided. Skipping hosts
```

架設 SonarQube

- 看到如右畫面即完成架設。



The screenshot shows the SonarQube web interface. At the top, there is a navigation bar with the SonarQube logo and links for Projects, Issues, Rules, Quality Profiles, Quality Gates, and Administration. Below the navigation bar, there is a notification banner that says "There's a new version of SonarQube available. Update to enjoy the latest updates and features." with a "Learn More" button. The main content area is titled "How do you want to create your project?". Below this, there is a question: "Do you want to benefit from all of SonarQube's features (like repository import and Pull Request decoration)? Create your project from your favorite DevOps platform. First, you need to set up a DevOps platform configuration." There are four options for creating a project from a DevOps platform: "From Azure DevOps", "From Bitbucket", "From GitHub", and "From GitLab". Each option has a corresponding icon and a "Set up global configuration" link. Below these options, there is a question: "Are you just testing or have an advanced use-case? Create a project manually." and a "Manually" button with a code icon.

sonarqube Projects Issues Rules Quality Profiles Quality Gates Administration

There's a new version of SonarQube available. Update to enjoy the latest updates and features. [Learn More](#)

How do you want to create your project?

Do you want to benefit from all of SonarQube's features (like repository import and Pull Request decoration)? Create your project from your favorite DevOps platform. First, you need to set up a DevOps platform configuration.

From Azure DevOps
Set up global configuration

From Bitbucket
Set up global configuration

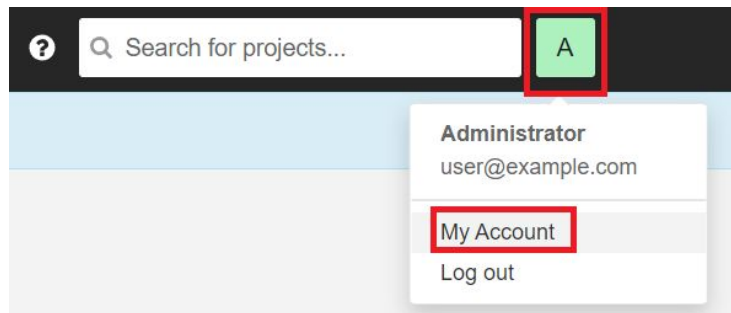
From GitHub
Set up global configuration

From GitLab
Set up global configuration

Are you just testing or have an advanced use-case? Create a project manually.

Manually

架設 SonarQube



[Profile](#) [Security](#) [Notifications](#) [Projects](#)

- 更改密碼流程
 - 點擊右上角頭像
 - 選擇 "My Account"
 - 選擇 "Security"
 - 往下拉即可看到更改密碼的欄位

A screenshot of the "Enter a new password" form in SonarQube. The form has three input fields: "Old Password *", "New Password *", and "Confirm Password *". Below the fields is an "Update" button. A note above the fields states "All fields marked with * are required".

Azure DevOps Starter

- 透過 Azure DevOps Starter 來自動部署專案到 Azure

Azure 服務



建立資源



DevOps Starter



快速入門中心



虛擬機器



應用程式服務

Azure DevOps Starter

首頁 >

DevOps Starter

預設目錄

+ 建立

管理檢視

重新整理

匯出

篩選任何欄位...

訂用帳戶 等於 全部



沒有 DevOps starter 可顯示

請嘗試變更或清除您的篩選。


建立 DevOps starter








深入了解

or

Azure DevOps Starter

Start fresh with a new application

 Setting up DevOps starter with GitHub, change settings [here](#)

 .NET New Web App using ASP.NET or ASP.NET Core, or a new IoT app	 Node.js New Web app using Node.js, Express.js or Sails.js, or a new IoT app	 PHP New Web app using simple PHP
 Static Website New static website using HTML, CSS, and JavaScript	 Python  New Web App using Bottle, Django, or Flask	 Ruby New Web App using Ruby on Rails


We are continuously adding support for more scenarios. Stay tuned!

[Next: Framework >](#)


Azure DevOps Starter



Choose an application framework

 Simple Python App

Simple python web apps and services

 Flask

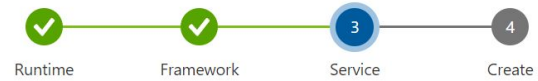
Python web framework for building web apps and services

 Django 



Popular Python web framework for building web apps and services

< Previous **Next: Service >**

Azure DevOps Starter



Select an Azure service to deploy the application

 Linux Web App <input checked="" type="checkbox"/>	 Web App for Containers
Fully managed compute platform on Linux for web applications and websites.	Fully managed compute platform on Linux for deploying and running containerized web applications.

Don't see a service you're looking for? We're continuously adding support for more

< Previous **Next: Create >**

Azure DevOps Starter

 Azure needs permission to access your GitHub account to create the workflow

Authorize

Select Repository and Subscription

Ready to deploy Django app to Azure Linux Web App.

Organization *

Repository *

Subscription * ⓘ

Web app name * ⓘ .azurewebsites.net

Location ⓘ

Pricing tier: S1 Standard (1 Core, 1.75 GB RAM)

[Additional settings](#)

By continuing, you agree to the [Terms of Service](#) and the [Privacy Statement](#).

Additional settings

Web App on Linux

Resource group * ⓘ

Application Insights Location ⓘ



Pricing tier ⓘ

[< Previous](#)

[Review + Create](#)

Azure DevOps Starter

Home

 Deploy_DevOps_Project_fcu-bmi-calculator | 概觀  ...

部署

搜尋 (Ctrl+)




 刪除  取消  重新部署  下載  重新整理

 概觀

 輸入

 輸出

 範本

 歡迎您提供寶貴的意見! →

... 正在部署



您的部署已完成



部署名稱: Deploy_DevOps_Project_fcu-bmi-calculator
訂用帳戶: [Azure for Students](#)
資源群組: [VstsRG-fcu-bmi-calculator-63bc](#)

開始時間: 13/9/2022 下午6:23:55

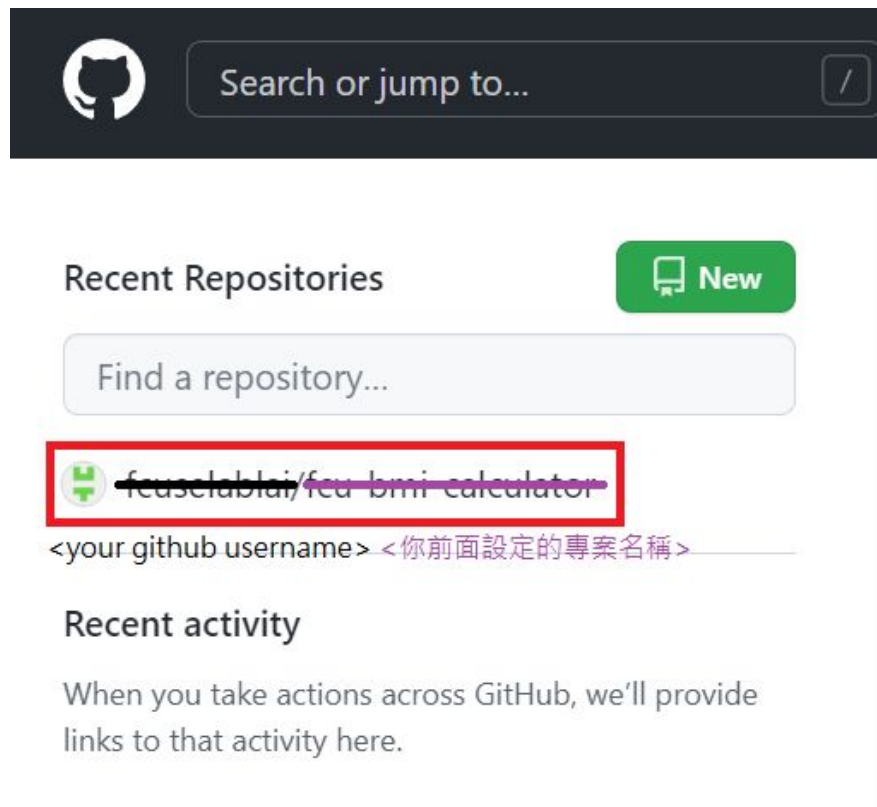
相互關聯識別碼: [ac6b7adf-d4a2-4688-9841-d7fe67389cb1](#) 

^ 部署詳細資料

資源	類型	狀態	作業詳細資料
沒有結果。			

GitHub Repository


- 登入自己的 Github 帳號







GitHub Repository


🔗 master ▾ 🔗 1 branch 🏷️ 0 tags

Go to file Add file ▾ Code ▾


 fcuselablai Adding workflow file

 .github/workflows	Adding workflow file
 Application	First commit
 ArmTemplates	First commit
 Tests	First commit


Add a README with an overview of your project.


 Clone ?

HTTPS SSH GitHub CLI

`https://github.com/fcuselablai/fcu-bmi-ca:` 

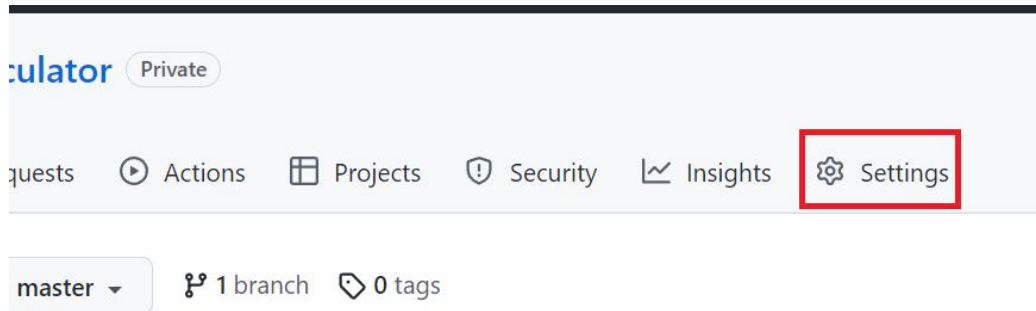
Use Git or checkout with SVN using the web URL.

 Open with GitHub Desktop

 Download ZIP

GitHub Repository

- 修改專案為公開



Danger Zone

Change repository visibility
This repository is currently private. [Change visibility](#)

Transfer ownership
Transfer this repository to another user or to an organization where you have the ability to create repositories. [Transfer](#)

Archive this repository
Mark this repository as archived and read-only. [Archive this repository](#)

Delete this repository
Once you delete a repository, there is no going back. Please be certain. [Delete this repository](#)

Change repository visibility ×

Warning: this is a potentially destructive action.

Make public
Make this repository visible to anyone.

- The code will be visible to everyone who can visit <https://github.com>
- Anyone can fork your repository.
- Your changes will be published as activity.

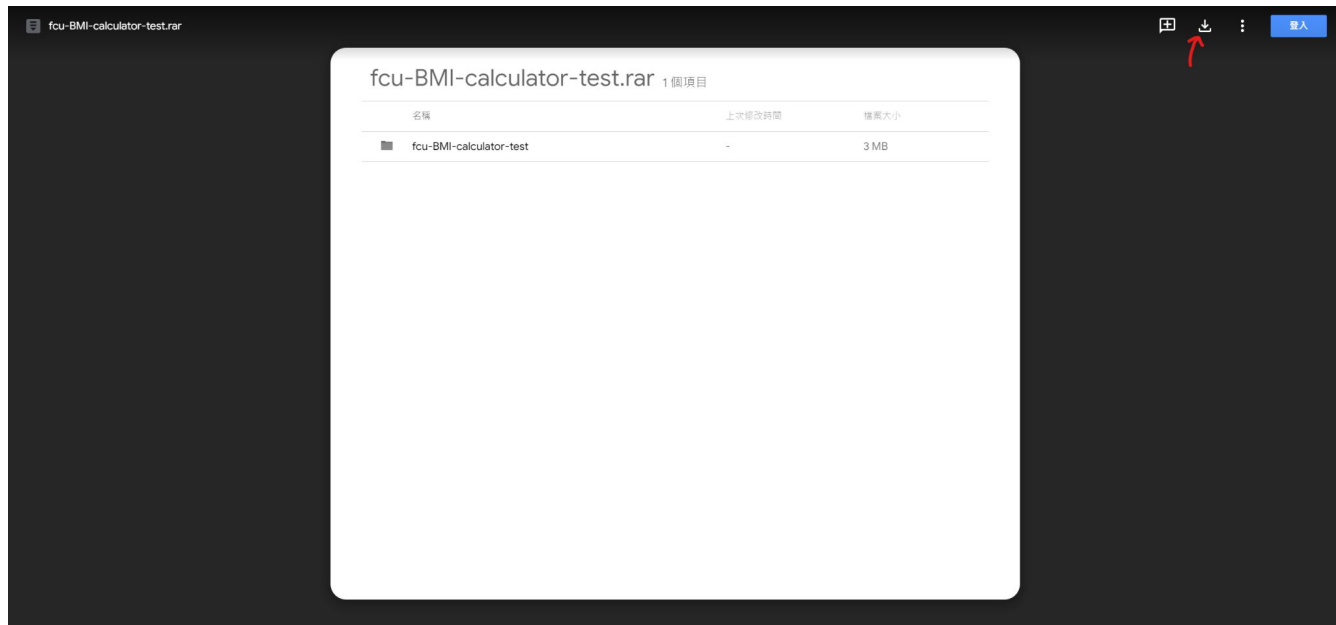
Make private
This repository is currently private.

Please type `fcuselablai/fcu-bmi-calculator` to confirm.

[I understand, change repository visibility.](#)

GitHub Repository

- 下載 [該專案](#)
- 將該專案的以下幾個資料夾與檔案覆蓋進去
 - .github
 - Application
 - ArmTemplates
 - Tests
 - .gitignore



GitHub Repository

- 將.github/workflows/devops-starter-workflow.yml 的 env 環境變數修改成 [[Adding workflow file](#)] 這個 commit 版本的內容(非與圖片內容一樣!)

Adding workflow file



fcuselab2022 committed 40 minutes ago ✓

```
env:
  AZURE_WEBAPP_NAME: "bmi2022" # set this to your application's name
  AZURE_WEBAPP_PACKAGE_PATH: "Application" # set this to the path to your web app project, defaults to the repository root
  PYTHON_VERSION: '3.7.5' # set this to the python version to use
  RESOURCEGROUPNAME: "bmi2022-rg"
  LOCATION: "East Asia"
  HOSTINGPLANNAME: "bmi2022-plan"
  APPINSIGHTLOCATION: "East Asia"
  SKU: "B1 Basic"
```

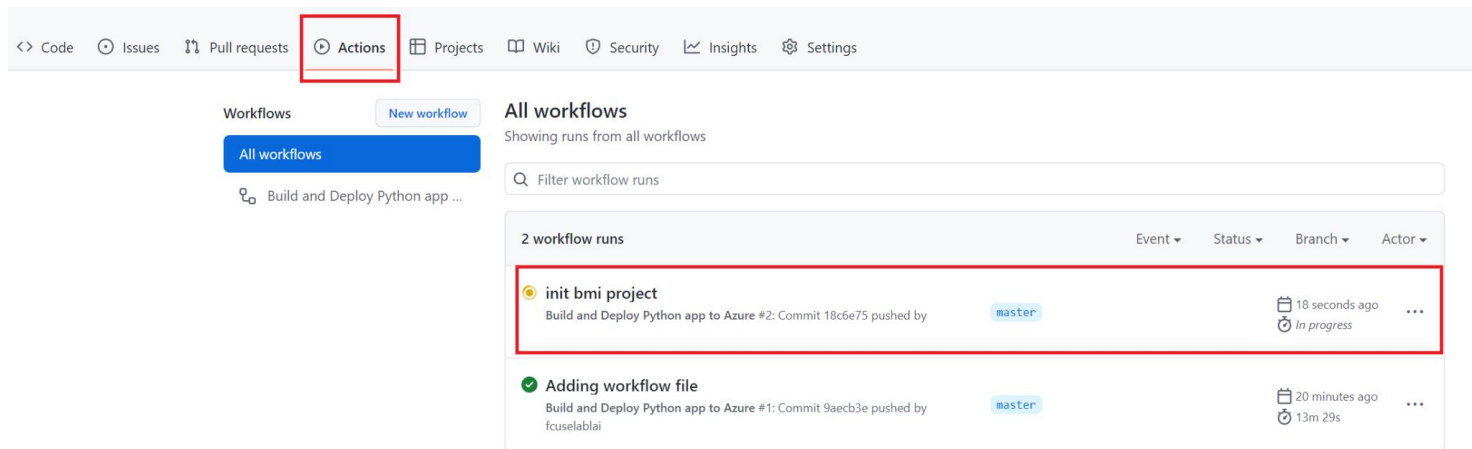
GitHub Repository

- 新增變更
- 推送到遠端分支

```
(venv) selab@DESKTOP-JOG064P:/mnt/c/cygwin/home/selab/workspace/fcu-BMI-calculator-cpy$ git add .
(venv) selab@DESKTOP-JOG064P:/mnt/c/cygwin/home/selab/workspace/fcu-BMI-calculator-cpy$ git commit -m "init bmi project"
[master 18c6e75] init bmi project
19 files changed, 316 insertions(+), 7286 deletions(-)
create mode 100644 .gitignore
rewrite Application/app/static/app/content/bootstrap.css (98%)
rewrite Application/app/static/app/content/bootstrap.min.css (97%)
rewrite Application/app/static/app/scripts/bootstrap.min.js (98%)
rewrite Application/app/static/app/scripts/jquery-1.10.2.min.js (99%)
delete mode 100644 Application/app/templates/about.html
delete mode 100644 Application/app/templates/contact.html
rewrite Application/app/templates/index.html (94%)
delete mode 100644 Application/app/templates/login.html
delete mode 100644 Application/app/templates/loginpartial.html
rewrite Application/app/views.py (84%)
mode change 100644 => 100755 Application/python_webapp_django/settings.py
rewrite Application/python_webapp_django/urls.py (84%)
```


GitHub Repository

- 可在自己 Repository / Actions 地方看到剛剛 push 的 commit 正在進行檢查






The screenshot shows the GitHub Actions interface. The 'Actions' tab is highlighted with a red box. Below the navigation bar, the 'All workflows' section is visible. A search bar for 'Filter workflow runs' is present. A table of workflow runs is shown, with the first row highlighted by a red box. The first row is for the workflow 'init bmi project', which is currently 'In progress' and was triggered by a push to the 'master' branch. The second row is for the workflow 'Adding workflow file', which is completed and was triggered by a push to the 'master' branch.

Event	Status	Branch	Actor
init bmi project	In progress	master	
Adding workflow file	Completed	master	

Azure DevOps Starter

- 等跑完後點擊右邊 Browse 即可看到部署好的網站。

 **fcu-bmi-calculator**  
DevOps Starter

 Refresh  Delete

Repository

 [fcuselab/ai/fcu-bmi-calculator](#)

Workflow file

[.github/workflows/devops-starter-workflow.yml](#)



GitHub Workflow

Latest Run

 [init bmi project](#)

 09/13/2022 10:40:52 AM

[.github/workflows/devops-starter-workflow.yml](#) #2

 1m 15s

 Commit [18c6e7](#) pushed to branch [master](#)

Lai

Jobs



Job name

latest run

 [Build and Run tests](#)

 09/13/2022 10:43:42 AM  1m 13s

 [Deploy to azure web app](#)

 09/13/2022 10:45:06 AM  2s

Azure resources

Application endpoint

<https://fcu-bmi-calculator.azurewebsites.net>

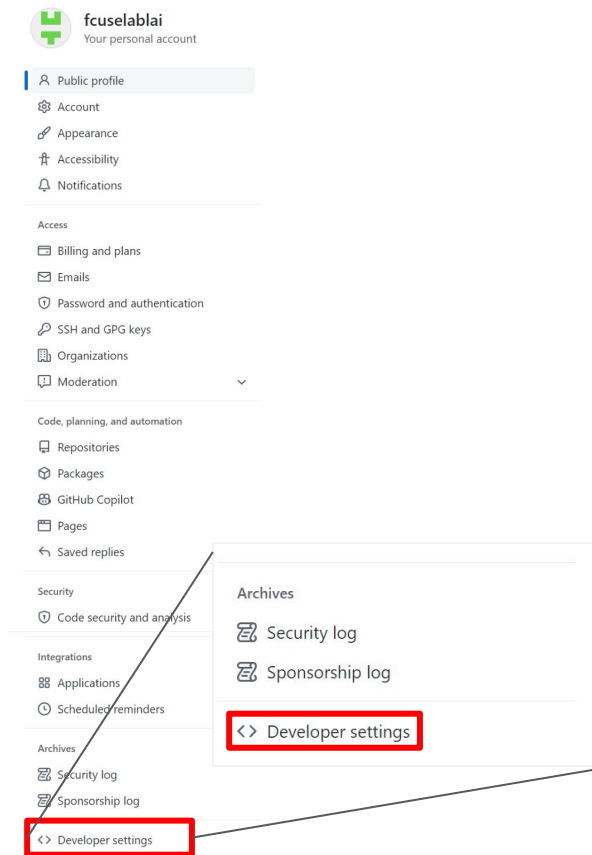
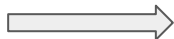
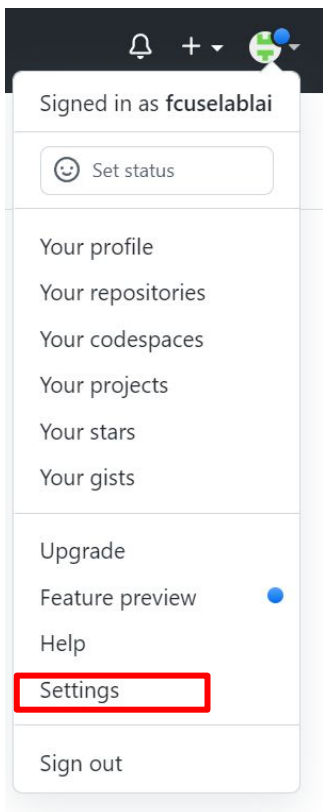
[Browse](#) 

App Service

 [fcu-bmi-calculator](#)

 **Running**

安裝Github APP



安裝Github APP

Settings / Developer settings

☰ GitHub Apps

🔗 OAuth Apps

🔑 Personal access tokens

GitHub Apps

New GitHub App

Want to build something that integrates with and extends GitHub? [Register a new GitHub App](#) to get started developing on the GitHub API. You can also read more about building GitHub Apps in our [developer documentation](#).

安裝Github APP

Register new GitHub App

GitHub App name *

sonarqube app

The name of your GitHub App.

Write

Preview

 Markdown supported

This is displayed to users of your GitHub App

Homepage URL *

https://127.0.0.1:5000 (隨便填)

The full URL to your GitHub App's website.

安裝Github APP

Webhook

Active

We will deliver event details when this hook is triggered.

Webhook URL *

SonarQube 網址 <http:// + 公用IP位址>

Events will POST to this URL. Read our [webhook documentation](#) for more information.

Webhook secret (optional)

Read our [webhook secret documentation](#) for more information.

作業系統	: Linux (debian 11)
大小	: Standard B2s (2 vcpu + 4 GiB 記憶體)
公用 IP 位址	: 20.194.33.30
虛擬網路/子網路	: SonarQubeVM-vnet/default
DNS 名稱	: 未設定

安裝Github APP

Permissions

Repository permissions 2 Selected ▼

Actions ⓘ Workflows, workflow runs and artifacts.	Access: No access ▼
Administration ⓘ Repository creation, deletion, settings, teams, and collaborators.	Access: No access ▼
Checks ⓘ Checks on code.	Access: Read and write ▼
Commit statuses ⓘ Commit statuses.	Access: Read-only ▼
Pull requests ⓘ Pull requests and related comments, assignees, labels, milestones, and merges.	Access: Read and write ▼

安裝Github APP

Organization permissions 2 Selected ▼

Members ⓘ
Organization members and teams. Access: Read-only ▼

Projects ⓘ
Manage projects for an organization. Access: Read-only ▼

安裝Github APP

User permissions 1 Selected ▼
These permissions are granted on an individual user basis as part of the [User authorization flow](#).

Block another user ⓘ View and manage users blocked by the user.	Access: No access ▼
Codespaces user secrets ⓘ Manage Codespaces user secrets.	Access: No access ▼
Email addresses ⓘ Manage a user's email addresses.	Access: Read-only ▼

安裝Github APP

Where can this GitHub App be installed?

Only on this account

Only allow this GitHub App to be installed on the **fcuselablai** account.

Any account

Allow this GitHub App to be installed by any user or organization.


Create GitHub App

Cancel

安裝Github APP

Registration successful. You must [generate a private key](#) in order to install your GitHub App.

[Settings](#) / [Developer settings](#) / [GitHub Apps](#) / [fcuselablai sonarqube app](#)

- General
- Permissions & events
- Install App
- Advanced
- Optional features
- Public page 

About

成功建立

Owned by: @fcuselablai

App ID: 246005

Client ID: lv1.72685

[Revoke all user tokens](#)

GitHub Apps can use OAuth credentials to identify users. Learn more about identifying users by reading our [integration developer documentation](#).

Public link

<https://github.com/apps/fcuselablai-sonarqube-a>



生成密鑰

Client secrets

[Generate a new client secret](#)

You need a client secret to authenticate as the application to the API.

安裝Github APP

Client secrets

Generate a new client secret

Make sure to copy your new client secret now. You won't be able to see it again.

需要複製下來, 後續會用到



Client secret



1d2dbccd0c67a3143218bfc072091... [redacted] 30b



Added now by fcuselablai

Never used

Delete

You cannot delete the only client secret. Generate a new client secret first.

安裝Github APP

Private keys

Generate a private key


You need a private key to sign access token requests.

[Generate a private key](#)

[Learn more about private keys.](#)

安裝Github APP

- General
- Permissions & events
- Install App**
- Advanced
- Optional features

Public page 

About

Owned by: [@fcuselablai](#)

App ID: 

Client ID: 

[Revoke all user tokens](#)


GitHub Apps can use OAuth credentials to identify users. Learn more about identifying users by reading our [integration developer documentation](#).

Public link


<https://github.com/apps/fcuselablai-sonarqube-a>



安裝Github APP




Install fcuselablai sonarqube app


Install on your personal account fcuselablai 

All repositories
This applies to all current *and* future repositories owned by the resource owner.
Also includes public repositories (read-only).

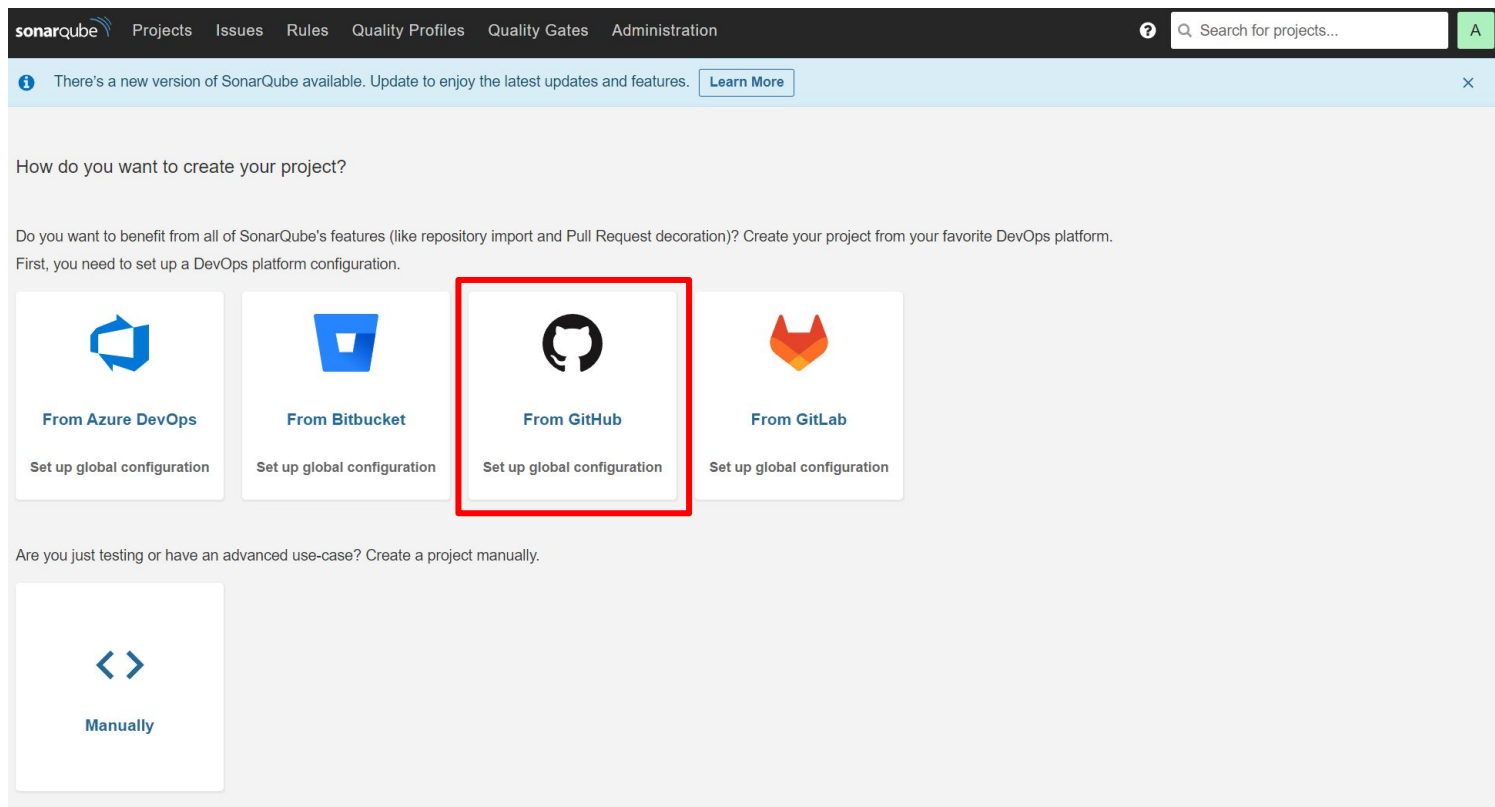
Only select repositories
Select at least one repository.
Also includes public repositories (read-only).

 **Select repositories** ▾

Selected 1 repository.

 fcuselablai/fcu-BMI-calculator-test ×

SonarQube 與 GitHub 設定



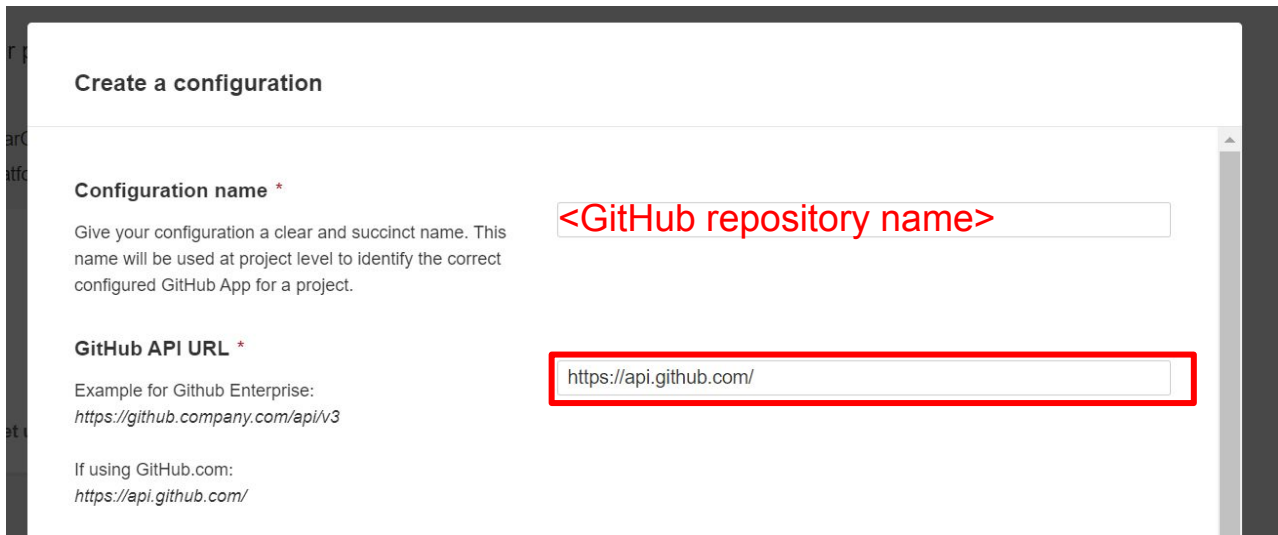
The screenshot shows the SonarQube web interface. At the top, there is a navigation bar with the SonarQube logo and menu items: Projects, Issues, Rules, Quality Profiles, Quality Gates, and Administration. A search bar on the right contains the text "Search for projects..." and a green button with the letter "A". Below the navigation bar, a light blue notification banner states: "There's a new version of SonarQube available. Update to enjoy the latest updates and features." with a "Learn More" button and a close "X" icon.

The main content area starts with the question "How do you want to create your project?". Below this, a paragraph reads: "Do you want to benefit from all of SonarQube's features (like repository import and Pull Request decoration)? Create your project from your favorite DevOps platform. First, you need to set up a DevOps platform configuration." This paragraph is followed by four white cards, each representing a different DevOps platform:

- From Azure DevOps**: Includes the Azure DevOps logo and the text "Set up global configuration".
- From Bitbucket**: Includes the Bitbucket logo and the text "Set up global configuration".
- From GitHub**: Includes the GitHub logo and the text "Set up global configuration". This card is highlighted with a red border.
- From GitLab**: Includes the GitLab logo and the text "Set up global configuration".

Below these cards, another paragraph asks: "Are you just testing or have an advanced use-case? Create a project manually." This is followed by a single white card with a blue code icon and the text "Manually".

SonarQube 與 GitHub 設定



Create a configuration

Configuration name *

Give your configuration a clear and succinct name. This name will be used at project level to identify the correct configured GitHub App for a project.

GitHub API URL *

Example for Github Enterprise:
https://github.company.com/api/v3

If using GitHub.com:
https://api.github.com/

SonarQube 與 GitHub 設定

Create a configuration

i You need to install a GitHub App with specific settings and permissions to enable Pull Request Decoration on your Organization or Repository. [Learn More](#)

GitHub App ID *
The App ID is found on your GitHub App's page on GitHub at Settings > Developer Settings > GitHub Apps

Client ID *
The Client ID is found on your GitHub App's page.

Client Secret *
The Client secret is found on your GitHub App's page.

i You can encrypt this value. [Learn More](#)

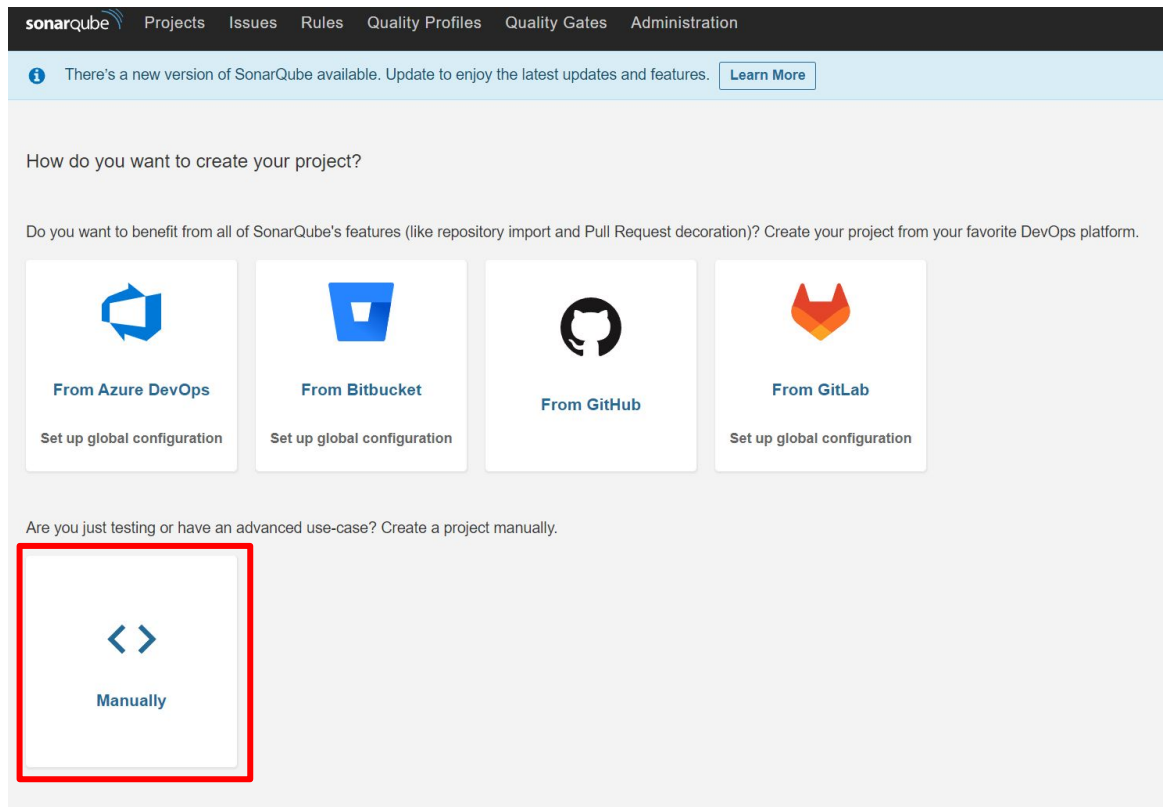
Private Key *
Your GitHub App's private key. You can generate a .pem file from your GitHub App's page under Private keys. Copy and paste the whole contents of the file here.

SonarQube 與 GitHub 設定

This GitHub App must be configured with a callback URL

看到該訊息, 返回 [SonarQube 首頁](#)

SonarQube 專案設置



The screenshot shows the SonarQube web interface for creating a new project. At the top, there is a navigation bar with the SonarQube logo and menu items: Projects, Issues, Rules, Quality Profiles, Quality Gates, and Administration. Below the navigation bar is a light blue notification banner that reads: "There's a new version of SonarQube available. Update to enjoy the latest updates and features." with a "Learn More" button. The main content area starts with the question "How do you want to create your project?". Below this is a sub-question: "Do you want to benefit from all of SonarQube's features (like repository import and Pull Request decoration)? Create your project from your favorite DevOps platform." This leads to four white cards, each representing a different DevOps platform: "From Azure DevOps", "From Bitbucket", "From GitHub", and "From GitLab". Each card includes the platform's logo, the text "From [Platform]", and "Set up global configuration". Below these cards is another question: "Are you just testing or have an advanced use-case? Create a project manually." This leads to a single white card with a blue code symbol icon (<>) and the text "Manually". This "Manually" card is highlighted with a red rectangular border.

sonarqube Projects Issues Rules Quality Profiles Quality Gates Administration

There's a new version of SonarQube available. Update to enjoy the latest updates and features. [Learn More](#)

How do you want to create your project?

Do you want to benefit from all of SonarQube's features (like repository import and Pull Request decoration)? Create your project from your favorite DevOps platform.

From Azure DevOps
Set up global configuration

From Bitbucket
Set up global configuration

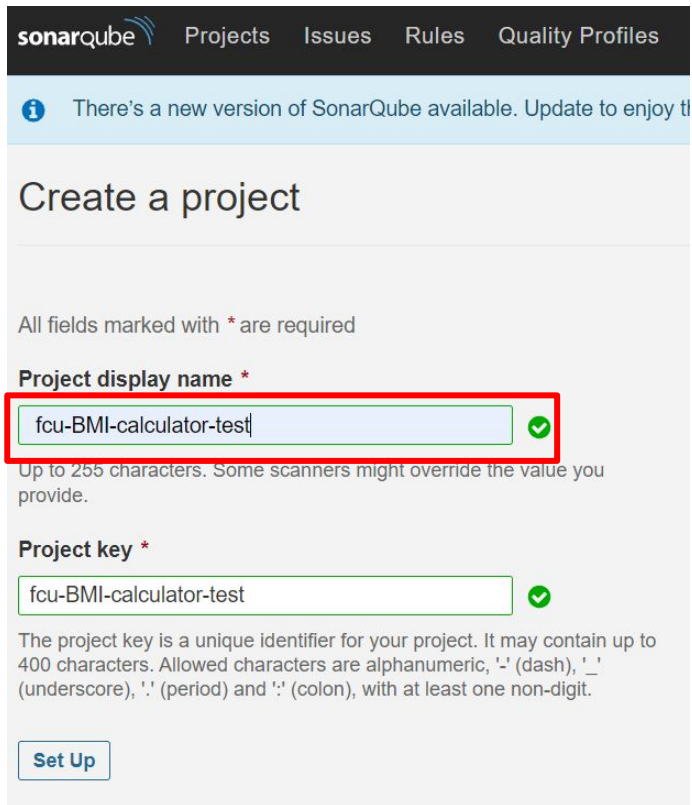
From GitHub

From GitLab
Set up global configuration

Are you just testing or have an advanced use-case? Create a project manually.

Manually

SonarQube 專案設置



sonarqube Projects Issues Rules Quality Profiles

There's a new version of SonarQube available. Update to enjoy th

Create a project

All fields marked with * are required

Project display name *

Up to 255 characters. Some scanners might override the value you provide.

Project key *

The project key is a unique identifier for your project. It may contain up to 400 characters. Allowed characters are alphanumeric, '-' (dash), '_' (underscore), '.' (period) and ':' (colon), with at least one non-digit.

[Set Up](#)

SonarQube 專案設置

The screenshot shows the SonarQube interface for a project named 'fcu-BMI-calculator-test'. The top navigation bar includes 'sonarqube', 'Projects', 'Issues', 'Rules', 'Quality Profiles', 'Quality Gates', and 'Administration'. A search bar on the right contains the text 'Search for projects...'. Below the navigation bar, a blue notification banner states: 'There's a new version of SonarQube available. Update to enjoy the latest updates and features. Learn More'. The project name 'fcu-BMI-calculator-test' is displayed with a star icon and a 'master' branch indicator. A secondary navigation bar includes 'Overview', 'Issues', 'Security Hotspots', 'Measures', 'Code', and 'Activity'. On the right side of this bar, there are 'Project Settings' and a hamburger menu icon. The main content area starts with the question 'How do you want to analyze your repository?'. Below this, it asks 'Do you want to integrate with your favorite CI? Choose one of the following tutorials.' and presents six options in a row: 'With Jenkins', 'With GitHub Actions', 'With Bitbucket Pipelines', 'With GitLab CI', 'With Azure Pipelines', and 'Other CI'. The 'With GitHub Actions' option is highlighted with a red rectangular border. At the bottom, there is a section titled 'Are you just testing or have an advanced use-case? Analyze your project locally.' with a single option 'Locally' represented by an icon of a server rack.

sonarqube Projects Issues Rules Quality Profiles Quality Gates Administration ? Search for projects...

There's a new version of SonarQube available. Update to enjoy the latest updates and features. [Learn More](#)

fcu-BMI-calculator-test ☆ master

Overview Issues Security Hotspots Measures Code Activity Project Settings ☰ Pro

How do you want to analyze your repository?

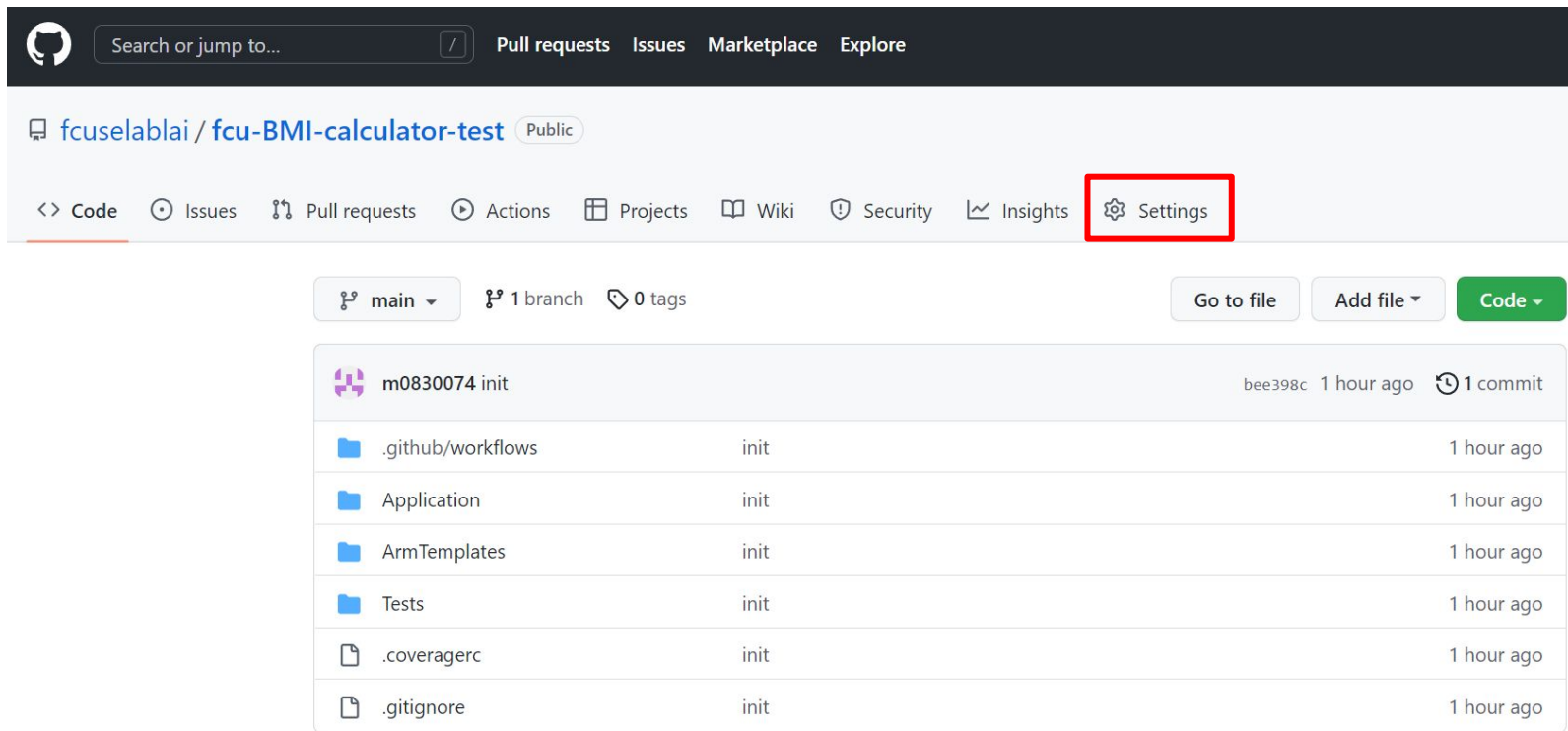
Do you want to integrate with your favorite CI? Choose one of the following tutorials.

- With Jenkins
- With GitHub Actions**
- With Bitbucket Pipelines
- With GitLab CI
- With Azure Pipelines
- Other CI

Are you just testing or have an advanced use-case? Analyze your project locally.

- Locally

SonarQube 專案設置



The screenshot shows the GitHub interface for the repository 'fcuselab/fcu-BMI-calculator-test'. The 'Settings' link in the top navigation bar is highlighted with a red box. Below the navigation bar, the repository name and 'Public' status are shown. The file tree for the 'main' branch is displayed, listing folders like '.github/workflows', 'Application', 'ArmTemplates', and 'Tests', and files like '.coveragerc' and '.gitignore', all with an 'init' status and '1 hour ago' timestamp.

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

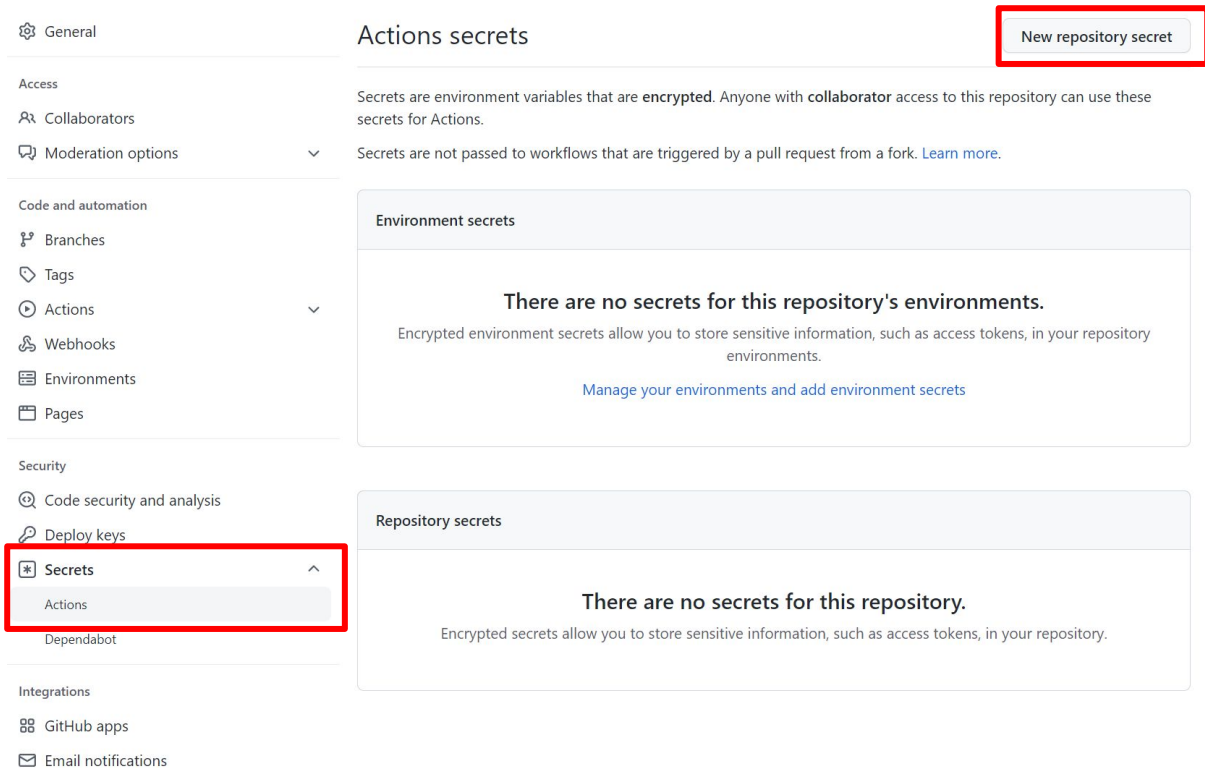
fcuselab / fcu-BMI-calculator-test Public

<> Code Issues Pull requests Actions Projects Wiki Security Insights **Settings**

main 1 branch 0 tags Go to file Add file Code

File/Folder	Status	Commit Info
m0830074	init	bee398c 1 hour ago 1 commit
.github/workflows	init	1 hour ago
Application	init	1 hour ago
ArmTemplates	init	1 hour ago
Tests	init	1 hour ago
.coveragerc	init	1 hour ago
.gitignore	init	1 hour ago

SonarQube 專案設置



The screenshot shows the SonarQube interface for configuring secrets. On the left is a navigation sidebar with categories: General, Access, Code and automation, Security, and Integrations. Under 'Access', 'Secrets' is highlighted with a red box, and 'Actions' is selected below it. The main content area is titled 'Actions secrets' and has a 'New repository secret' button highlighted with a red box. Below this are two sections: 'Environment secrets' and 'Repository secrets', both indicating that there are no secrets currently configured for the repository.

General

- Access
 - Collaborators
 - Moderation options
- Code and automation
 - Branches
 - Tags
 - Actions
 - Webhooks
 - Environments
 - Pages
- Security
 - Code security and analysis
 - Deploy keys
 - Secrets**
 - Actions
 - Dependabot
- Integrations
 - GitHub apps
 - Email notifications

Actions secrets

[New repository secret](#)

Secrets are environment variables that are **encrypted**. Anyone with **collaborator** access to this repository can use these secrets for Actions.

Secrets are not passed to workflows that are triggered by a pull request from a fork. [Learn more](#).

Environment secrets

There are no secrets for this repository's environments.

Encrypted environment secrets allow you to store sensitive information, such as access tokens, in your repository environments.

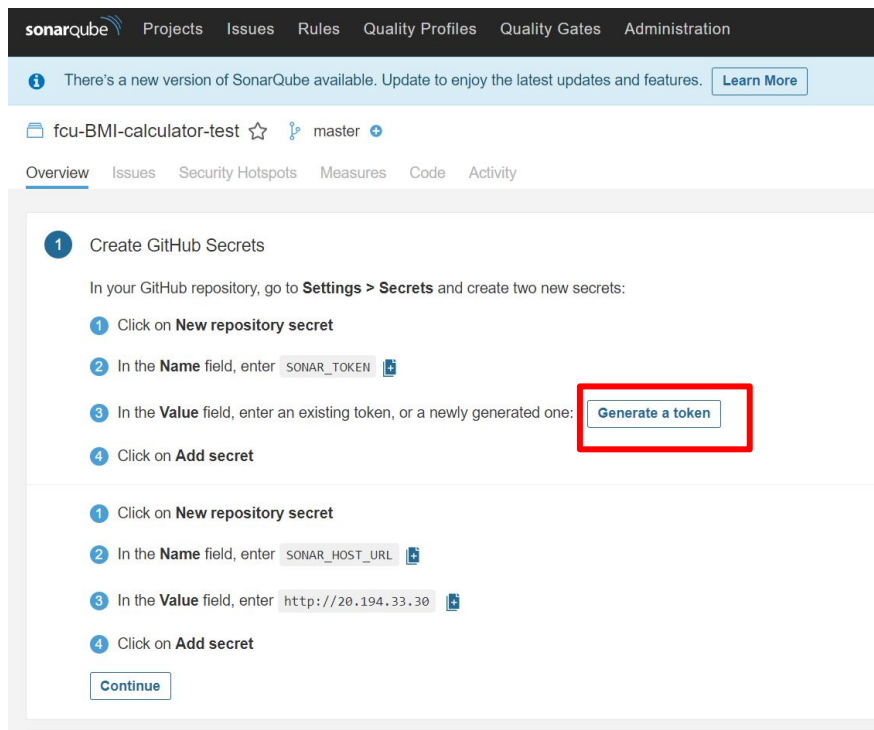
[Manage your environments and add environment secrets](#)

Repository secrets

There are no secrets for this repository.

Encrypted secrets allow you to store sensitive information, such as access tokens, in your repository.

SonarQube 專案設置



The screenshot displays the SonarQube Administration page for a project named 'fcu-BMI-calculator-test'. The navigation bar includes 'sonarqube', 'Projects', 'Issues', 'Rules', 'Quality Profiles', 'Quality Gates', and 'Administration'. A notification banner at the top indicates a new version is available. The main content area is titled 'Create GitHub Secrets' and provides instructions for setting up secrets in a GitHub repository. The instructions are as follows:

1. In your GitHub repository, go to **Settings > Secrets** and create two new secrets:
 - 1 Click on **New repository secret**
 - 2 In the **Name** field, enter `SONAR_TOKEN`
 - 3 In the **Value** field, enter an existing token, or a newly generated one: [Generate a token](#)
 - 4 Click on **Add secret**
- 1 Click on **New repository secret**
- 2 In the **Name** field, enter `SONAR_HOST_URL`
- 3 In the **Value** field, enter `http://20.194.33.30`
- 4 Click on **Add secret**

A [Continue](#) button is located at the bottom of the instructions.

SonarQube 專案設置

Generate a project token

The project token is used to identify you when an analysis is performed. If it has been compromised, you can revoke it at any point in time in your [user account](#).

Analyze "fcb-BMI-calculator-test"

Generate

Continue

Generate a project token

The project token is used to identify you when an analysis is performed. If it has been compromised, you can revoke it at any point in time in your [user account](#).

Analyze "fcb-BMI-calculator-test":

sqp_048e17ec08f2add6455fb0d0169ce5d807d0be29



New token "sqp_048e17ec08f2add6455fb0d0169ce5d807d0be29" has been created. Make sure you copy it now, you won't be able to see it again!

Continue

SonarQube 專案設置

Actions secrets / New secret

Name *

SONAR_TOKEN

Secret *

sqp_048e17

剛剛複製的token貼到這裡

Add secret

SonarQube 專案設置

fcuselab / fcu-BMI-calculator-test (Public) [Pin] [Unwatch 1]

<> Code Issues Pull requests Actions Projects Wiki Security Insights **Settings**

- General
- Access
 - Collaborators
 - Moderation options
- Code and automation
 - Branches
 - Tags
 - Actions
 - Webhooks
 - Environments
 - Pages
- Security
 - Code security and analysis
 - Deploy keys
 - Secrets**
 - Actions

Actions secrets

New repository secret

Secrets are environment variables that are **encrypted**. Anyone with **collaborator** access to this repository can use these secrets for Actions.

Secrets are not passed to workflows that are triggered by a pull request from a fork. [Learn more](#).

Environment secrets

There are no secrets for this repository's environments.

Encrypted environment secrets allow you to store sensitive information, such as access tokens, in your repository environments.

[Manage your environments and add environment secrets](#)

Repository secrets

SONAR_TOKEN	Updated now	Update	Remove
-------------	-------------	------------------------	------------------------

SonarQube 專案設置

[Actions secrets](#) / New secret

Name *

SONAR_HOST_URL

Secret *

<http://SonarQube 網址>

Add secret

SonarQube 專案設置

sonarqube Projects Issues Rules Quality Profiles Quality Gates Administration

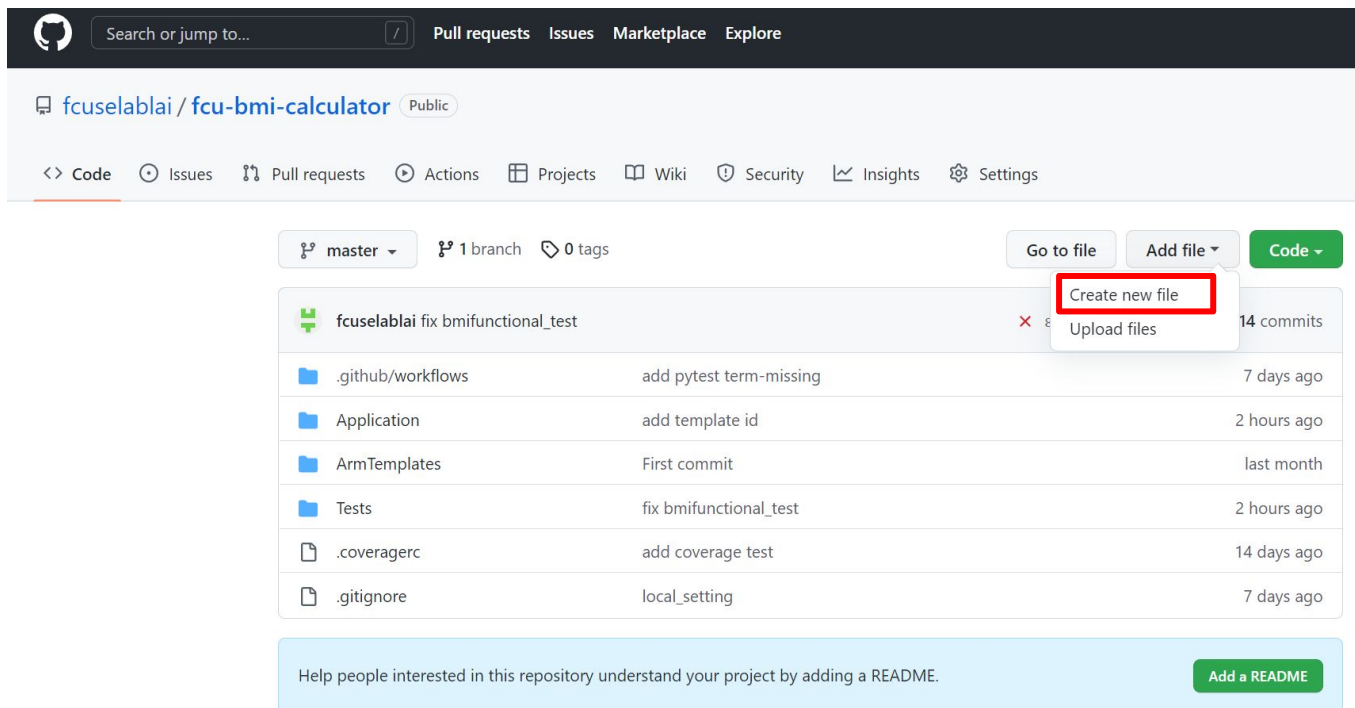
i There's a new version of SonarQube available. Update to enjoy the latest updates and features. [Learn More](#)

fcu-BMI-calculator-test ☆ master +

Overview Issues Security Hotspots Measures Code Activity

- 1 Create GitHub Secrets
- 2 Create Workflow YAML File
 - 1 What option best describes your build?
- 3 You're all set!

SonarQube 專案設置



The screenshot shows the GitHub interface for the repository 'fcuselab/fcu-bmi-calculator'. The top navigation bar includes 'Pull requests', 'Issues', 'Marketplace', and 'Explore'. Below the repository name, there are navigation links for 'Code', 'Issues', 'Pull requests', 'Actions', 'Projects', 'Wiki', 'Security', 'Insights', and 'Settings'. The main content area displays the repository's file structure, including folders like '.github/workflows', 'Application', 'ArmTemplates', and 'Tests', and files like '.coveragerc' and '.gitignore'. A dropdown menu is open over the 'Add file' button, showing options for 'Create new file' (highlighted with a red box) and 'Upload files'. At the bottom, there is a prompt to 'Add a README'.

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

fcuselab / fcu-bmi-calculator Public

<> Code Issues Pull requests Actions Projects Wiki Security Insights Settings

master 1 branch 0 tags

Go to file Add file Code

Create new file
Upload files

File/Folder	Commit Message	Time Ago
fcuselab fix bmifunctional_test		14 commits
.github/workflows	add pytest term-missing	7 days ago
Application	add template id	2 hours ago
ArmTemplates	First commit	last month
Tests	fix bmifunctional_test	2 hours ago
.coveragerc	add coverage test	14 days ago
.gitignore	local_setting	7 days ago

Help people interested in this repository understand your project by adding a README. Add a README

SonarQube 專案設置

[.github](#) / workflows / devops-starter-workflow.yml

env:

```
AZURE_WEBAPP_NAME: "fcu-bmi-calculator" # s
AZURE_WEBAPP_PACKAGE_PATH: "Application"
PYTHON_VERSION: '3.7.5'
RESOURCEGROUPNAME: "fcu-bmi-calculator-rg"
LOCATION: "East Asia"
HOSTINGPLANNAME: "fcu-bmi-calculator-plan"
APPINSIGHTLOCATION: "East Asia"
SKU: "F1"
SONAR_HOST_URL: "http://20.194.33.30"
```

jobs:

```
Build:
  name: Build and Run tests
  runs-on: ubuntu-latest
  steps:
    - uses: actions/checkout@v2
    - name: Use Python ${{ env.PYTHON_VERSION }}
      uses: actions/setup-python@v2
      with:
        python-version: ${{ env.PYTHON_VERSION }}

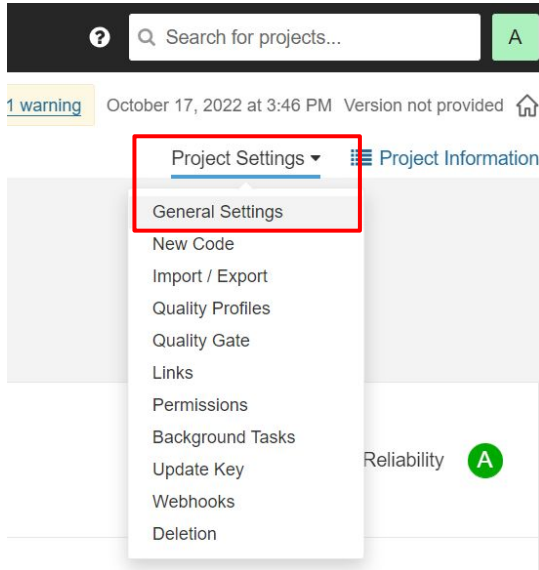
    - name: Install Dependencies
      continue-on-error: false
      run: |
        pip install -r Application/requirements.txt

    - name: Pytest
      continue-on-error: false
      run: |
        mkdir testresults
        pip install pytest && pip install pytest-cov && pytest --cov=./ --cov-con

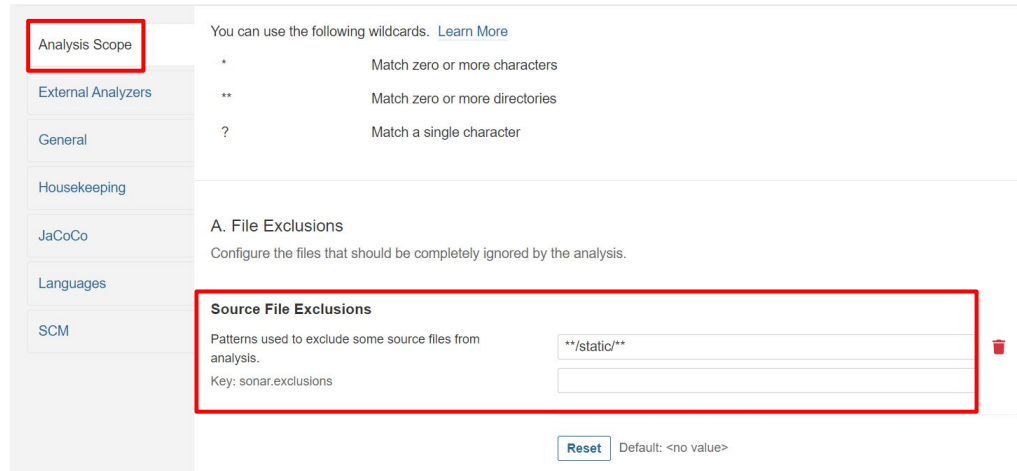
    - uses: actions/checkout@v2
      with:
        fetch-depth: 0
    - uses: sonarsource/sonarqube-scan-action@master
      env:
        SONAR_TOKEN: ${{ secrets.SONAR_TOKEN }}
```


SonarQube exclude files

- 專案首頁 => Project Settings => General Settings => Analysis Scope => Source File Exclusions



A screenshot of the SonarQube interface showing the navigation path. At the top, there is a search bar with the text "Search for projects..." and a green button with the letter "A". Below the search bar, a warning icon and text "1 warning" is visible, followed by the date "October 17, 2022 at 3:46 PM" and the text "Version not provided". The main navigation area shows "Project Settings" selected, with a dropdown menu open. The dropdown menu contains the following items: "General Settings", "New Code", "Import / Export", "Quality Profiles", "Quality Gate", "Links", "Permissions", "Background Tasks", "Update Key", "Webhooks", and "Deletion". The "Project Information" section is partially visible on the right, showing "Reliability" with a green "A" icon.



A screenshot of the SonarQube "Source File Exclusions" configuration page. The left sidebar shows a navigation menu with "Analysis Scope" highlighted. The main content area is titled "A. File Exclusions" and contains the following text: "You can use the following wildcards. [Learn More](#)" followed by a list of wildcards: "*" (Match zero or more characters), "**" (Match zero or more directories), and "?" (Match a single character). Below this, the section "A. File Exclusions" is described as "Configure the files that should be completely ignored by the analysis." The "Source File Exclusions" section is highlighted with a red box and contains a text input field with the value "**/static/**", a key label "Key: sonar.exclusions", and a "Reset" button with the text "Default: <no value>".

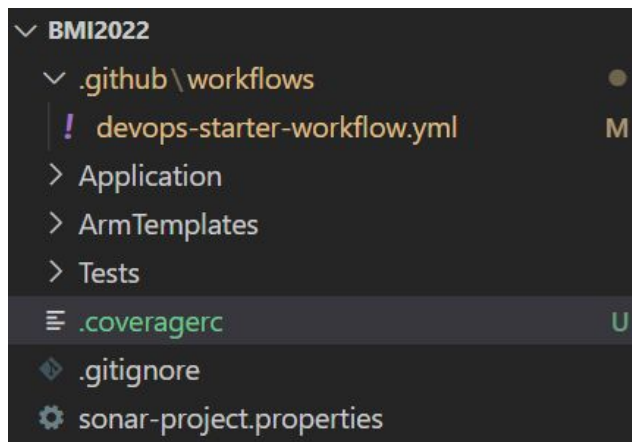
新增涵蓋率測試

- File path: `./github/workflows/devops-starter-workflow.yml` [line. 36](#)
- Original code :
 - `mkdir testresults`
 - `pip install pytest &&`
 - `pytest Tests/unit_tests --junitxml=./testresults/test-results.xml &&`
 - `pip install pycmd &&`
 - `py.cleanup Tests/`
- New code
 - `mkdir testresults`
 - `pip install pytest`
 - `pip install pytest-cov`
 - `pytest --cov=./ --cov-config=.coveragerc Tests/unit_tests --junitxml=./testresults/test-results.xml`
 - `pip install pycmd`
 - `py.cleanup Tests/`

新增涵蓋率測試

- 新增 pytest-cov 設定檔.coveragerc

```
[run]
omit =
    */__init__.py
    */migrations/*
    *.pyc
```



```
[run]
omit =
    */__init__.py
    */migrations/*
    *.pyc
```

新增涵蓋率測試

```
----- coverage: platform linux, python 3.7.5-final-0 -----
```

Name	Stmts	Miss	Cover
Application/app/forms.py	9	0	100%
Application/app/models.py	1	0	100%
Application/app/utils.py	14	8	43%
Application/app/views.py	18	0	100%
Application/python_webapp_django/settings.py	26	0	100%
Application/python_webapp_django/urls.py	12	0	100%
Tests/conftest.py	3	0	100%
Tests/unit_tests/test_utils.py	18	0	100%
Tests/unit_tests/test_views.py	17	0	100%
TOTAL	118	8	93%

cover:有測試到的程式碼比例

新增涵蓋率測試 - missing line

- File path: `./github/workflows/devops-starter-workflow.yml` [line. 36](#)
- Original code :
 - `mkdir testresults`
 - `pip install pytest`
 - `pip install pytest-cov`
 - `pytest --cov=./ --cov-config=.coveragerc term-missing Tests/unit_tests --junitxml=./testresults/test-results.xml`
 - `pip install pycmd`
 - `py.cleanup Tests/`
- New code
 - `mkdir testresults`
 - `pip install pytest`
 - `pip install pytest-cov`
 - `pytest --cov=./ --cov-config=.coveragerc --cov-report term-missing Tests/unit_tests --junitxml=./testresults/test-results.xml`
 - `pip install pycmd`
 - `py.cleanup Tests/`

新增涵蓋率測試

```
----- coverage: platform linux, python 3.7.5-final-0 -----
```

Name	Stmts	Miss	Cover	Missing
Application/app/forms.py	9	0	100%	
Application/app/models.py	1	0	100%	
Application/app/utils.py	14	8	43%	4, 7-14
Application/app/views.py	18	0	100%	
Application/python_webapp_django/settings.py	26	0	100%	
Application/python_webapp_django/urls.py	12	0	100%	
Tests/conftest.py	3	0	100%	
Tests/unit_tests/test_utils.py	18	0	100%	
Tests/unit_tests/test_views.py	17	0	100%	
TOTAL	118	8	93%	

顯示未測試的程式碼行號

練習: 提高 utils.py 涵蓋率

- Application\app\utils.py

```
1 def bmi_calculator(height, weight):
2     bmi = round(weight/(height**2),2)
3     if bmi < 18.5:
4         bmi_means = '過輕'
5     elif bmi >= 18.5 and bmi < 24:
6         bmi_means = '健康體位'
7     elif bmi >= 24 and bmi < 27:
8         bmi_means = '過重'
9     elif bmi >= 27 and bmi < 30:
10        bmi_means = '輕度肥胖'
11    elif bmi >= 30 and bmi < 35:
12        bmi_means = '中度肥胖'
13    else:
14        bmi_means = '重度肥胖'
15    return bmi, bmi_means
```

```
----- coverage: platform linux, python 3.7.5-final-0 -----
```

Name	Stmts	Miss	Cover	Missing
Application/app/forms.py	9	0	100%	
Application/app/models.py	1	0	100%	
Application/app/utils.py	14	8	43%	4, 7-14
Application/app/views.py	18	0	100%	
Application/python_webapp_django/settings.py	26	0	100%	
Application/python_webapp_django/urls.py	12	0	100%	
Tests/conftest.py	3	0	100%	
Tests/unit_tests/test_utils.py	18	0	100%	
Tests/unit_tests/test_views.py	17	0	100%	
TOTAL	118	8	93%	

練習: 提高 utils.py 涵蓋率

- Tests\unit_tests\test_utils.py
 - 只有一個測試健康體位的test case
 - 請撰寫一或多個能將utils.py 測試涵蓋率達到 100% 的 test case

```
def test_bmi_result_normal(self):  
    """Tests bmi result."""  
    height = 1.6  
    weight = 55  
    bmi, bmi_means = bmi_calculator(height, weight)  
    self.assertEqual(bmi, 21.48)  
    self.assertEqual(bmi_means, '健康體位')
```


練習：不合理的輸入

- 使用者輸入預期外的資料容易造成程式的錯誤
 - 需要檢查輸入的數值與格式
 - 這些檢查的程式碼也須列入測試
- bmi檢查範例
 - 體重 input type 為text
 - 檢查是否輸入數字
 - 身高體重需在合理範圍
 - 身高: $2.5 > \text{height} > 0$
 - 體重: $200 > \text{weight} > 15$

請輸入身高(m) :

請輸入體重(kg) :

送出

您的 BMI 為

0.01

屬於

過輕

練習：不合理的輸入

- django form 提供檢查使用者輸入的函示
- Application\app\forms.py

```
def clean(self):
    cd = self.cleaned_data

    try:
        weight = float(cd.get('weight'))
        height = float(cd.get('height'))

        height_condition = (height > 2.5) or (height <= 0)
        if height_condition:
            self.add_error('height', "請輸入合理範圍的身高")

        weight_condition = (weight > 200) or (weight <= 15)
        if weight_condition:
            self.add_error('weight', "請輸入合理範圍的體重")
    except:
        self.add_error('weight', "請輸入數字!")

    return cd
```

```
def clean(self):
    cd = self.cleaned_data

    try:
        weight = float(cd.get('weight'))
        height = float(cd.get('height'))

        height_condition = (height > 2.5) or (height <= 0)
        if height_condition:
            self.add_error('height', "請輸入合理範圍的身高!")

        weight_condition = (weight > 200) or (weight <= 15)
        if weight_condition:
            self.add_error('weight', "請輸入合理範圍的體重!")
    except:
        self.add_error('weight', "請輸入數字!")

    return cd
```

練習：不合理的輸入

身高判斷

請輸入身高(m)：

- 請輸入合理範圍的身高!

請輸入體重(kg)：

送出

體重判斷

請輸入身高(m)：

請輸入體重(kg)：

- 請輸入合理範圍的體重!

送出

文字\數字判斷

請輸入身高(m)：

請輸入體重(kg)：

- 請輸入數字!

送出

練習：不合理的輸入

```
----- coverage: platform linux, python 3.7.5-final-0 -----
```

Name	Stmts	Miss	Cover	Missing
Application/app/forms.py	9	0	100%	
Application/app/models.py	1	0	100%	
Application/app/utils.py	14	8	43%	4, 7-14
Application/app/views.py	18	0	100%	
Application/python_webapp_django/settings.py	26	0	100%	
Application/python_webapp_django/urls.py	12	0	100%	
Tests/conftest.py	3	0	100%	
Tests/unit_tests/test_utils.py	18	0	100%	
Tests/unit_tests/test_views.py	17	0	100%	
TOTAL	118	8	93%	

Name	Stmts	Miss	Cover	Missing
Application/app/forms.py	23	4	83%	39, 43-45
Application/app/models.py	1	0	100%	
Application/app/utils.py	14	0	100%	
Application/app/views.py	18	0	100%	
Application/python_webapp_django/settings.py	26	0	100%	
Application/python_webapp_django/urls.py	12	0	100%	
Tests/conftest.py	3	0	100%	
Tests/unit_tests/test_utils.py	48	0	100%	
Tests/unit_tests/test_views.py	17	0	100%	
TOTAL	162	4	98%	

練習：不合理的輸入

```
30     def clean(self):
31         cd = self.cleaned_data
32
33         try:
34             weight = float(cd.get('weight'))
35             height = float(cd.get('height'))
36
37             height_condition = (height > 2.5) or (height <= 0)
38             if height_condition:
39                 self.add_error('height', "請輸入合理範圍的身高!")
40
41             weight_condition = (weight > 200) or (weight <= 15)
42             if weight_condition:
43                 self.add_error('weight', "請輸入合理範圍的體重!")
44         except:
45             self.add_error('weight', "請輸入數字!")
46
47         return cd
```

練習: 不合理的輸入

- 需要對 form.py 檢查使用者輸入的程式碼做測試
- Tests\unit_tests\test_views.py

```
def test_unit_home(self):  
    """Tests the home page."""  
    response = self.client.get('/')  
    self.assertContains(response, 'SELab 關心您的身體健康', 1, 200, html=True)  
  
def test_unit_normal(self):  
    """Tests the home page."""  
    response = self.client.post('/', {'height':1.7,'weight':"60"})  
    self.assertContains(response, '20.76', 1, 200, html=True)
```

測試網頁是否正確執行

測試 BMI 的 function 是否有功能

- 需要在這寫一些錯誤輸入的測試案例來進行 form 的測試
- ex:

```
def test_unit_weight(self):  
    """Tests the home page."""  
    response = self.client.post('/', {'height':1.7,'weight':"300"})  
    self.assertContains(response, '請輸入合理範圍的體重!', 1, 200, html=True)
```

練習: functional_test

- 使用 selenium 為部屬好的網站進行自動化測試, 藉此確認部屬成功, 且功能正常。
- Tests\functional_tests\test_bmifunctional.py

```
18  def test_selenium(self):
19      webAppUrl = pytest.config.getoption('webAppUrl')
20      start_timestamp = time.time()
21      end_timestamp = start_timestamp + 60*10
22      while True:
23          try:
24              response = self.driver.get(webAppUrl)
25
26              height = self.driver.find_element_by_id("id_height")
27              weight = self.driver.find_element_by_id("id_weight")
28
29              height.send_keys('1.7')
30              weight.send_keys('60')
31              weight.submit()
32
33              time.sleep(1)
34              bmi = self.driver.find_element_by_id("bmi")
35              self.assertEqual("20.76", bmi.text)
36          break
37
```

填入身高與體重的 input 並 submit 送出

檢查表單送出後網頁上呈現的結果是否正確

練習: functional_test

1. 更改 `send_keys()` 的值與 `assertEqual` 的值, 確認可執行
2. 增加 **form 檢查錯誤輸入** 的測試