Managing Projects Using GitHub

Accentient™

GitHub.com | 2024.10

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Managing Projects Using Azure Boards

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Software version:	**GH.com**

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Managing Projects Using GitHub

Module 1

GitHub Projects

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Module Backlog

- Organizations
- Teams
- Projects
  - Project Templates
- Lab

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Organizations

Organizations

- Provide a way for teams to manage repositories, permissions, and collaboration under a centralized account, making it easier to coordinate work across multiple products
- Organizations allow for fine-grained access control, enabling teams to assign roles and manage member permissions efficiently

Visit https://tinyurl.com/2wymn95c for more information

License Plans

- GitHub offers three license plans:
  - Free
  - Team
  - Enterprise
- Each plan provides different levels of features and support
  - Additional add-ons are also available (e.g. GitHub Copilot, Codespaces, Large File Storage, GitHub Advanced Security)

Visit https://tinyurl.com/4rnx2dby to compare plans

Organizations vs. Enterprises

- A GitHub *Organization* is a group account that allows teams to manage repositories, projects, and members with basic access control and collaboration features
- A GitHub *Enterprise* is a higher-tier service designed for larger organizations, providing advanced security, compliance, administrative controls, and the option to deploy GitHub on-premises or in a cloud environment, tailored to meet enterprise-level needs
  - An *Enterprise* can contain multiple *organizations*

Visit https://tinyurl.com/4fajvrzn for more information

Teams

Teams

- Teams are containers within an organization that allow members to be organized based on roles, responsibilities, or projects
- A team can be granted specific permissions, making it easy to manage access to repositories and streamline collaboration across different parts of the organization
- Only members of the organization can join a team
  - Outside collaborators are unable to be on a team

Visit https://tinyurl.com/2sbaff49 for more information

Team Visibility

- *Visible* teams can be viewed and @mentioned by every organization member
- *Secret* teams are only visible to the people on the team and people with owner permissions
  - They're useful for hiding teams with sensitive names or members, such as those used for working with external partners or clients
  - Secret teams cannot be nested
- People who are not members of the organization cannot view any teams

Visit https://tinyurl.com/ycktw4bm for more information

Nested Teams

- Enable you to model your organization's team hierarchy
  - A parent team can have multiple child teams
- Child teams inherit the parent's access permissions
  - This simplifies permission management for large groups
- Child teams receive notifications when the parent team is @mentioned
  - This simplifies communication with multiple groups of people
- Note: You cannot nest secret teams

Visit https://tinyurl.com/ycktw4bm for more information

Projects

Projects

- Project management tools integrated within GitHub
  - Enable teams to organize, prioritize, and track work using issues, pull requests, and notes on customizable boards
  - Streamline workflows by visually managing tasks and progress
- Projects can be created for an organization or a repository

- A project is synonymous to a board, and vice versa
  - If you want a new board, you'll need to create a new project

Visit https://tinyurl.com/bdfk9xtc for more information

Projects vs. Repositories

- A GitHub *Project* is a project management tool that helps organize and track tasks, issues, and workflows across a project
- A GitHub *Repository* is used to store, manage, and collaborate on code, documentation, and other project files, serving as the core version control system for a project.

- Summary: Projects and Repositories are orthogonal

Projects vs. Issues

- GitHub Projects offers a broad, visual project management tool that organizes and tracks multiple issues and tasks across a customizable workflow, providing a higher-level view of progress
- GitHub Issues is focused on managing individual tasks or problems with a detailed, linear approach to tracking specific work items

- Summary: Projects contain Issues

User Projects

- A user project is a personal board that allows an individual user to organize and track tasks, issues, and progress
- User projects allow a user to manage their work independently of a team or organization while being functionally similar to an organization project
  - Others can be invited to read, collaborate, or be an admin

- Example: Personal Kanban board

Project Templates

Project Templates

- Project templates provide pre-defined workflows, board structures, and automation rules
- Project templates are designed to align with common project management approaches (e.g. Scrum, Kanban, etc.)
  - This enables teams to start tracking and managing their work efficiently without having to configure everything from scratch
- New templates can be created from scratch, or based off of existing projects

Visit https://tinyurl.com/yc3nhtk4 for more information

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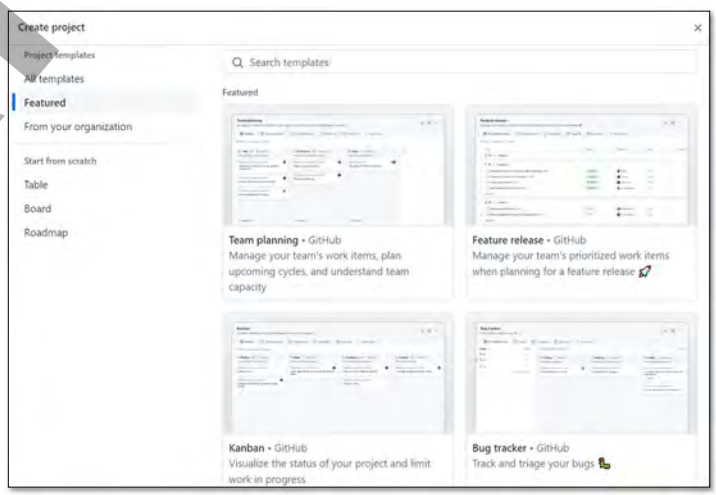
Project Templates

- Templates are predefined configurations that help you quickly set up new projects with a consistent structure
  - There are several featured templates
  - Custom templates can also be created based on existing projects in your organization



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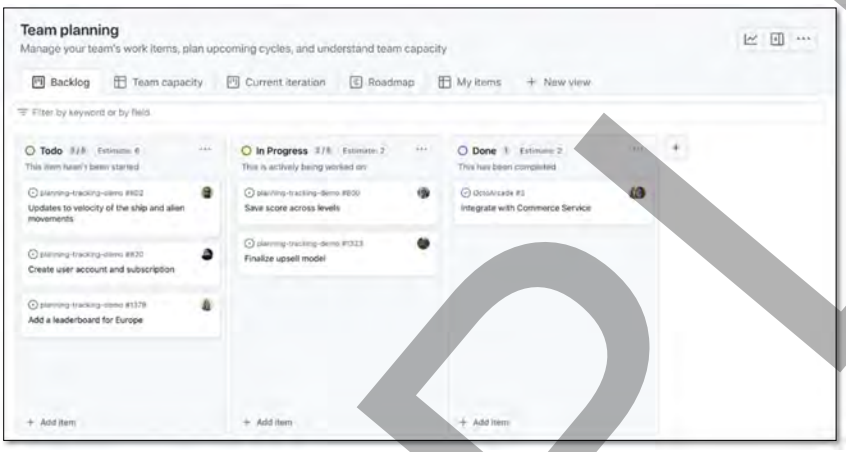
Template: Team Planning

- Use this template to manage your team's work items, plan upcoming cycles, and understand team capacity



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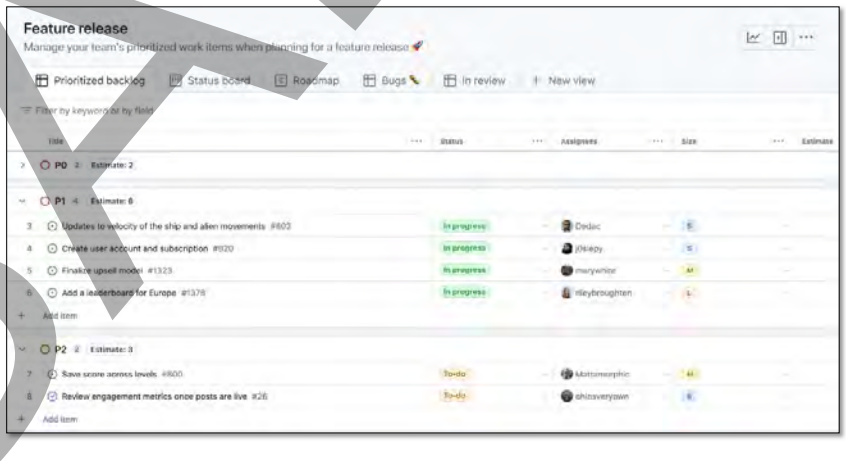
Template: Feature Release

- Use this template to manage your team's prioritized work items when planning for a feature release



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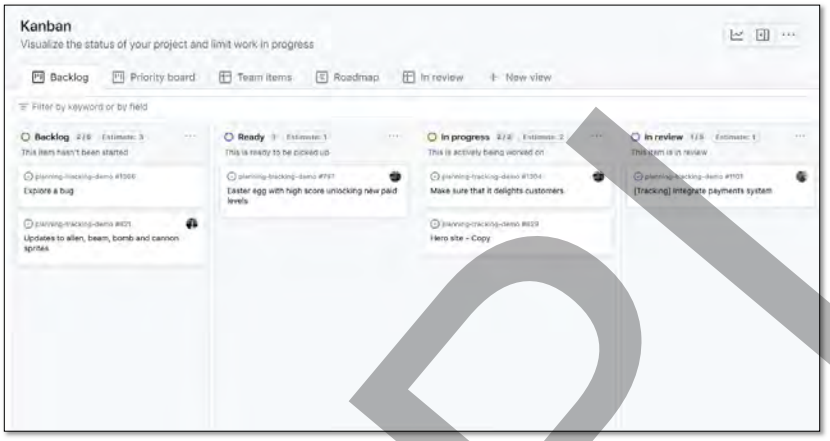
Template: Kanban

- Use this template to visualize the status of your project and limit work in progress (WIP)



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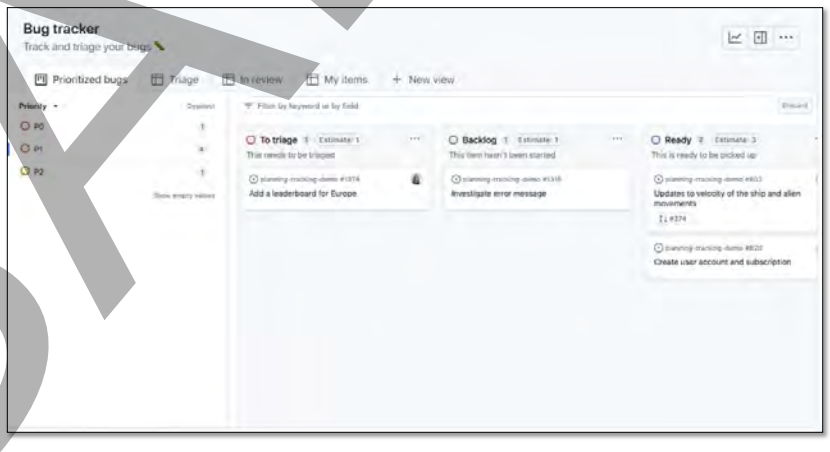
Template: Bug Tracker

- Use this template to track and triage your bugs



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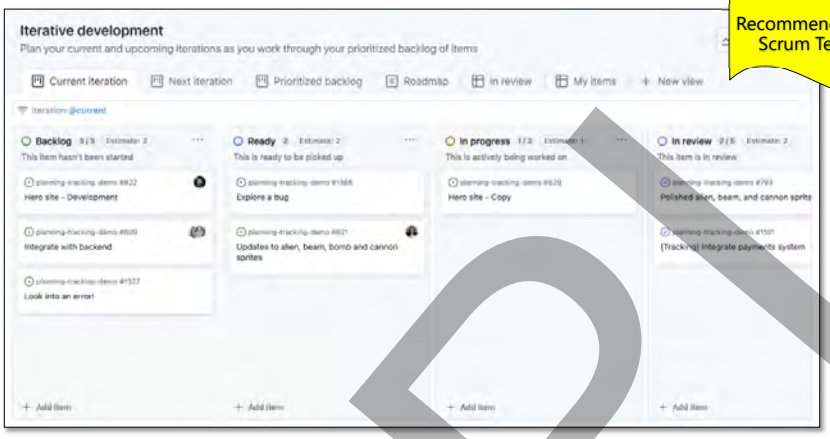
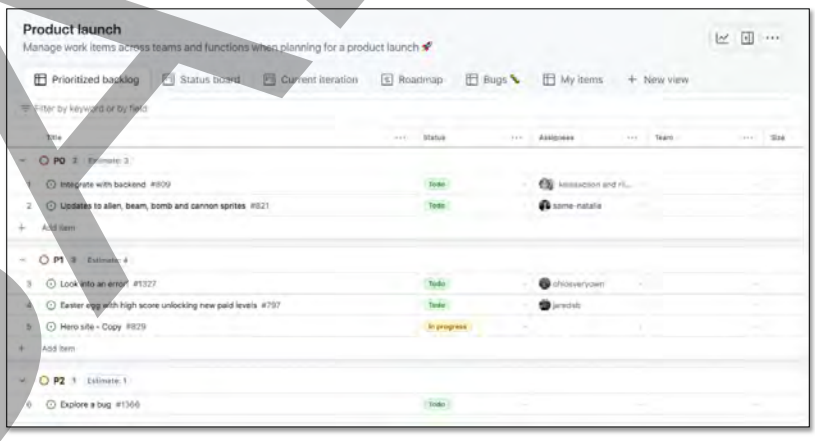
Template: Iterative Development

- Use this template to plan your current and upcoming iterations as you work through your prioritized backlog of items



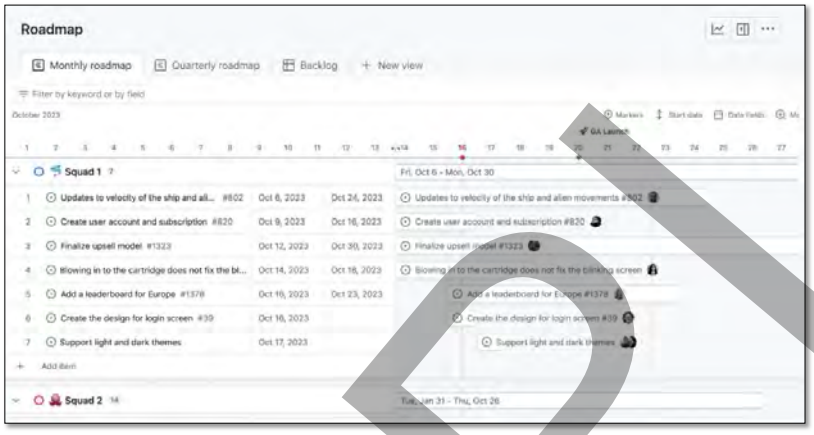
Template: Product Launch

- Use this template to manage work items across teams and functions when planning for a product launch



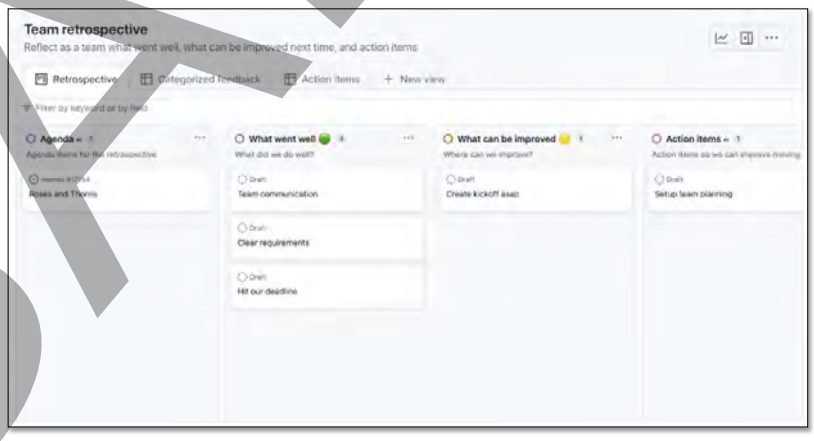
Template: Roadmap

- Use this template to manage your team's long term plans as you plan out your roadmap



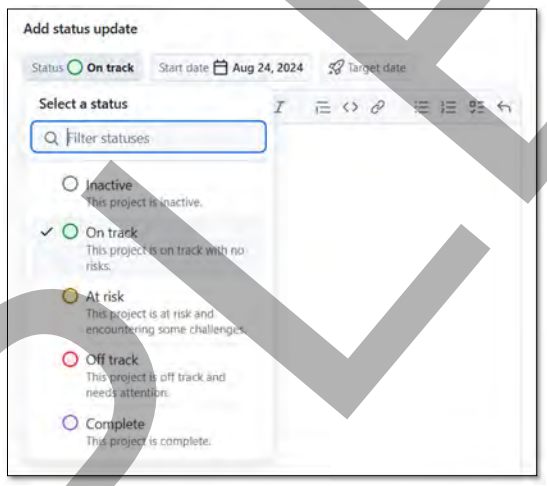
Template: Team Retrospective

- Use this template to reflect as a team what went well, what can be improved next time, and action items



Sharing Project Updates

- In addition to having a project description and README, teams can also post updates to a project that include:
  - Status (e.g. inactive, on track, etc.)
  - Start date
  - Target date
  - Status description (markdown)



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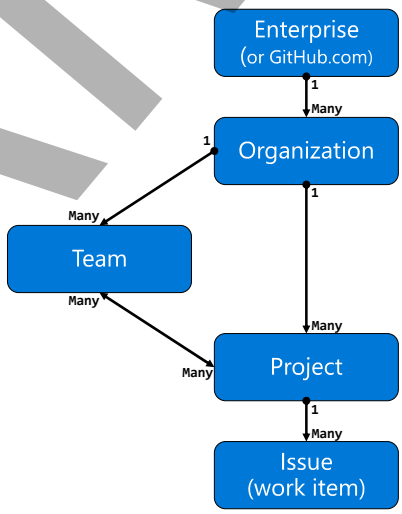
Enterprise, Organization, and Project Relationship



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Module Retrospective

What have we learned in this module?

- Organizations enhance team collaboration by providing centralized management of projects, permissions, and workflows
- Teams enable collaboration by organizing members, setting access controls, and facilitating communication for a specific group
- Projects allow you to visually organize, track, and manage work and workflows in one place
  - User projects allow individuals to manage and track their personal work
- Project templates provide pre-defined workflows, board structures, and automation rules

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Lab

30 Minutes

In this lab you will create and configure a GitHub organization, team, and project.

- Setup the learning environment
- Create a GitHub organization
- Create a GitHub team
- Create a GitHub project
- Review the Audit Log
- Create a GitHub user project (optional)

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Lab 1: Introduction to GitHub Projects

Managing Projects Using GitHub

Estimated time to complete this lab: **30 minutes**

EXERCISE 1 – SET UP THE ENVIRONMENT

Task: Install Courseware Files

In this task you will install the files required by this class.

Dependencies

- Signed in as *Administrator*

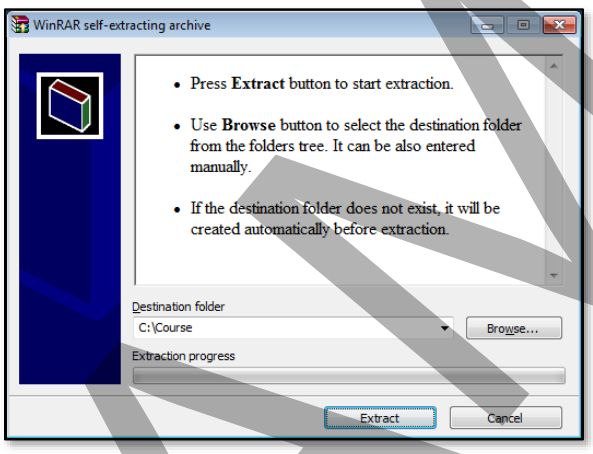
1. Verify that the **C:\Course** folder does not exist.

   Note: If this folder already exists, then your computer may have been used for a prior training class. If that is the case, then the effectiveness of the hands-on labs that follow may be diminished.

2. If necessary, copy the courseware file to your desktop.

   This file may already be on the desktop. If not, you may have to ask your instructor for help locating and/or copying this file. If you cannot locate this file, please email support@accentient.com to obtain a copy.

3. Extract the courseware files, specifying **`C:\Course`** as the **Destination folder**.



   It can take a few moments to extract the files. The folder C:\Course will be created during the process. After extracting the files, you should have one or more of the following sub-folders:

   - C:\Course\Guidance
   - C:\Course\Labs
   - C:\Course\Software

EXERCISE 2 – CREATE A GITHUB ORGANIZATION

Task: Sign-In or Sign-Up for GitHub

In this task, you will sign-in or sign-up for GitHub.

Dependencies

- Your email can be accessed from the classroom

1. Browse to **`https://github.com`** and **Sign in**.

   What is your username? _____

2. If you don't have a username, **Sign Up** and follow the process.

   You may be asked to verify your email address and that you are a human during this process. You can skip any personalization.

   What is your username? _____

3. Click your avatar in the upper right corner.

   Feel free to edit your profile and set your name, change your avatar, and set your status if you want.

   Note: You may be asked to enable 2FA. Please do so if required.

Task: Create a GitHub Organization

In this task, your team will select a team member and that person will create and configure your team's GitHub Organization.

Who will be performing this task? _____

Dependencies

- Signed-in to GitHub
- You know the usernames, full names, or email addresses of your teammates

1. If necessary, browse to `https://github.com`.

2. From the Create new dropdown in the upper right, select **New organization**.

3. Select to **Create a free organization**.

4. Enter the **Organization name**.

   This could be some combination of the class, organization, and date, such as MPG-ACC-2024.

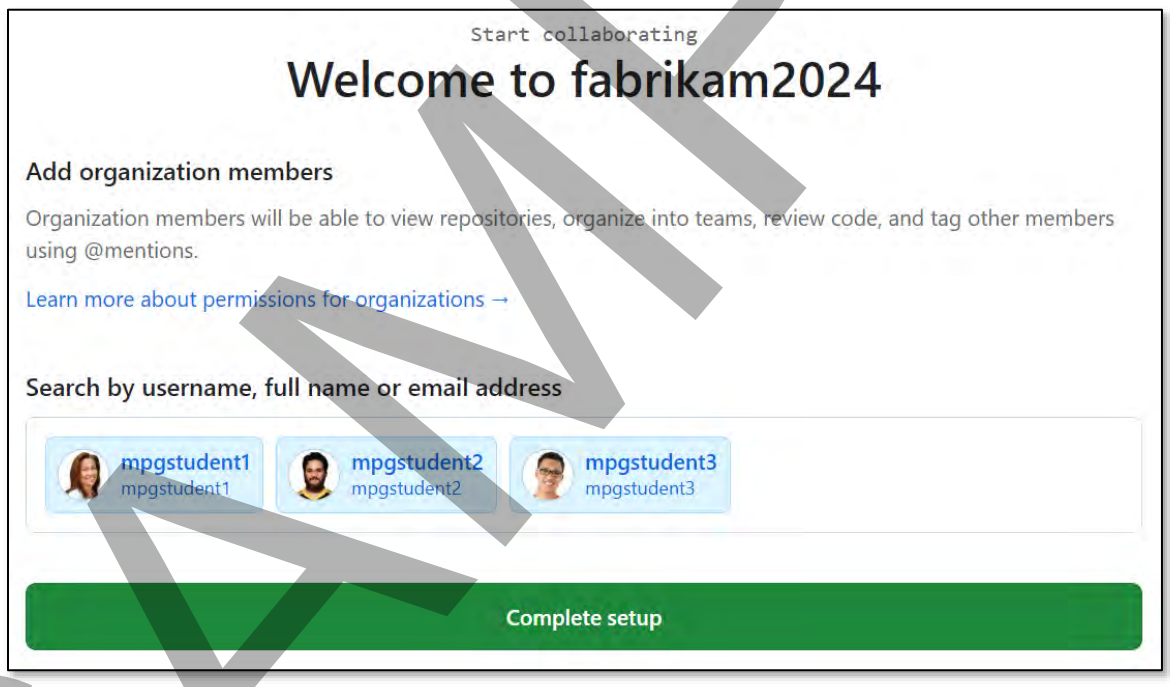
   What is your organization name? _____

5. Enter your email for the **contact email**.
6. Select **My personal account** for who the organization belongs to.

   This option will make you the organization owner, giving you full control over the organizations settings and permissions. For the business/institution option, you would be asked to agree to other terms of use. For example: provisions for company representatives to assume control of the organization, etc.

7. **Verify** your account, **accept** the terms of service, and click Next to create the organization.
8. Add your teammates and then **Complete setup**.

   You can search by username, full name, or email address. Here is an example:



   At this point, each team member will be sent an email with an invitation to join the organization.

9. Have each of your team members check their mail and join the new GitHub organization.

   Note: Make sure they are each signed in to GitHub using the correct username.

10. After your colleagues have joined the organization, press **F5** to refresh the Organization home page.

    You should now see the all the people listed, like this example:

    You can invite additional people to the organization down the road.

11. From the organization's home page, click **Settings**, set the following values, and click **Update profile**.

    - Organization display name: **Fabrikam Fiber**
    - Description: **Fabrikam Fiber products and services**

12. **Upload** a new picture, selecting something from **C:\Image\Labs\Photos\Organization**.

13. Click **People** at the top.

14. Click the **…** settings button to the right of one of your teammates and select **Change role.**

15. Select **Owner** and click **Change role**.

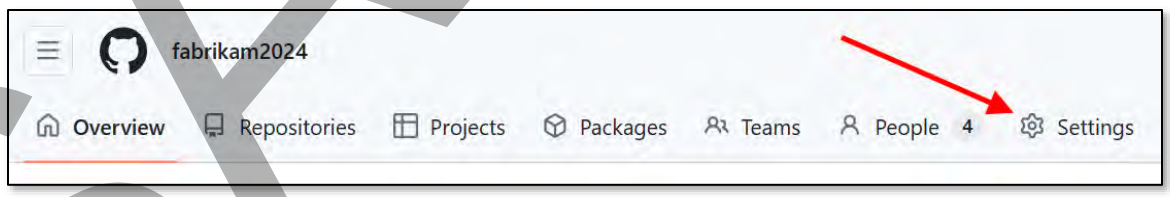
16. Repeat the above steps to make everyone on your team an Owner.

    If an organization only has one owner, the organization's projects can become inaccessible if the owner is unreachable. It's recommended to have at least two organization owners. Also, it means that you don't have to do all the configuration work in this class. You're welcome.

    Note: Each user may receive an email notification about becoming an organization owner.

17. After a moment, have your teammates refresh their organization home page.

    They should now see a Settings option, like this example:



EXERCISE 3 – CREATE A GITHUB TEAM

Task: Create the Avengers Team

Teams are used to manage access for people in an organization, and for sending notifications. Organization owners and team maintainers can assign permissions to organization assets such as repositories. Organization members can send a notification to an entire team by mentioning the team's name. Teams can only be made up of members of your organization, outside collaborators are unable to be on a team.

In this task, your team will self-organize and select a team member who will create a team within the organization.

Who will be performing this task? _____

Dependencies

- Signed-in to GitHub

1. If necessary, browse to your organization's home page.

   Example: https://github.com/fabrikam2024

2. Click **Teams** at the top.
3. Click **New team**.
4. Name the team **Avengers**.

   How will you "mention" this team within GitHub? _____

5. Set the Description to **Avengers Scrum Team**.

   Is the team *Visible* or *Secret* by default? _____

   Are *Team notifications* enabled or disabled by default? _____

6. Leave the default settings and click **Create team**.
7. Have the others on the team go to the **Avengers** team page and add themselves as a member.

   When all of your team members have been added to the Avengers team, you can proceed.

   For fun, someone can go to the team Settings page and upload a new picture. Some ideas can be found in C:\Image\Labs\Photos\Teams.

Task: Create Additional Teams (Optional)

In this task, your team will self-organize and create some additional teams.

1. If necessary, browse to your organization's home page.

   Example: https://github.com/fabrikam2024

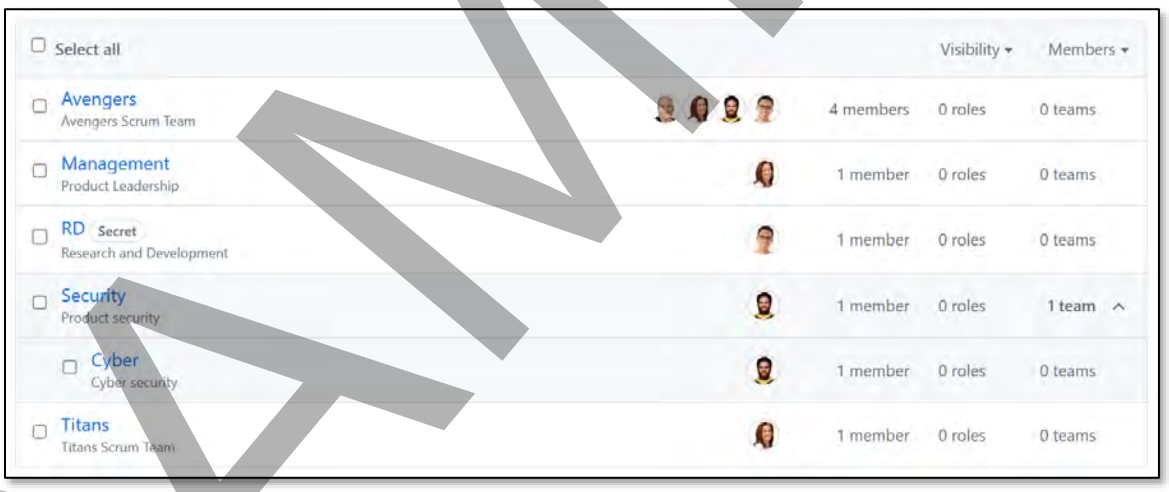
2. Click **Teams** at the top.

   How many teams are listed? _____

3. Create the following teams:

Team name	Description	Parent team	Visibility	Notifications
Titans	Titans Scrum Team		Visible	Enabled
Management	Product Leadership		Visible	Enabled
Security	Product security		Visible	Enabled
Cyber	Cyber security	Security	Visible	Enabled
RD	Research and Development		Secret	Enabled

   When finished, your list of teams should look something like this:



   Note: These teams will only have one member, which is the person who created it. Also, we won't be using these teams in class.

EXERCISE 4 – CREATE A GITHUB PROJECT

Task: Create the SupportWeb Project

A project is an adaptable collection of items that you can view as a table, a Kanban board, or a roadmap and that stays up-to-date with GitHub data. Your projects can track issues, pull requests, and ideas that you note down.

In this task, your team will self-organize and select a team member to create the SupportWeb project.

Dependencies

- Signed-in to GitHub

1. If necessary, browse to your organization's home page.

   Example: https://github.com/fabrikam2024

2. Click **Projects** at the top.

3. Click **New project** and review the templates.

   Note: You may have to click *View all* to see all the templates.

   How many *Featured* templates are listed? Templates *from your organization*? _____

4. In **Featured** templates, select the **Iterative development** template.

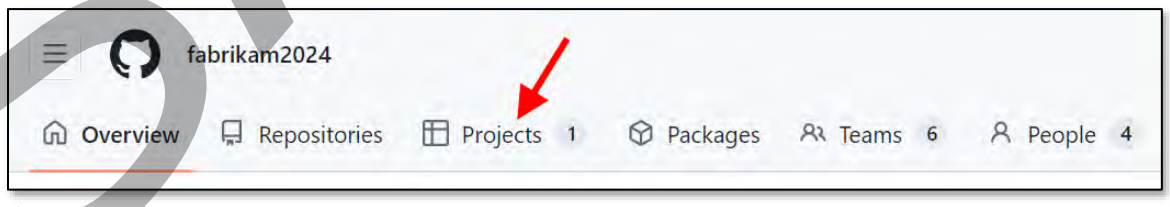
   The templates allows your team to plan current and upcoming iterations (Sprints) by using a prioritized (ordered) backlog. This is a good template for Scrum Teams.

5. Set the Project name to **SupportWeb** and click **Create project**.

   After a brief moment, the project will be created and a multi-column board will be displayed. We will interact with this board in the next lab.

6. Have your teammates visit the newly-created **SupportWeb** project homepage.

   If they don't want to type in the URL (and nobody does), they can refresh their page and click Projects at the top of the organization homepage to find the SupportWeb project.



Task: Configure the SupportWeb Project

In this task, your team will self-organize and select a team member who will configure the project.

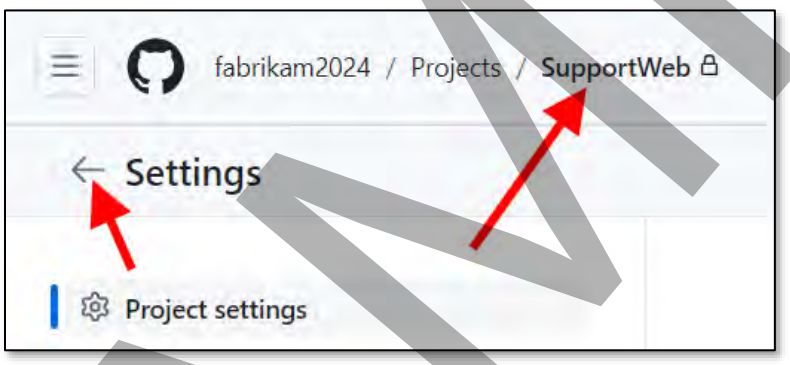
Dependencies

- SupportWeb project created

1. From the … menu in the upper right, select **Settings**.
2. Set the Short description to **Fabrikam Fiber support website**.
3. In the README field, paste the contents of **C:\Image\Labs\Lab01\FabrikamWeb-README.md.txt**.
4. Click the **Preview** tab to review the markdown.

   Feel free to make any changes you want.
5. Scroll down and click **Save changes**.
6. Return to the **SupportWeb** project homepage.

   You can do this by clicking the back arrow at the top, or by clicking SupportWeb in the breadcrumb navigation, like in this example:



7. Have everyone click **Add status update** at the top right.

   This is a quick way to view project title, description, and README. Changes can be made right here.

   Don't make any changes.

Task: Update the Project Status

In this task, your team will self-organize and select a team member who will update the project status.

Dependencies

- SupportWeb project created

1. Click **Add status update** if necessary.
2. Scroll down and click **Add update**.

   You can keep your team up to date and share high-level overviews, which people can use to determine the status of your project. You can set a status, such as "On track" or "At risk", to allow people to quickly determine the current state of the project. You can also set start dates and target dates. Your status update can also contain a message that supports formatting with Markdown.

3. In the **Write** tab, paste the contents of **C:\Image\Labs\Lab01\FabrikamWeb-Status.md.txt**.
4. Click the **Preview** tab to review the markdown.

   Feel free to make any changes you want.

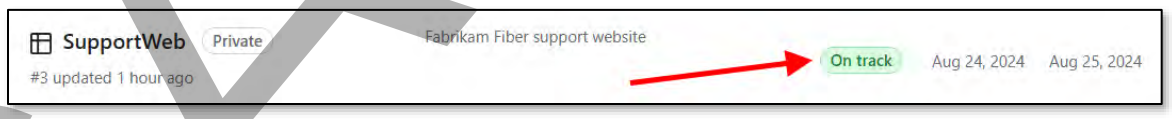
5. Click the **Status** dropdown and select **On track**.
6. Click **Start date** and ensure that today's date is selected.
7. Set the **Target date** to tomorrow's date.

   That is a pretty short timeline!

8. Click **Save update** and close the panel.
9. Have everyone return to the **SupportWeb** project homepage and refresh the page.

   Do you see the *On track* status in the upper right? _____

   Project status is also displayed next to each project on the organization's Projects page, like this:



   Status history is maintained, so if the status changes, you can see the prior status(es) and who set them and when.

EXERCISE 5 – REVIEW THE GITHUB AUDIT LOG

Task: Review the GitHub Audit Log

The audit log allows organization admins to review the actions performed by members of your organization. It includes details such as who performed the action, what the action was, and when it was performed.

In this task you will become familiar with the audit log by reviewing recent actions.

1. If necessary, browse to your organization's home page.

   Example: https://github.com/fabrikam2024

2. Click **Settings** at the top.

3. Scroll down and select **Logs** > **Audit logs**.

   About how many entries are there (roughly) ? _____

   This log probably isn't very interesting because it only contains entries for the last hour or two. In practice, you may need to use the various filtering controls to help find what you are looking for. By default, only events from the past three months are displayed.

4. Find a recent event and click the **…** in its lower right.

   This will expand all of the details of the event, like this example:

5. In the Search field, enter **`action:org.add_member`**.

   This will find those actions where a member was added to the organization.

   How many entries were returned? _____

6. **Clear** the current search filter.
7. Find an entry made by a teammate and click on their underlined username (not their avatar).

   This is a quick way to filter the log by *actor*. You can do this for *actions* and even *country*.
8. **Clear** the current search filter.

   Which teammate has the most entries? _____
9. In the Search field, enter **`-actor:`***`<username>`*, entering the username above, like this example:

   This is a quick way to reduce noise in the audit log, such as excluding those events create by you. There are many ways to search and filter. Visit https://tinyurl.com/3vzetced to learn more.
10. **Clear** the current search filter.
11. Click **Export**.

    Notice that you can export as JSON or CSV.
12. Select **CSV**.

    It might take a moment to prepare and download the file. Don't close the window while the export is being prepared. When finished, it will prompt you to download a compressed file. Feel free to download, extract, and review the file.
13. Click **Settings** at the top.

    By default, GitHub does not display the source IP address for events in your organization's audit log. Optionally, to ensure compliance and respond to threats, you can display the full IP address associated with the actor responsible for each event. Actors are typically users, but can also be apps or integrations.
14. **Enable source IP disclosure** and click **Save**.
15. Return to the list of Events.

    Do you see IP addresses listed now? _____

    Visit https://tinyurl.com/3es6d88y to learn more about this feature.

EXERCISE 6 – CREATE A GITHUB USER PROJECT (OPTIONAL)

Task: Create a User Project

User projects provide a personal board for an individual to organize and track their work. These projects help users manage tasks, plan development, and visualize progress using customizable boards and automation, independent of organization-level projects.

In this task, you will create a user project.

Dependencies

- Signed-in to GitHub

1. Browse https://github.com, leaving your organization and going to your personal dashboard.
2. From the Create new dropdown in the upper right, select **New project**.

3. Click **New project**.
4. Select **Board** to start from scratch.

   A simple board can be used to visualize your work across customizable columns. You can switch to a table or roadmap later, if you change your mind.
5. Set the Project name to **My Learning Journey** and click **Create project**.

   After a brief moment, the project will be created and a simple task board will be created.
6. Click the **…** in the upper right of the Todo column, select **Edit details**, change the Label text to **Things to Learn**, and click **Save**.
7. Change the other two columns to **Things I'm Learning** and **Things I've Learned** respectively.

   You now have a Kanban board you can use for your personal learning journey, like this example: