Open Source Tools(cs-19)

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Git and Github

- Version control with Git allows multiple people to collaborate on projects, track changes over time, and maintain a detailed history of the project. Here's a basic overview of how to use Git for version control.
- Git is a an Open Source distributed version control system that is available for free under the GNU General Public License

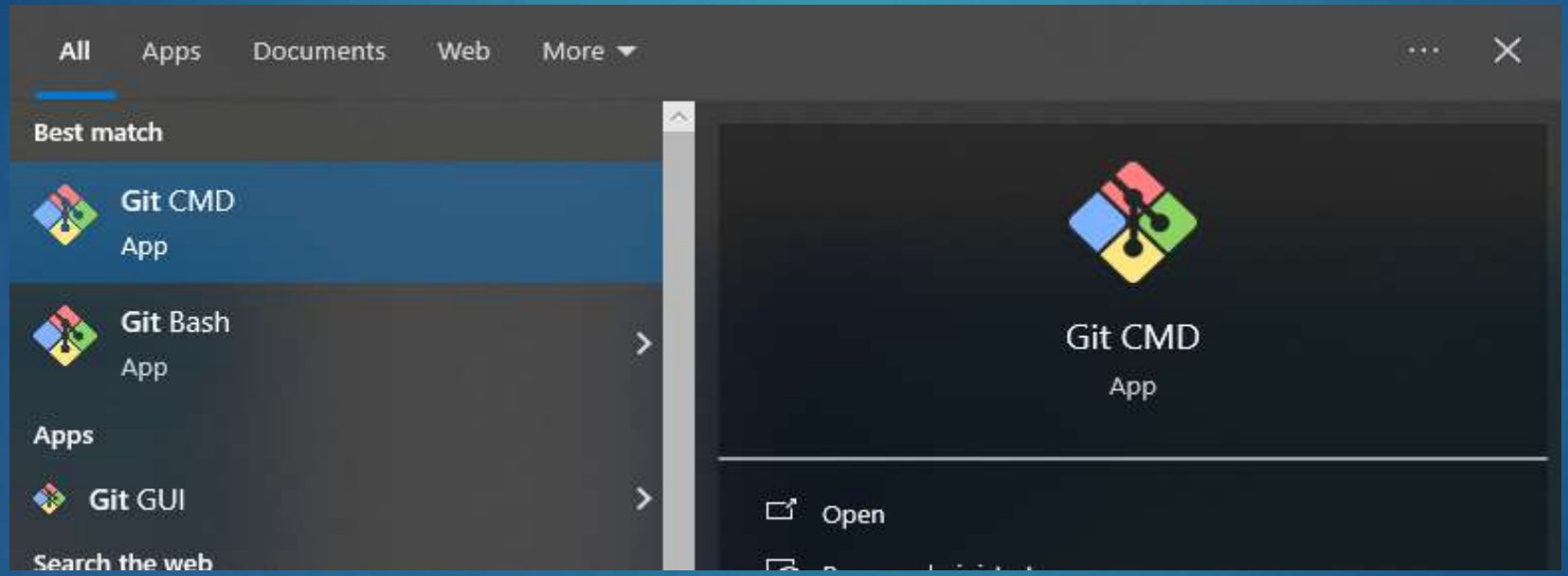
Git and Github

- Git is open source software maintained by Linux, while Microsoft owns GitHub

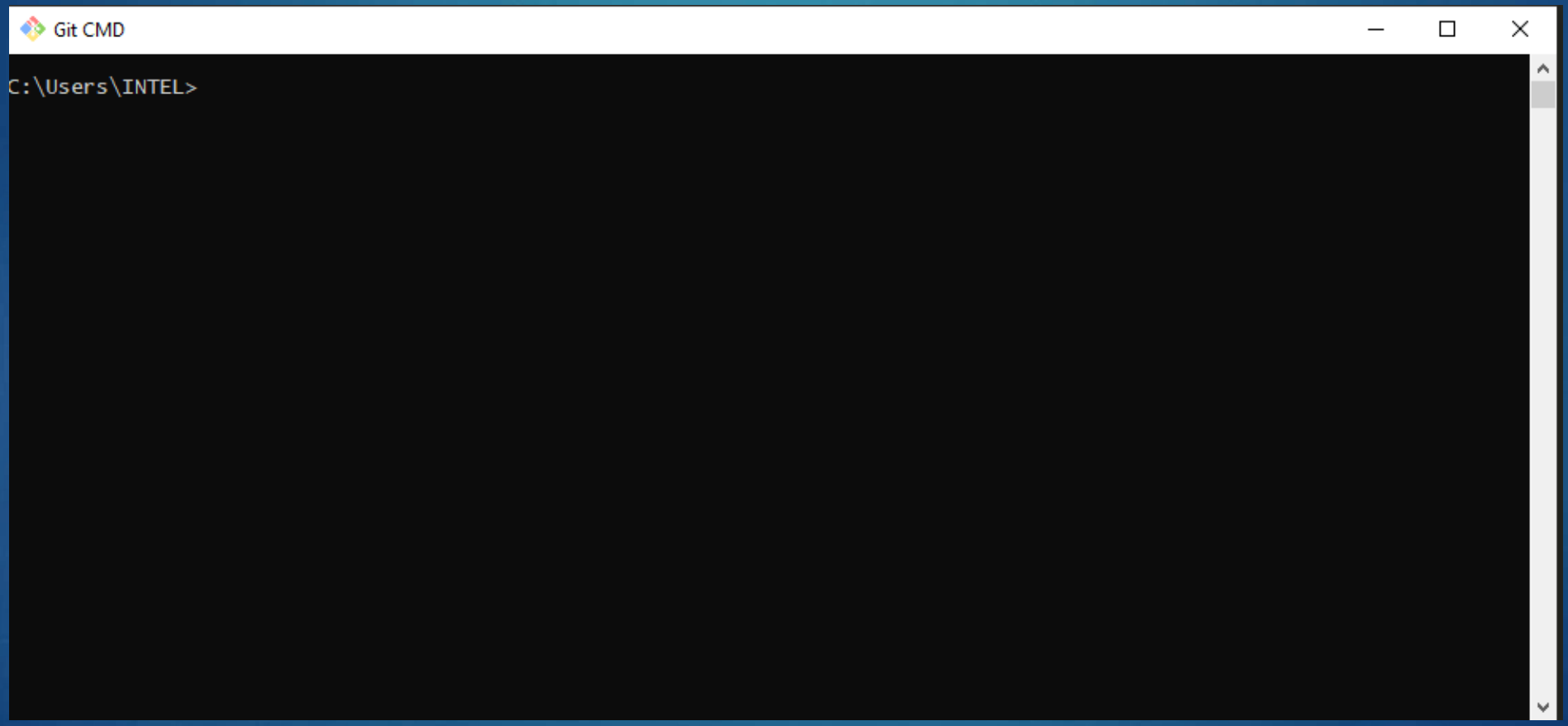
Set Up Git

- **Install Git:** You can download Git from git-scm.com
- Configuration: Set up your username and email so Git can track who made changes.
- git config --global user.name "Your Name" git config --global user.email your.email@example.com
- **Initialize a Git Repository:**
- To start tracking a project, initialize a Git repository in the project's folder:
- git init

Git and Github



Git and Github



Set Up Git

- Track Changes:
- Check status: Use git status to see the current state of your working directory
- git status

Set Up Git

- **Repository (Repo):** A directory where Git tracks files and their history.
- **Commit:** A snapshot of changes in the repository. Every commit has a unique ID.
- **Branch:** A separate line of development. main (or master) is the default branch.
- **Merge:** Combining changes from one branch into another.

Set Up Git

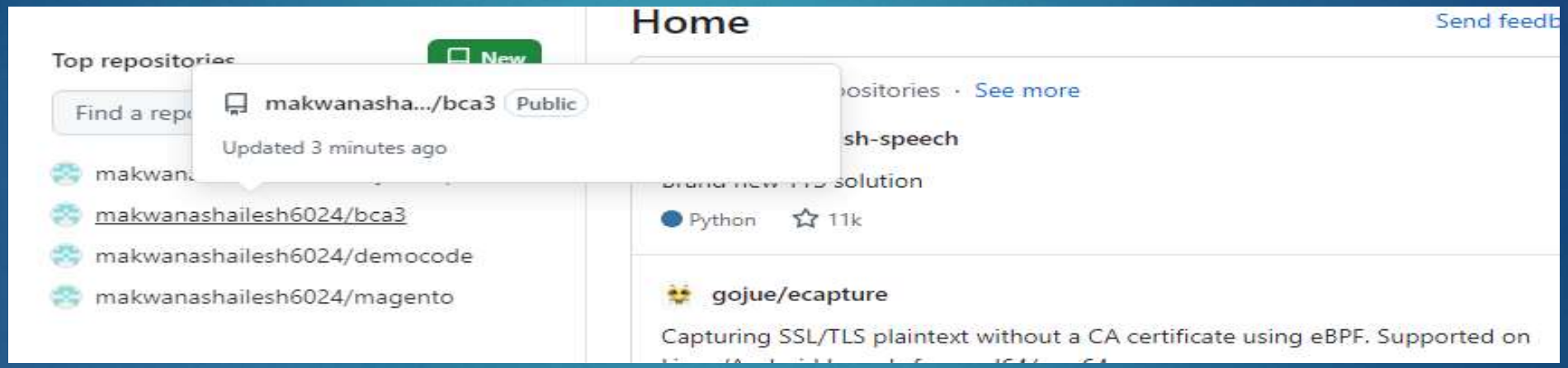
- **Clone**: A copy of a Git repository that you can work on locally.
- **Push**: Sending your local commits to a remote repository.
- **Pull**: Fetching changes from a remote repository and merging them into your local branch.

Common Git Commands

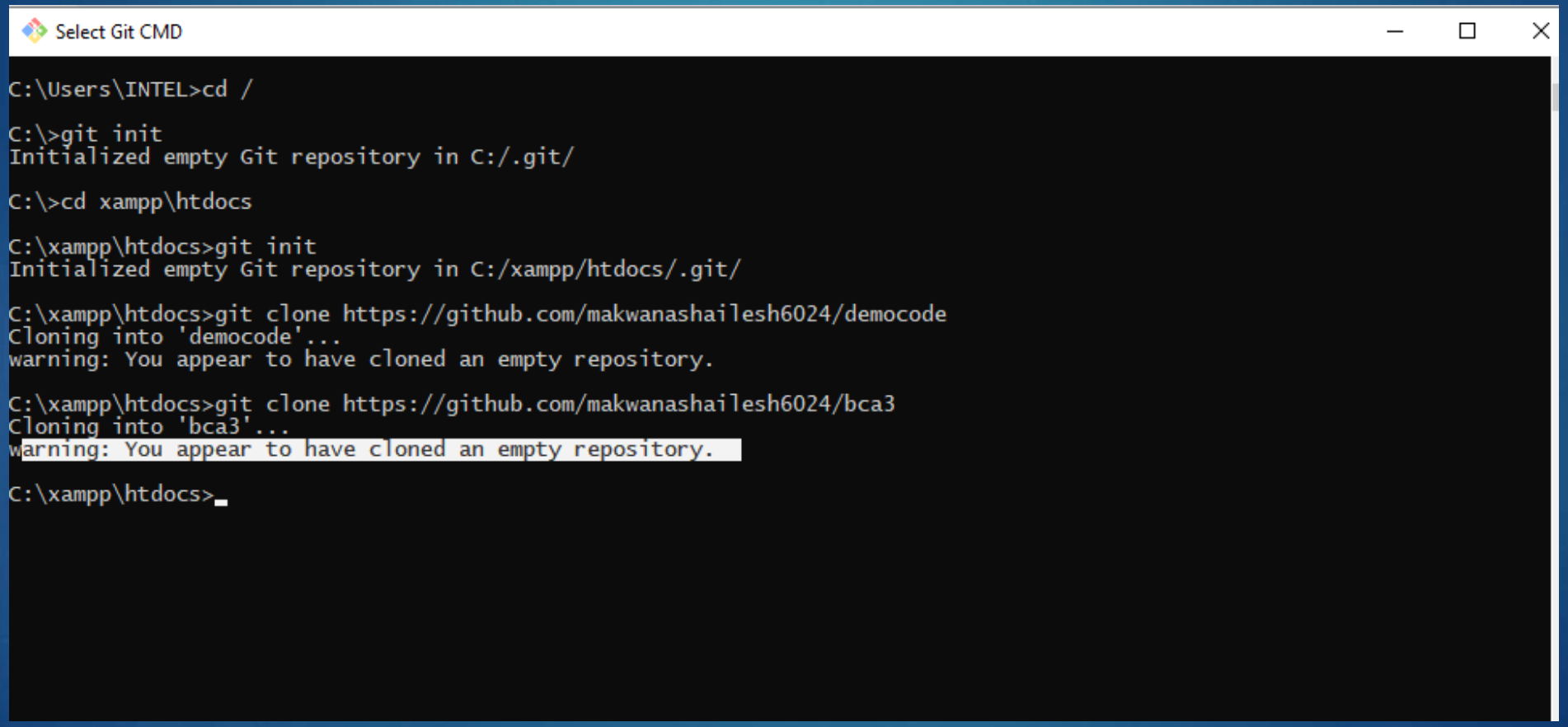
- **Initialize a Repository:**
- git init
- **Clone a Repository:**
- **git clone** https://github.com/makwanashailesh6024/mywordpress
- **Check the Status:**
- git status

Create Repo and Clon video

- https://www.loom.com/share/01082ce30cd043b8adfa7512aaa852f9



Create Repo and Clon video



git info

```
C:\xampp\htdocs\bca3>git status
On branch main

No commits yet

Untracked files:
  (use "git add <file>..." to include in what will be committed)
        inndex.php

nothing added to commit but untracked files present (use "git add" to track)

C:\xampp\htdocs\bca3>
```

git add && git commit

- https://www.loom.com/share/cabd6516f7e442d6b37cecefd2f14f67?focus_title=1&muted=1&from_recorder=1

Common Git Commands

- git add <file_name>
- Commit Changes:
- git commit -m "Commit message“
- Create a New Branch:
- git branch <branch_name>
- Merge a Branch:
- git merge <branch_name>
- Push Changes to Remote Repository:
- git push origin <branch_name>

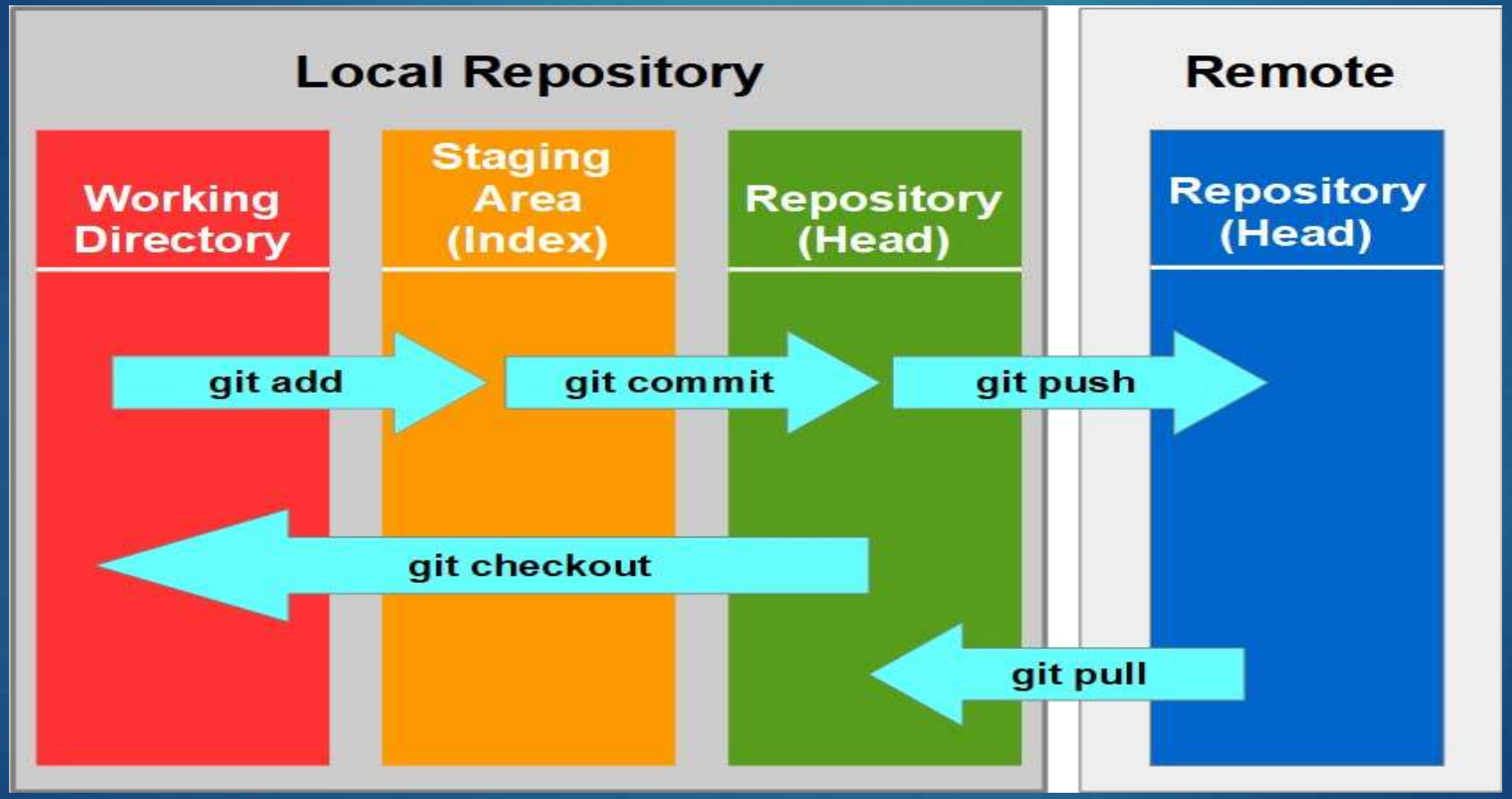
Advantages

- **Local Repository:** Every user has a full copy of the repository, including its entire history. This allows for offline work and reduces the risk of data loss.
- **Collaboration:** Multiple users can work on different parts of the project simultaneously without interfering with each other's work. Changes can be shared and merged as needed.

Advantages

- **Easy Branching:** Git makes it simple to create, switch between, and delete branches. This is useful for developing features, testing, or fixing bugs in isolation without affecting the main codebase.

Git Fundamentals



Open source project management

- Project management is the process of using skills, tools, and techniques to plan, organize, and execute a project to meet its objectives
- A project management methodology is a set of principles and practices that guide you in organizing your projects to ensure their optimum performance.

Open source project management

- Project management is the application of processes, methods, skills, knowledge and experience to achieve specific project objectives according to the project acceptance criteria within agreed parameters. Project management has final deliverables that are constrained to a finite timescale and budget.

How to choose the right project management methodology

- There are lots of factors that will impact which project management methodology is right for your project, team, and organization. Here's a quick breakdown of some of the key considerations that can help you decide
- **Cost and budget:** On a scale of $ to $$$, what sort of budget are you working with? Is there room for that to change if necessary, or is it essential that it stays within these predetermined limits?

How to choose the right project management methodology

- **Team size:** How many people are involved? How many stakeholders? Is your team relatively compact and self-organizing, or more sprawling, with a need for more rigorous delegation?
- **Ability to take risks:** Is this a huge project with a big impact that needs to be carefully managed in order to deliver Very Serious Results? Or is it a smaller-scale project with a bit more room to play around?

How to choose the right project management methodology

- **Flexibility:** Is there room for the scope of the project to change during the process? What about the finished product?
- **Timeline:** How much time is allotted to deliver on the brief? Do you need a quick turnaround, or is it more important that you have a beautifully finished result, no matter how long it takes?

project management methodology examples and frameworks

- Waterfall methodology
- Agile methodology
- Scrum methodology
- Kanban methodology
- Scrumban methodology
- eXtreme programming (XP) methodology
- Adaptive project framework (APF) methodology
- Lean methodology
- Critical path method

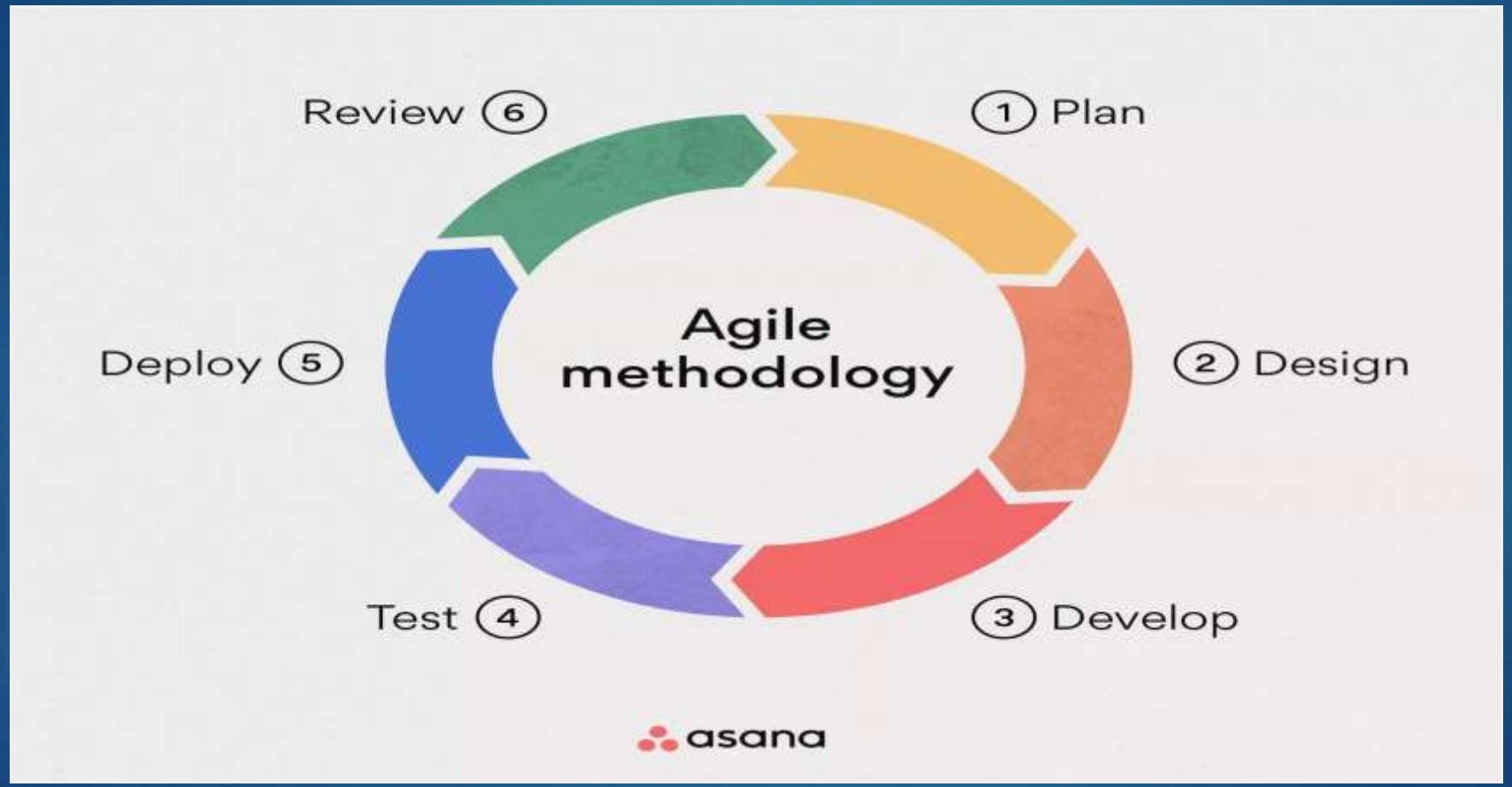
project management methodology examples and frameworks

- Critical chain project management
- New product introduction (NPI)
- Package enabled reengineering (PER)
- Outcome mapping
- Six Sigma
- PMI's PMBOK
- PRINCE2 methodology
- Rapid application development (RAD) methodology

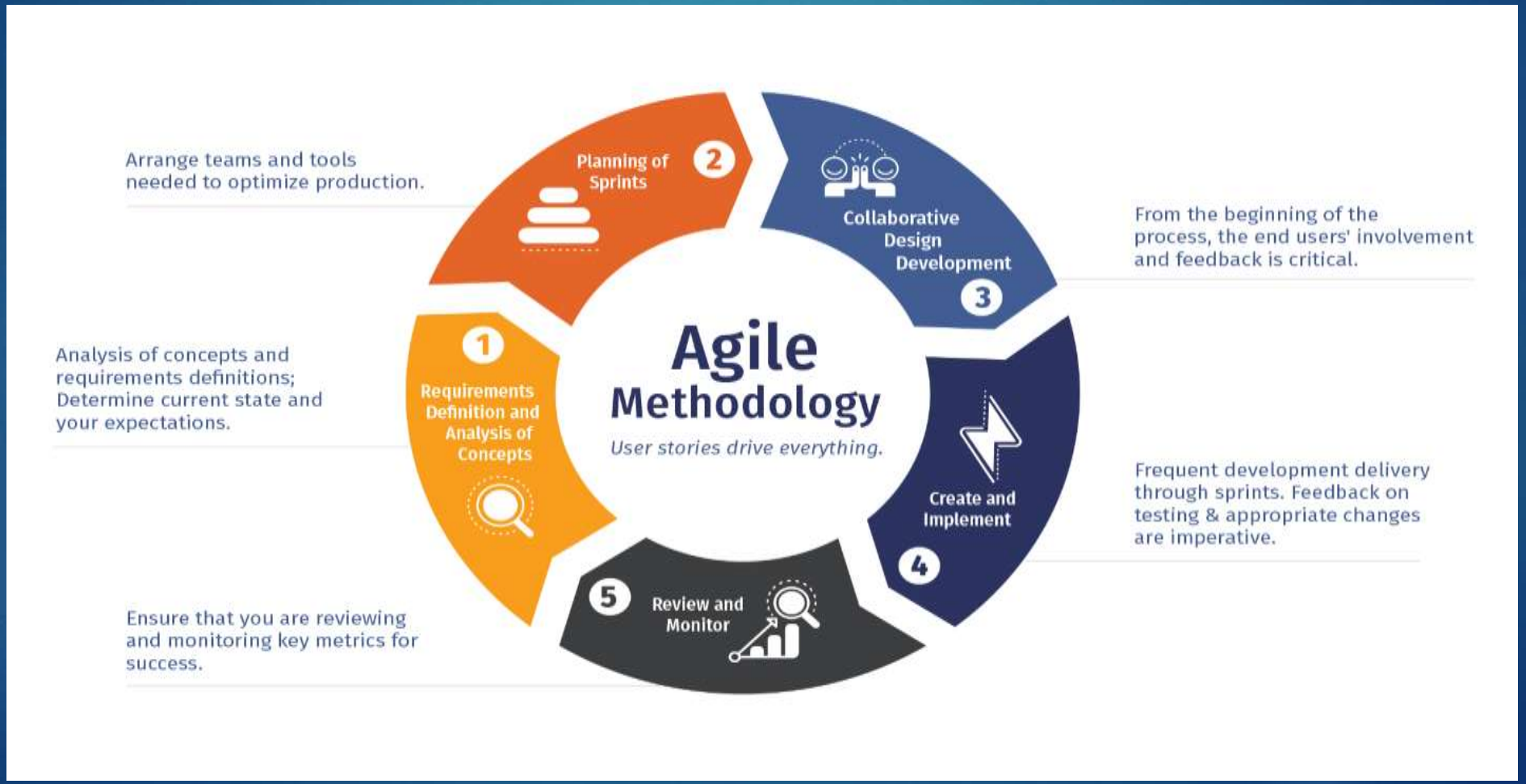
What is the Agile methodology?

- Agile methodology is a project management approach that emphasizes continuous improvement and collaboration, and involves breaking projects into phases
- **Some principles of Agile methodology include:**
- Satisfying customers through early, continuous improvement and delivery
- Welcoming changing requirements, even late in the project
- Delivering value frequently
- Building projects around motivated individuals
- The most effective way to communicate is face-to-face

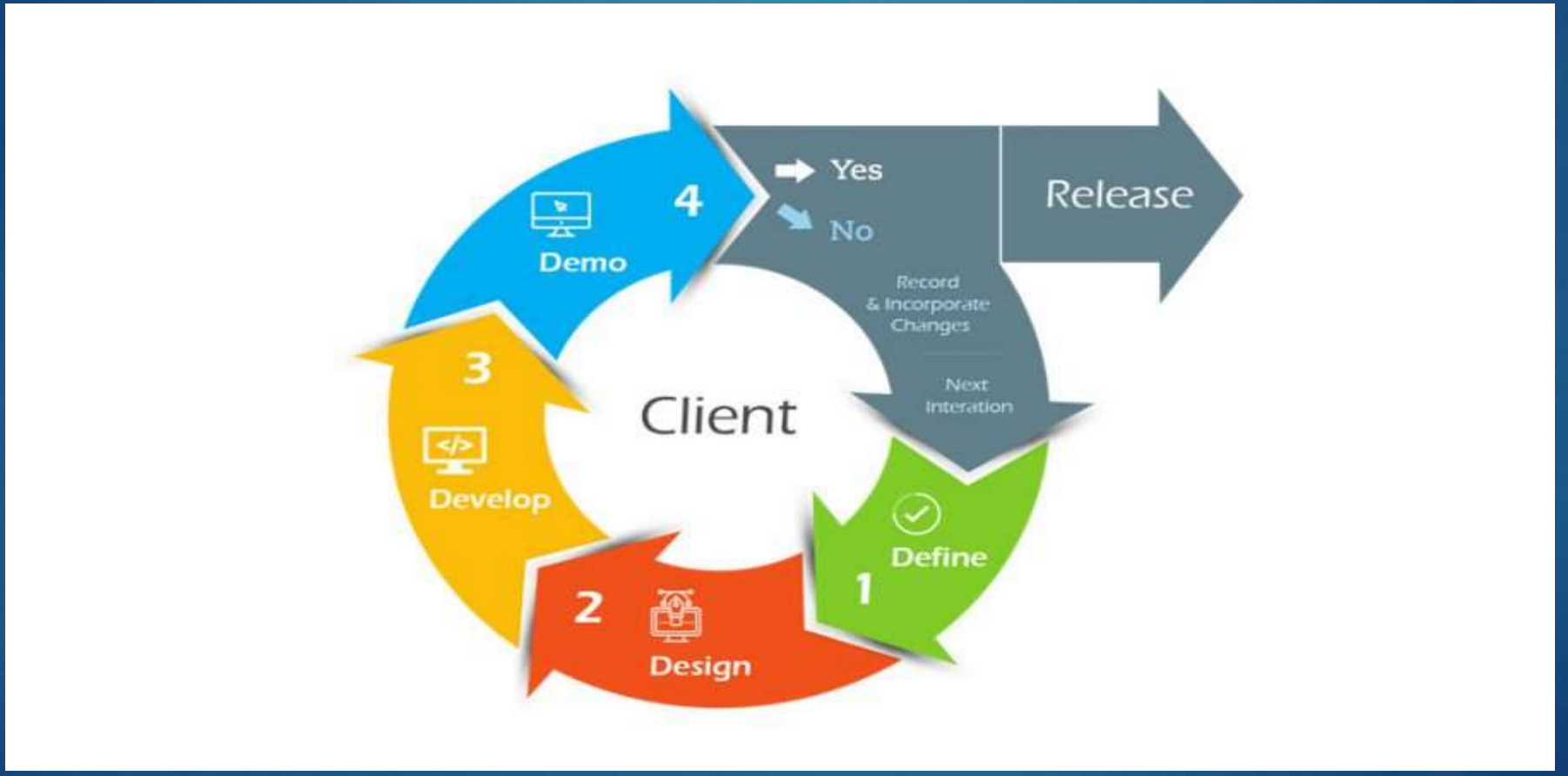
Agile methodology



Agile methodology



Agile methodology



Agile methodology

- Agile methodology is a project management framework that breaks projects down into several dynamic phases, commonly known as sprints. In this article, get a high-level overview of Agile project management, plus a few common frameworks to choose the right one for your team.

What is Project Planning?

- A project consists of five different phases: initiation, planning, execution, monitoring and controlling, and closure. Planning is the second phase of the project life cycle, where a plan after the initiation phase is made so the process of execution may begin. The project plan serves as a roadmap for the entire process of project management.

What is Project Planning?

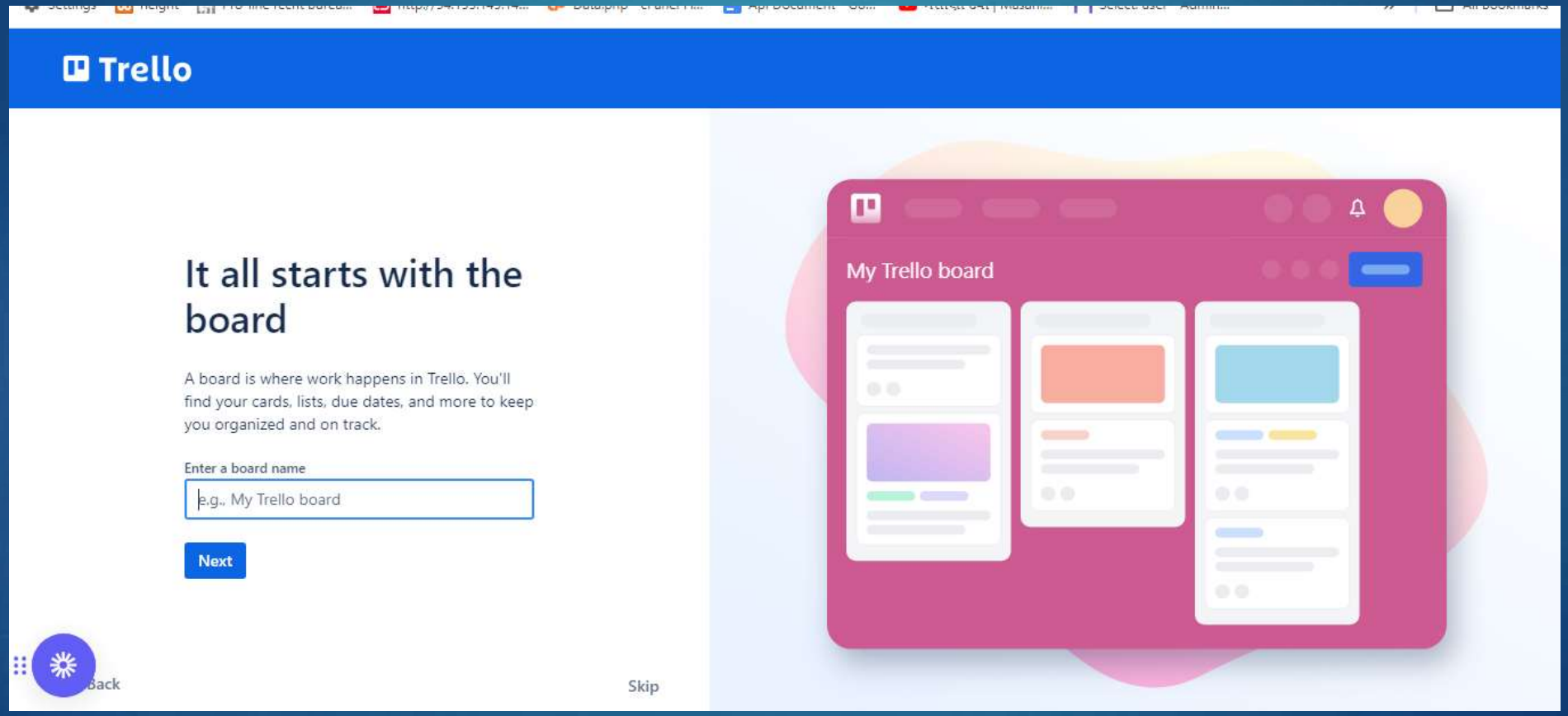
Project planning involves

- **Defining Objectives :**The definition must include what the project is comprised of, its main aim, what it intends to accomplish, and what marks its closure
- **Explaining the Scope:**The explanation provides details on what the project intends to solve and who will benefit from the project
- **Scheduling Tasks:**Each task is given a start date, an end date, and provides an estimate of how much time a task would take to complete

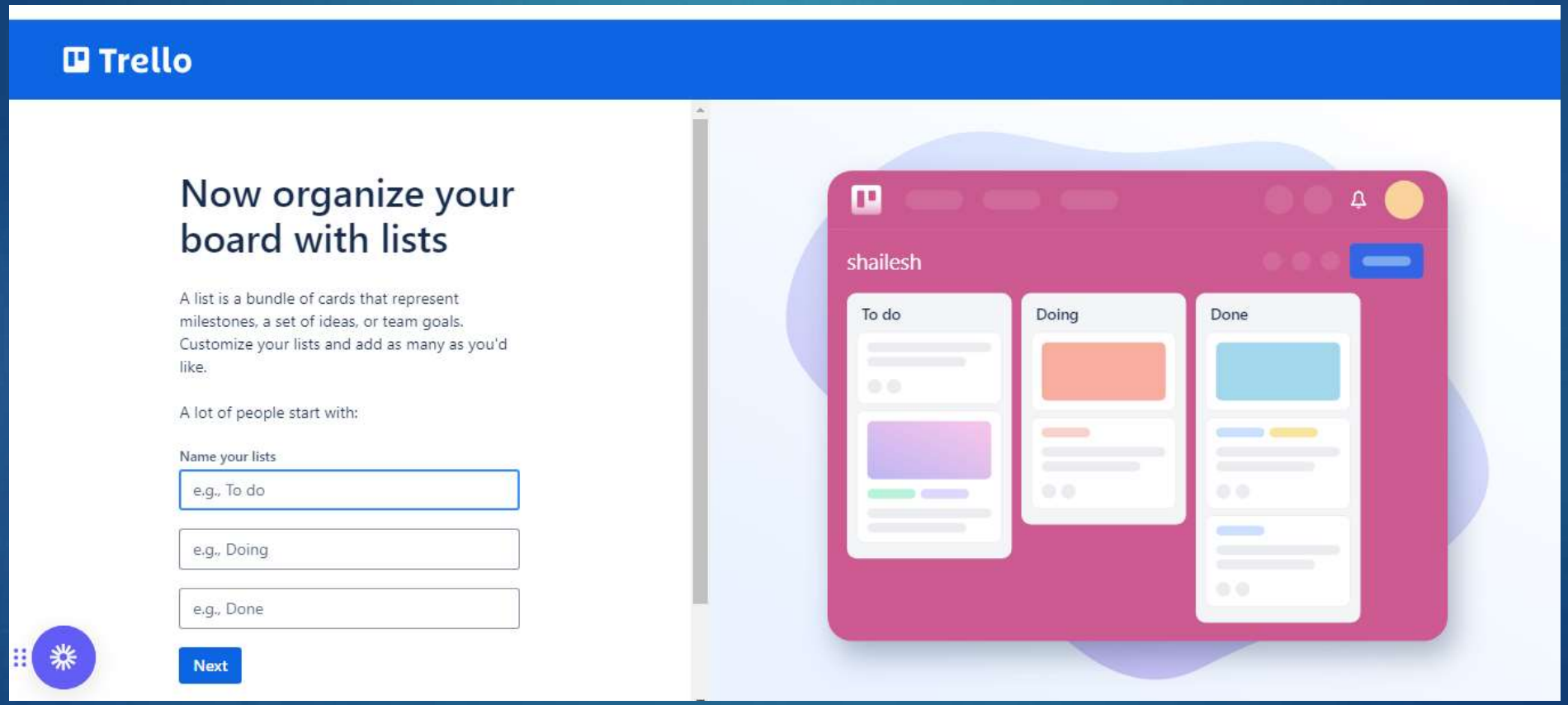
Project planning involves

- **Generating Progress Reports:**The document includes the work to be performed, deliverables, and the intended outcome of the project

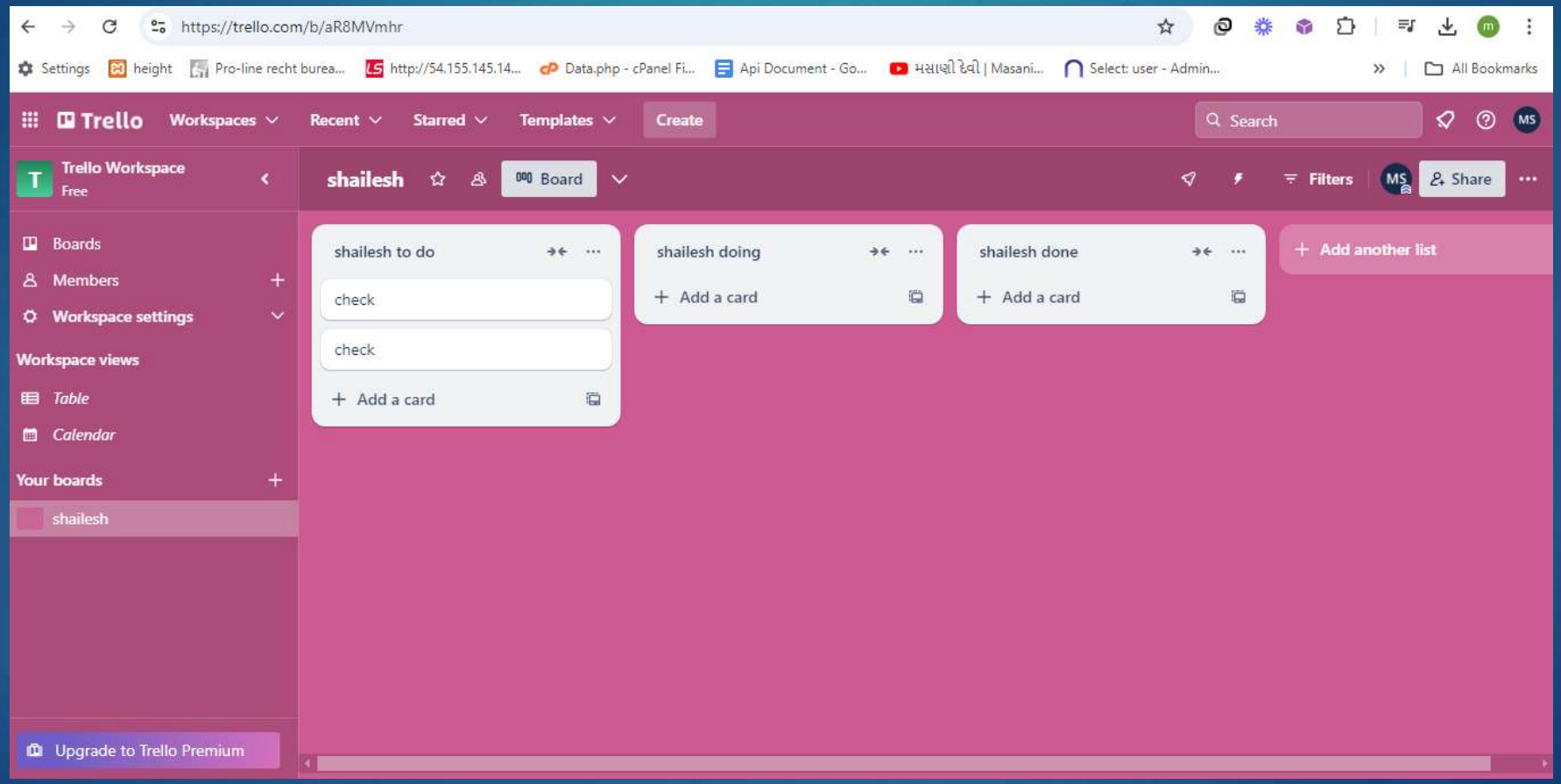
Trello Start



Trello Start



Trello Dashbord



Trello

- Trello is a popular web-based project management tool that helps individuals and teams organize tasks, projects, and workflows using a visual, card-based interface. It is part of the Kanban project management methodology, where tasks are represented as "cards" that move across different columns (lists) based on their status, such as "To Do," "In Progress," and "Done."

Key features of Trello include

- **Boards**: Each project is represented as a board.
- **Lists**: Tasks can be organized into columns or lists, which often represent stages of progress.
- **Cards**: Individual tasks or items that can be moved between lists. Each card can have details such as descriptions, attachments, due dates, and checklists.

Key features of Trello include

- **Collaborative tools:** Trello allows multiple users to collaborate in real-time, add comments, assign tasks, and share attachments.
- **Power-ups:** Trello integrates with other tools and services (like Slack, Google Drive, and Jira) to add extra features, known as Power-Ups.

Key Features of Trello

- Trello employs boards, cards, and lists for project management.
- Subtasks within a card can be made with checklists.
- Tasks can be allocated to several members, so they will be notified of any card changes.
- The tasks can have deadlines included.
- An activity log keeps the team up to date.

Key Features of Trello

- The inclusion of attachments enables the efficient organization of resources.
- Its built-in automation, Butler, reduces the number of tedious tasks by harnessing the power of automation.

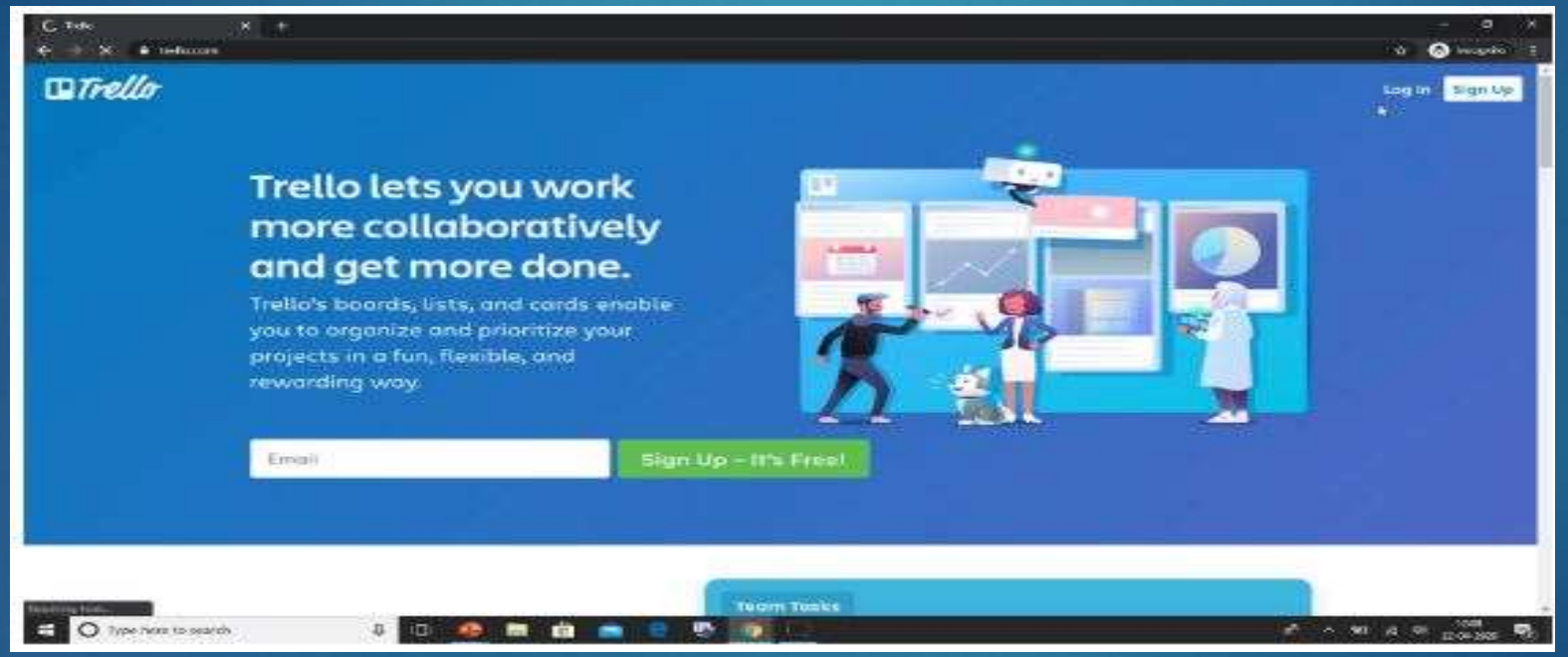
Trello Advantages

- Trello can be used immediately after signing up. Trello offers a free sign-up, after which you get access to almost all of its features. It is also a premium service, though most of the important features are available with the free option.
- Trello follows the Kanban system, which is a popular methodology used to achieve lean management. This means that you can also achieve lean with Trello.

Trello Advantages

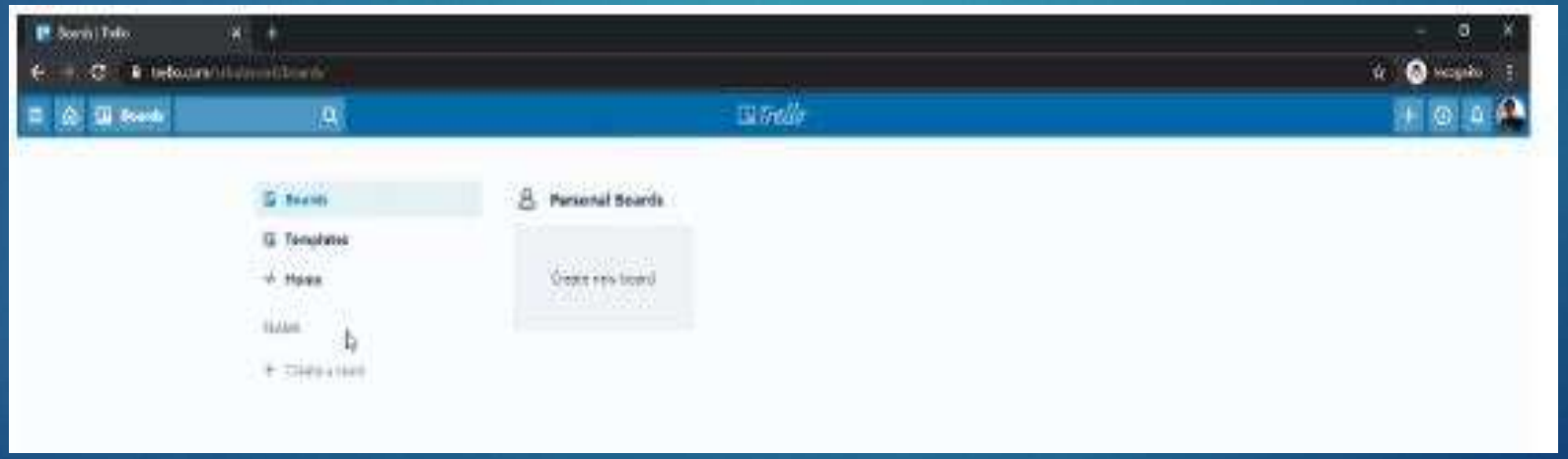
- It's mobile-friendly. Trello's interface looks very similar to a mobile application and is very user-friendly. It also has a very popular mobile application that has the same features available in the desktop application.
- All project-related items can be seen on one page.
- Adding new members, creating issues, and assigning them is easy to do.

Trello Step-1



Step 2: Create a Board in Trello

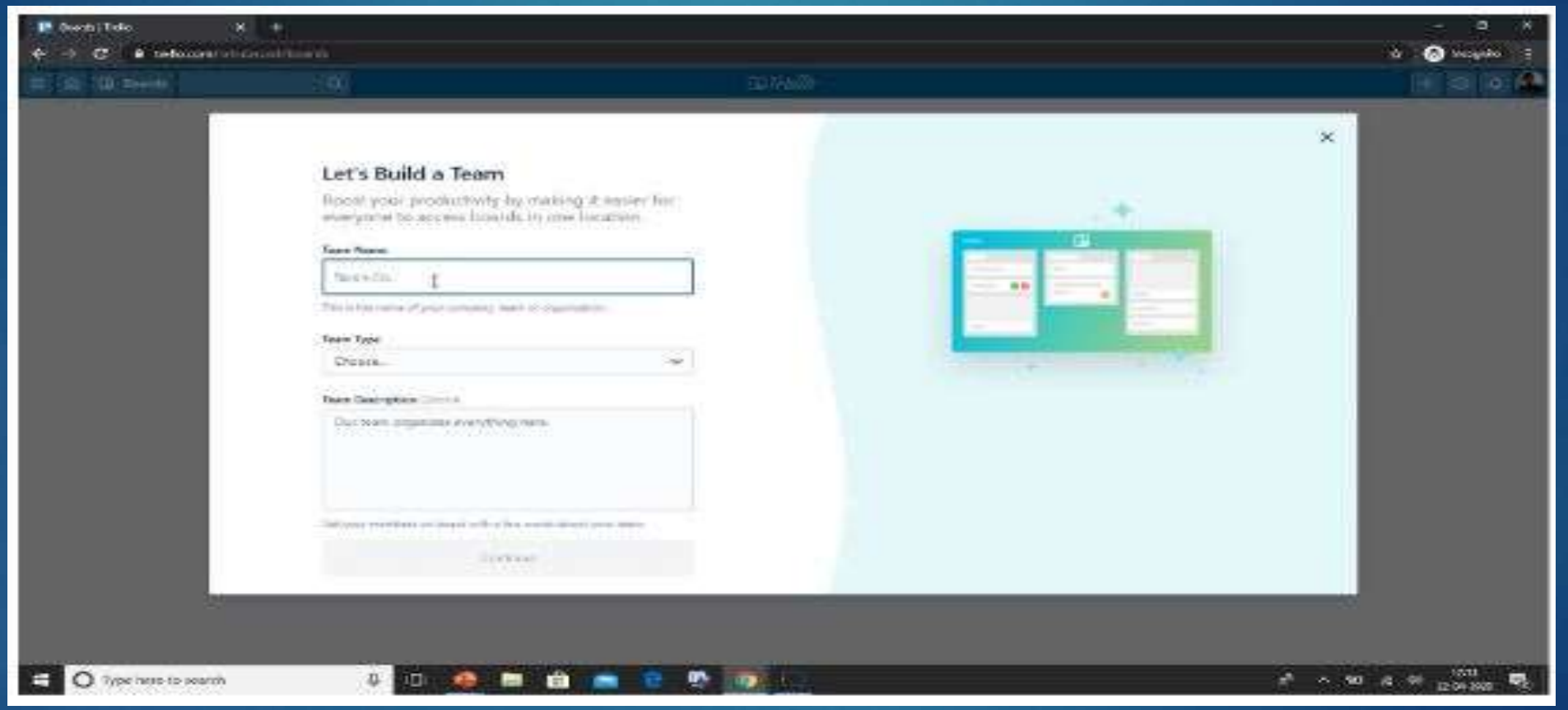
- First-time users can sign up by visiting trello.com.
- You will see the following screen when you log in for the first time. There will be an option to create a new board under the Personal Board tab.



Step 2: Create a Board in Trello

- Under the Personal Boards tab, click the Create new board option.
- Name the board. You can choose a background pattern or color that can be altered later.
- You can choose which team you would like to give access to a board if you have multiple teams.

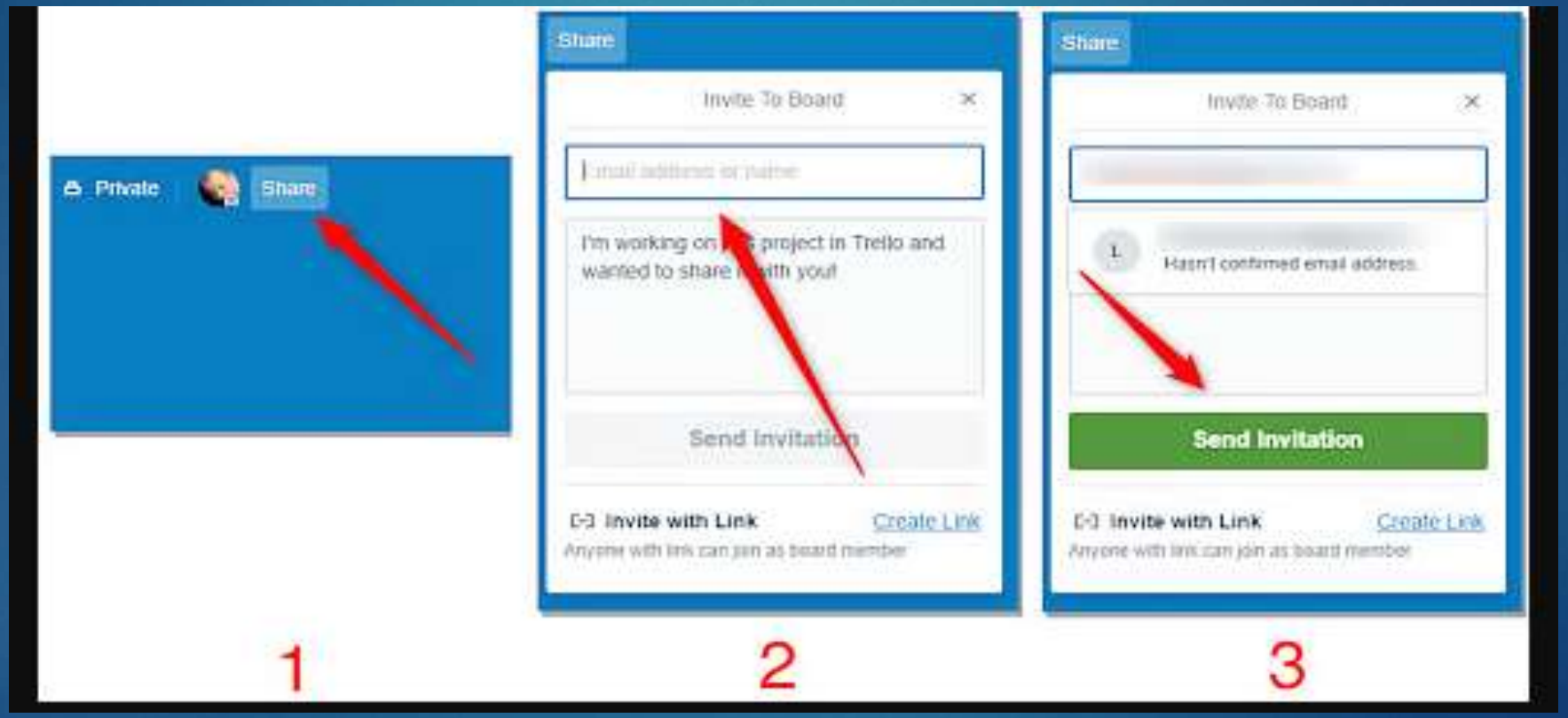
Step 3: Create a Team



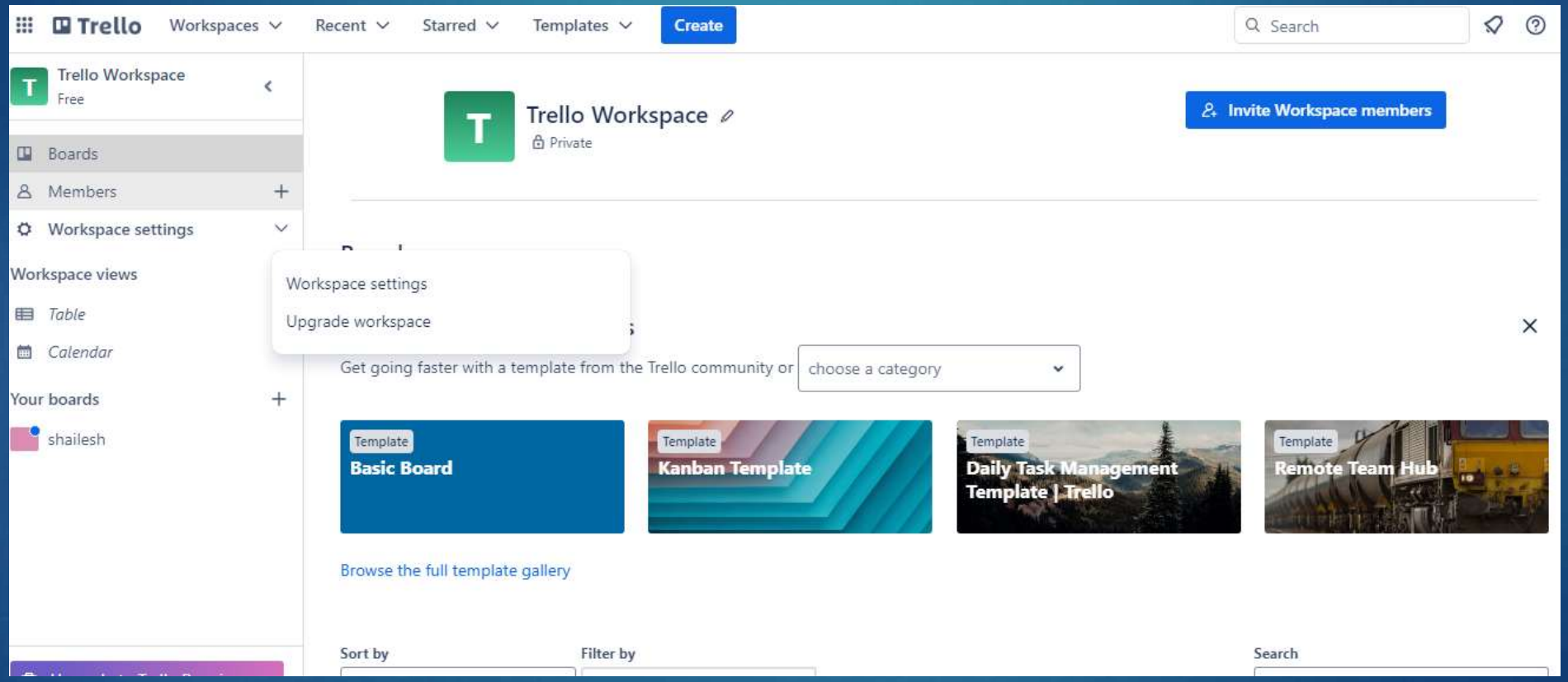
Step 3: Create a Team

- You must provide a team name, describe its type, and include a brief description. Then click on 'Continue', and the option to invite team members will appear.
- Enter the email IDs of your team members and click the send invitation button. They will receive an invite to join Trello.

Step 3: Create a Team



Step 4: Dashbord



Use the issue and pull request dashboards

- Issue tracking for pull requests (PRs) is a process of monitoring and managing the changes that are being proposed to a codebase through pull requests. Typically, this involves linking PRs to issues in a project management or version control system (such as GitHub, GitLab, or Jira), and tracking their progress through stages like review, approval, and merging.

Use the issue and pull request dashboards

- ***1.Create an Issue***
- *An issue is raised for a feature, bug, or improvement in the project.*
- *Issues can include a detailed description, labels, and assignees.*
- ***2. Track the Status of the PR***
- *The issue tracker will show the PR's status as "open", "in review", or "merged".*
- *You can track changes, discussions, and whether the PR passes automated tests.*

Use the issue and pull request dashboards

- **3. Link Pull Request to Issue**
- When a developer starts working on the issue, they create a new branch and open a pull request (PR) to submit their changes.
- The PR can be linked to the issue by referencing the issue number in the pull request description. For example, in GitHub, referencing an issue in the PR description with Fixes #123 will automatically close the issue when the PR is merged.

Use the issue and pull request dashboards

- 5. Merge the Pull Request
- Once all tests pass and reviews are complete, the PR is merged into the main branch.
- Upon merging, the issue related to the PR is typically closed, and both the PR and the issue are marked as resolved.
- 6. Automated Tools for Issue Tracking
- Many systems allow automation of this process through integrations. For example, GitHub can automatically close an issue when the associated PR is merged. Other