

Guide d'utilisation de GitHub Classroom

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1. GitHub Classroom

[GitHub Classroom](#) automatise la création et le contrôle d'accès de dépôts [GitHub](#) pour l'enseignement. [GitHub Classroom](#) s'adresse aux étudiants pour récupérer un code de démarrage et aux enseignants pour la collecte des devoirs.



[GitHub Classroom](#) est gratuit pour tous. Il est possible aussi de profiter des avantages de [GitHub Education](#) (étudiants et enseignants).

Real-world tools, engaged students

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



GitHub Student Developer Pack

The best developer tools, free for students



GitHub Campus Experts

Training to enrich the technology community at your school



GitHub Teacher Toolbox

The best developer tools for teaching, free for academic use



GitHub Campus Advisors

Teacher training to master Git and GitHub



GitHub Classroom

The best way for teachers to distribute and collect coursework on GitHub



GitHub Campus Program

GitHub for your whole school, with everything you need to make it great

[GitHub](#) est un service web d'hébergement et de gestion de développement de logiciels, utilisant le logiciel de gestion de versions Git.



[Git](#) est un logiciel de **gestion de versions décentralisé** (DVCS). C'est un logiciel libre créé par **Linus Torvalds** en 2005. Il s'agit maintenant du logiciel de gestion de versions le plus populaire devant **Subversion** ([svn](#)) qu'il a remplacé avantageusement.



Sites officiels :

- [GitHub Classroom](#)
- [GitHub Education](#)
- [GitHub](#)
- [Git](#)

Documentation : [Manage coursework with GitHub Classroom](#)

1.1. Créer un modèle de dépôt

Il faut créer préalablement un dépôt (*repository*) dans [GitHub](#) :

Create a new repository

A repository contains all project files, including the revision history. Already have a project repository elsewhere? [Import a repository.](#)

Owner *



btssn-lasalle84 ▾

Repository name *

tp-prerequis-cplusplus



Great repository names are short and memorable. Need inspiration? How about [literate-happiness?](#)

Description (optional)

TP Prérequis C++

Public

Anyone on the internet can see this repository. You choose who can commit.

Private

You choose who can see and commit to this repository.

Initialize this repository with:

Skip this step if you're importing an existing repository.

Add a README file

This is where you can write a long description for your project. [Learn more.](#)

Add .gitignore

Choose which files not to track from a list of templates. [Learn more.](#)

.gitignore template: C++ ▾

Choose a license

A license tells others what they can and can't do with your code. [Learn more.](#)

This will set main as the default branch. Change the default name in BTS SN LaSalle Avignon's [settings](#).

Grant your Marketplace apps access to this repository

btssn-lasalle84 is subscribed to 1 Marketplace app

Jira Software + GitHub
Connect Jira to GitHub

Create repository

Puis le paramétrer en "modèle" (*template*):

The screenshot shows the 'Settings' page for a GitHub repository named 'tp-prerequis-cplusplus'. On the left, a sidebar lists various settings options: Options, Manage access, Security & analysis, Branches, Webhooks, Notifications, Integrations, Deploy keys, Actions, Secrets, and Pages. The 'Template repository' checkbox is checked and highlighted with a red box. Below it, a note says: 'Template repositories let users generate new repositories with the same directory structure and files. [Learn more](#)'.

1.2. Créer une classe

On commence par créer une nouvelle classe (*classroom*) :

The screenshot shows the GitHub Classroom interface. At the top, there's a search bar labeled 'Find a classroom...', a dropdown for 'View: Active', a dropdown for 'Sort by: Newest first', and a green 'New classroom' button. The 'New classroom' button is highlighted with a red box.

Exemple :

The screenshot shows the GitHub Classroom interface after creating a new classroom. The classroom is named 'BTS SNIR 2021-2022' and is associated with the user 'btssn-lasalle84'. There is a green '+' button to add assignments. The 'New classroom' button from the previous screenshot is also visible at the top right.



On pourra ensuite créer des devoirs (*assignments*) pour cette classe.

Les étudiants de cette classe :

BTS SNIR 2021-2022

btssn-lasalle84

 Assignments 0  Students 0  TAs and Admins 1  Settings

Students

Let's set up your roster

The student roster allows you to easily track student progress on your dashboard.

Import students from your institution

GitHub Classroom is able to automatically import your roster from your institution. If you would rather manage your roster manually, you can still do that, too.

 Import from a learning management system

Or, create your roster by listing students

Enter your list of students, **one per line**.

Student identifier

Upload a CSV or text file

Create roster

On peut connecter un système de gestion de cours comme [Google Classroom](#) ou importer une liste des étudiants au format CSV.

Et les enseignants et administrateurs :

BTS SNIR 2021-2022

btssn-lasalle84

The screenshot shows the GitHub Classroom interface for the organization 'btssn-lasalle84'. The top navigation bar includes 'Assignments' (0), 'Students' (0), 'TAs and Admins' (1, which is highlighted with a red underline), and 'Settings'. Below the navigation, under 'Classroom admins', there is a card for 'tvaira' with a remove button. A large central box provides instructions for inviting TAs and admins:

- 1 Invite TAs and admins to your GitHub organization**

Organizations are managed on [github.com](#), not [classroom.github.com](#). In order to grant admin access, you must first add them as **owners** to your GitHub organization, **btssn-lasalle84**.

[Invite TAs and admins to your GitHub organization →](#)
- 2 Ask them to join this classroom URL**

<https://classroom.github.com/classrooms/80478809-bts-snir>

In addition to inviting them to the organization, you also need to send them the classroom invitation URL above to join your classroom. Once they sign in to GitHub Classroom using the invitation link, they will automatically be added to this classroom as admins.

L'onglet *Settings* permet notamment de connecter un système de gestion de cours comme [Google Classroom](#) (afin de récupérer la liste des étudiants) :

BTS SNIR 2021-2022

btssn-lasalle84

Assignments 0

Students 0

TAs and Admins 1

Settings

Classroom details

Classroom name

BTS SNIR 2021-2022

Rename classroom

Organization account

GitHub Classroom uses the organization, [btssn-lasalle84](#), to manage permissions, administration, and security for your classroom. Organization accounts are managed on [github.com](#), not [classroom.github.com](#).

Organization settings

Classroom settings

Connect to a learning management system (LMS)

Integrate GitHub Classroom with your institution's learning management system to sync your student roster. [Learn more](#)

Connect to LMS

Archive this classroom

Once a classroom is archived, it will be deactivated but **nothing will be deleted**. You won't be able to create new assignments. Students will not be able to submit assignments. Classrooms can be unarchived.

Archive this classroom

Delete classroom

Delete this classroom

Caution: Once you delete a classroom, all contents and data—including student assignment repositories associated with this classroom—will be permanently removed. This action is irreversible. Please be certain.

Delete classroom

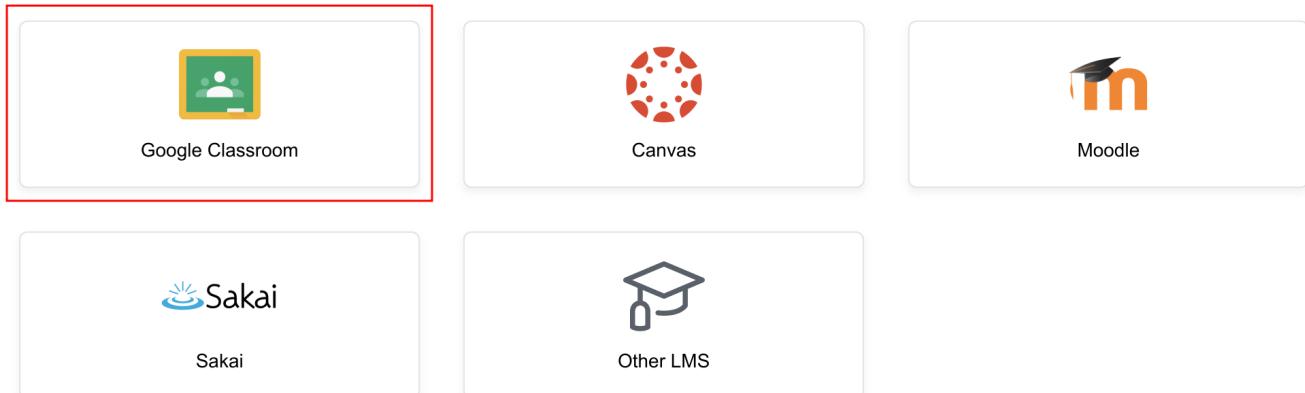
On se connecte à [Google Classroom](#) :

Last step! Add students to your roster.

Connect to a learning management system

[Skip this for now](#)

Connecting GitHub Classroom to your institution's learning management system will allow you to automatically import your roster. [Learn more.](#)



Et on sélectionne un cours :

Connect to Google Classroom

Select the Google Classroom that you want to connect to **BTS SNIR 2021-2022**.

- Administration
- Réseaux
- POO
- Programmation C/C++
- GNU/Linux

Link to Google Classroom
Skip

[GitHub Classroom](#) récupère la liste des étudiants ce qui facilitera l'attribution des devoirs par la suite.

1.3. Créer un devoir

On peut créer des devoirs (*assignments*) individuels ou de groupe :

Assignment basics

- Starter code and environment
- Grading and feedback

Let's set up the basics for your assignment.

Assignment title
TP Prérequis C++
Student assignment repositories will have the prefix: tp-prerequis-cplusplus 

Deadline (optional)

Individual or group assignment
Individual assignment 

Repository visibility
Private repositories will only be visible to the student and the classroom owners.
Public repositories will be visible to everyone, including other students.
 Private Public

Grant students admin access to their repository
Editing this after assignments are created will not retroactively change permissions.

 Pour un devoir individuel, GitHub Classroom nomme les dépôts par le préfixe du dépôt du devoir et le nom d'utilisateur GitHub de l'étudiant. Un devoir de groupe est un travail de cours collaboratif pour des groupes d'étudiants sur GitHub Classroom. Les étudiants pourront travailler ensemble sur un devoir de groupe dans un dépôt partagé, comme une équipe de développeurs professionnels.

Cancel Continue

On sélectionne ensuite le modèle de dépôt :

- Assignment basics
- Starter code and environment
- Grading and feedback

Add your starter code and choose an optional online IDE.

Add a template repository to give students starter code

Your assignment will be created with empty student repositories if you don't add starter code. Changes to starter code after students have accepted the assignment will not retroactively change existing student repositories.

(i) **Note:** All starter code must use a [template repository](#). Your starter code repository must be either in the same organization as this classroom or a public repository if elsewhere. Learn about [transferring your repositories](#).

Add a supported editor

Automatically include a link to an editor in students' repositories to give them a one-click experience for getting started coding, running, and collaborating on their code.

← Back

Cancel

Continue

On termine la création :

- Assignment basics
- Starter code and environment
- Grading and feedback

Set up autograding and feedback.

Add autograding tests

Autograding tests help provide feedback for students immediately upon submission using [GitHub Actions](#). Add a test to enable autograding.

Enable feedback pull requests

A pull request will automatically be created on all student repository submissions. Pull requests allow you to answer questions and provide feedback.

← Back

Cancel

Create assignment

On obtient une invitation que l'on peut partager avec les étudiants concernés :

"TP Prérequis C++" has been created! X

TP Prérequis C++



Individual assignment



VS Code

Enable assignment invitation URL (i)

<https://classroom.github.com/a/Y5f> Open

Delete

Edit assignment

Assignment submissions

Download Repositories ▾



Students have not accepted "TP Prérequis C++" yet

Share the invitation link with your students so they can accept the assignment.

Copy invitation link

[View my classroom](#)

1.4. Le devoir

L'étudiant accepte le devoir :

GitHub Classroom



You accepted the assignment, **TP Prérequis C++**. We're configuring your repository now. This may take a few minutes to complete. Refresh this page to see updates.

Note: You may receive an email invitation to join [btssn-lasalle84](#) on your behalf. No further action is necessary.

Et il est prêt à "travailler" sur le dépôt :



You're ready to go!

You accepted the assignment, **TP POO Point**.

Your assignment repository has been created:



<https://github.com/btssn-lasalle84/tp-poo-point-prof-snir>

We've configured the repository associated with this assignment ([update](#)).



[Open in Visual Studio Code](#)

Note: You may receive an email invitation to join **btssn-lasalle84** on your behalf. No further action is necessary.

GitHub a créé un dépôt privé dans l'organisation :

prof-snir

Edit profile

⌚ Joined 4 days ago

Organizations



Le nom du dépôt possède en suffixe le nom du compte GitHub de l'étudiant :

 **BTS SN LaSalle Avignon**

📍 France 🌐 <http://tvaira.free.fr/> 📩 vaira@lasalle84.org

[Overview](#) [Repositories 12](#) [Packages](#) [People 6](#) [Teams 6](#) [Projects](#)

[Repositories](#)

[Type](#) [Language](#) [Sort](#) [New](#)

tp-prerequis-cplusplus-prof-snir Private

tp-prerequis-cplusplus-prof-snir created by GitHub Classroom

0 stars 0 forks 0 issues 1 updated 16 minutes ago

Le dépôt contient une copie du dépôt "modèle" :

btssn-lasalle84 / tp-prerequis-cplusplus-prof-snir Private

generated from btssn-lasalle84/tp-prerequis-cplusplus

[Code](#) [Issues](#) [Pull requests](#) [Actions](#) [Projects](#) [Security](#) [Insights](#) [Settings](#)

[main](#) [2 branches](#) [0 tags](#) [Go to file](#) [Add file](#) [Code](#)

github-classroom	Setting up GitHub Classroom Feedback	9f164d1 4 minutes ago	4 commits
.github	GitHub Classroom Feedback	4 minutes ago	
deuxieme-partie	Initial commit	4 minutes ago	
premiere-partie	Initial commit	4 minutes ago	
.gitignore	Initial commit	4 minutes ago	
README.md	Add online IDE url	4 minutes ago	
compte-rendu.md	Initial commit	4 minutes ago	

[README.md](#) [Edit](#)

[Open in Visual Studio Code](#)

TP Prérequis C++

L'enseignant reçoit un email confirmant l'inscription de l'étudiant au devoir :

De GitHub <noreply@github.com>★
Sujet [GitHub] Subscribed to btssn-lasalle84/tp-prerequis-cplusplus-prof-snir notifications
Pour Moi <tvirira@free.fr>★ 16:25

Hey there, we're just writing to let you know that you've been automatically subscribed to a repository on GitHub.
btssn-lasalle84/tp-prerequis-cplusplus-prof-snir
tp-prerequis-cplusplus-prof-snir created by GitHub Classroom
<https://github.com/btssn-lasalle84/tp-prerequis-cplusplus-prof-snir>

You'll receive notifications for all issues, pull requests, and comments that happen inside the repository. If you would like to stop watching this repository, you can manage your settings here:
<https://github.com/btssn-lasalle84/tp-prerequis-cplusplus-prof-snir/subscription>

You can unwatch this repository immediately by clicking here:
https://github.com/btssn-lasalle84/tp-prerequis-cplusplus-prof-snir/unsubscribe_via_email/ACT0TPUD2KLI6VX3MK2AGLT7DWXNANCFSM4F7D43AA

You were automatically subscribed because you've been given access to the repository.

Thanks!

L'enseignant "voit" (et peut accéder à) l'ensemble des devoirs étudiants (et l'évolution des *commits*) et peut récupérer l'ensemble des dépôts (*Download Repositories*) :

Assignment submissions [Download Repositories](#)

Search by GitHub login Sort assignments by: GitHub login ▾

 prof-snir [Review](#) [View IDE](#) [Go to repo](#)

-o- 3 commits

Pour récupérer les travaux, GitHub Classroom fournit un [assistant](#) pour Windows®, MacOS® et Linux.

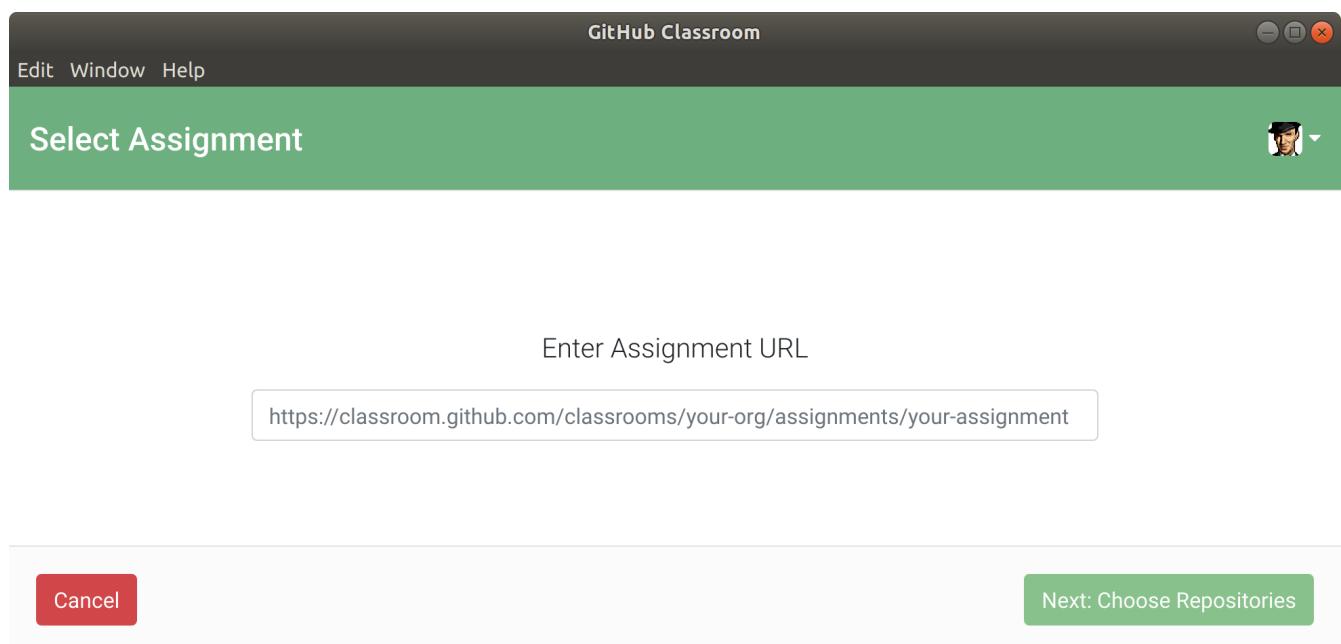
Download Repositories ▾

Download student repositories

Open Assignment in Classroom Assistant to clone student submissions.

Open in Classroom Assistant

Ou directement à partir de l'outil :



On sélectionne ensuite les travaux à récupérer :

GitHub Classroom

Edit Window Help

TP POO Point
Individual Assignment

1/1 selected Select All

 prof-snir

Back Next: Choose Destination

On peut préciser le chemin de stockage de l'archive :

GitHub Classroom

Edit Window Help

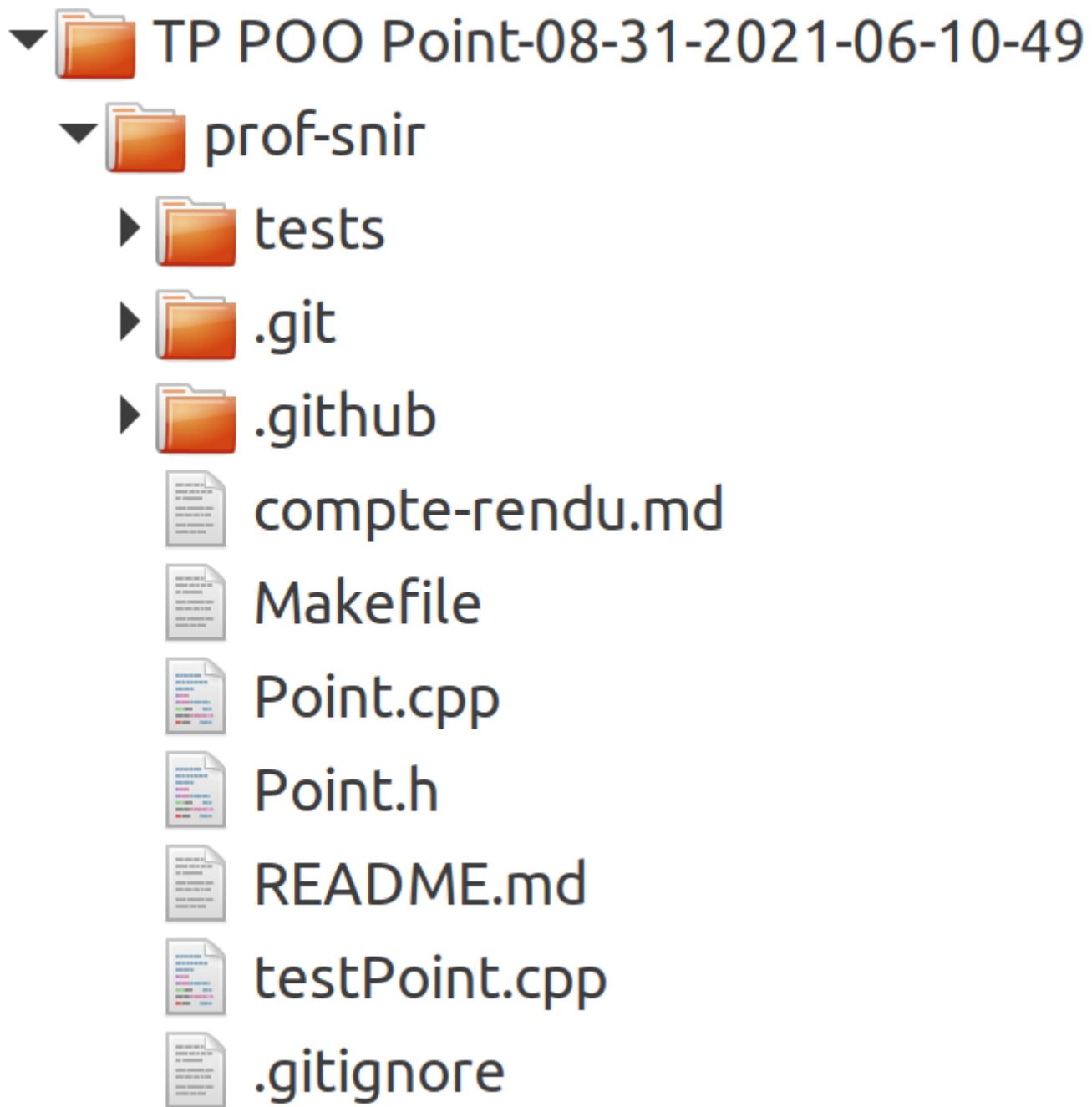
TP POO Point
Individual Assignment

1/1
Assignments Selected

 Archive Destination
/mnt/disk1/ressources/compte-rendu-tp/2021-2022 

Back Archive

On obtient :



1.5. Feedback

Lors de la création du devoir, il est possible d'y associer une *Pull Request* pour assurer une communication Étudiant/Enseignant sur ce devoir :

Enable feedback pull requests

A pull request will automatically be created on all student repository submissions. Pull requests allow you to answer questions and provide feedback.

On reçoit alors un email :

De github-classroom[bot] <notifications@github.com>☆
Sujet: [btssn-lasalle84/tp-prerequis-cplusplus-prof-snir] Feedback (#1)
Réponse à btssn-lasalle84/tp-prerequis-cplusplus-prof-snir <reply+ACTOTPXJCQ44TSYY2TDITJV7GYUAJEBVNHHDVBOJ34@reply.github.com>☆
Pour btssn-lasalle84/tp-prerequis-cplusplus-prof-snir <tp-prerequis-cplusplus-prof-snir@noreply.github.com>☆
Copie à Subscribed <subscribed@noreply.github.com>☆

Pour protéger votre vie privée, Thunderbird a bloqué l'affichage du contenu distant dans ce message.

! GitHub Classroom created this pull request as a place for your teacher to leave feedback on your work. It will update automatically. **Don't close or merge this pull request**, unless you're instructed to do so by your teacher.

In this pull request, your teacher can leave comments and feedback on your code. Click the **Subscribe** button to be notified if that happens.

Click the **Files changed** or **Commits** tab to see all of the changes pushed to `main` since the assignment started. Your teacher can see this too.

► **Notes for teachers**

Subscribed: @prof-snir

You can view, comment on, or merge this pull request online at:

<https://github.com/btssn-lasalle84/tp-prerequis-cplusplus-prof-snir/pull/1>

Commit Summary

- Setting up GitHub Classroom Feedback

La Pull Request dans GitHub :

btssn-lasalle84 / tp-prerequis-cplusplus-prof-snir (Private)

generated from btssn-lasalle84/tp-prerequis-cplusplus

Code Issues Pull requests 1 Actions Projects Security Insights Settings

Filters ▾ Q is:pr is:open Labels 9 Milestones 0 New pull request

1 Open ✓ 0 Closed Author ▾ Label ▾ Projects ▾ Milestones ▾ Reviews ▾ Assignee ▾ Sort ▾

Feedback
#1 opened 15 hours ago by github-classroom bot

Elle permet :

Feedback #1

[Open](#) github-classroom wants to merge 2 commits into `feedback` from `main`

Conversation 0 Commits 2 Checks 0 Files changed 1

 **github-classroom** (bot) commented 15 hours ago • edited

👏! GitHub Classroom created this pull request as a place for your teacher to leave feedback on your work. It will update automatically. **Don't close or merge this pull request**, unless you're instructed to do so by your teacher.

In this pull request, your teacher can leave comments and feedback on your code. Click the **Subscribe** button to be notified if that happens.

Click the **Files changed** or **Commits** tab to see all of the changes pushed to `main` since the assignment started. Your teacher can see this too.

▶ **Notes for teachers**

Subscribed: @prof-snir

 **github-classroom** (bot) and others added 2 commits 15 hours ago

Setting up GitHub Classroom Feedback  9f164d1

Création programme tarif-bateau.cpp d2a8241

Add more commits by pushing to the `main` branch on [btssn-lasalle84/tp-prerequis-cplusplus-prof-snir](#).

 **Continuous integration has not been set up**
GitHub Actions and several other apps can be used to automatically catch bugs and enforce style.

 **This branch has no conflicts with the base branch**
Merging can be performed automatically.

[Merge pull request](#)  or view command line instructions.

 Write Preview 

Leave a comment

Attach files by dragging & dropping, selecting or pasting them. 

 Close pull request [Comment](#)

1.6. Extension Visual Studio Code

Visual Studio Code possède une extension dédiée à [GitHub Classroom](#).



Elle permet de parcourir les devoirs et de commencer à travailler dessus. Elle apparaît dans l'onglet de l'extension [GitHub](#) et il faut commencer par s'authentifier. La liste des devoirs apparaît alors dans l'arborescence.

1.7. Un devoir avec auto-test

Il est possible de configurer un devoir avec des tests exécutés automatiquement pour chaque soumission ([push](#)) de code dans le dépôt.

GitHub Actions exécutera les commandes pour le test automatique dans un environnement Linux contenant le code le plus récent de l'étudiant. Il est possible d'y associer des points pour obtenir une note finale pour le devoir.

Lien : [Use autograding](#)

Il est possible d'ajouter des tests à la création du devoir ou plus tard en l'éditant :

Set up autograding and feedback.

Add autograding tests

Autograding tests help provide feedback for students immediately upon submission using [GitHub Actions](#).

Add a test to enable autograding.

TestPoint



TestAffichage



Add test ▾

Enable feedback pull requests

A pull request will automatically be created on all student repository submissions. Pull requests allow you to answer questions and provide feedback.

← Back

Cancel

Create assignment

Il existe deux méthodes distinctes : les tests d'entrée/sortie et les tests de commande d'exécution.

Add test ▾

Choose grading method

Input/Output test

Run command

Run Java

Run Node

Run Python

Run C

Run C++

Un test de commande d'exécution :

C++ test case

[See example repository](#) 

Test name

TestPoint

Setup command (optional)

make testPoint

Timeout (minutes)

10

Points (optional)

points

Save test case

Un test d'entrée/sortie :

Input/Output test case

X

Test name

TestAffichage

Setup command (optional)

Run command

make testAffichage

Inputs

Expected Output

Question 1 : constructeur par défaut

Question 2 : constructeur

Question 3 : accesseurs et mutateurs

Comparison: included ▾

Timeout (minutes)

10

Points (optional)

points

Save test case

On peut suivre l'exécution du test dans GitHub Actions :

The screenshot shows the GitHub Actions interface for the repository 'btssn-lasalle84 / tp-poo-point-prof-snir'. The 'Actions' tab is selected. A workflow named 'GitHub Classroom Workflow' is shown, with its configuration file 'classroom.yml'. There are 15 workflow runs listed. The most recent run, 'Modif Point.cpp', is highlighted and shows a green checkmark indicating success. It was triggered by a commit pushed by tvaira to the 'main' branch 11 minutes ago, with a duration of 16s.

Et dans Classroom :

The screenshot shows the GitHub Classroom interface for the assignment 'TP POO Point'. The assignment is marked as an individual assignment using VS Code. It has an invitation URL: <https://classroom.github.com/a/CS...>. The assignment has 15 commits, with the latest one passing. The 'View test' button is highlighted with a blue border.

Ici, le test n'est pas passé :

The screenshot shows the GitHub Classroom interface for the same assignment 'TP POO Point'. The status has changed to 'Latest commit failed'. The 'View test' button is highlighted with a blue border.

Les détails dans GitHub Actions :

generated from btssn-lasalle84/tp-poo-point

Code Issues Pull requests 1 Actions Projects Security

Setting up GitHub Classroom Feedback



main



-o eb6ac75

GitHub Classroom Workflow

on: push

1

Autograding

Autograding

failed 5 minutes ago in 8s

- > ✓ Set up job
- > ✓ Run actions/checkout@v2
- > ✘ Run education/autograding@v1
- > ✓ Post Run actions/checkout@v2
- > ✓ Complete job

Pour les tests de commande d'exécution, il est intéressant d'y associer des **tests unitaires**.

Il y a une exemple fourni pour C++ avec make et [Catch2](#).

[Autograding Example C++](#)

Autograding

succeeded 10 hours ago in 21s

Run education/autograding@v1

```
20  ✓ TU-1
21
22
23  g++ -std=c++11 -Wall -I. -I./tests -c -o tests/testsUnitaires.o tests/testsUnitaires.cpp
24  g++ -std=c++11 -Wall -I. -I./tests -c -o tests/testUnitaire1.o tests/testUnitaire1.cpp
25  g++ -o tests/testUnitaire1.out tests/testsUnitaires.o tests/testUnitaire1.o Tonneau.o
26  ./tests/testUnitaire1.out
27  =====
28  All tests passed (4 assertions in 1 test case)
29
30
31  ✓ TU-1
32
33  ✓ TU-2
34
35
36  g++ -std=c++11 -Wall -I. -I./tests -c -o tests/testUnitaire2.o tests/testUnitaire2.cpp
37  g++ -o tests/testUnitaire2.out tests/testsUnitaires.o tests/testUnitaire2.o Tonneau.o
38  ./tests/testUnitaire2.out
39  =====
40  All tests passed (4 assertions in 1 test case)
41
```

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