COMP 3550

3.2 — GITLAB WORKFLOW: BRANCHING, MRS, REVIEWS

Week 3: Version Control & Testing Foundations

HOW WE USE GITLAB IN THIS CLASS

One Repo Per Team

- Each team has its own GitLab repository
- All team members have shared access and collaboration rights

No Direct Pushes to main

- All changes must go through Merge Requests (MRs)
- Helps ensure code is reviewed before it’s merged
- Encourages clean history and teamwork

Why This Matters:

- Promotes accountability
- Catches bugs early
- Mimics professional team workflows

GITLAB BRANCHING STRATEGY

- Many Options Exist (see required readings/the internet)
- ***Feature Branch Workflow***
  - Create a new branch for each feature or bugfix
  - When done, open a Merge Request (MR)
  - After review, merge into main (no direct commits!)
  - Use dev or staging branches for larger teams or more complex projects
    - (e.g., test changes in staging before main)
    - not necessary here but many teams do like to have them
- **Branch Naming Tip:**
  - Use the format: *issue-###-short-description*
  - It’s up to your team to decide on a standard, document it, and use it
- **Examples:**
  - *issue-42-login-bug*

MERGE REQUESTS (MRS)

- Why Use MRs?
  - **Code Review:** Teammates can catch bugs or suggest improvements
  - **Traceability:** Links code changes to specific issues or tasks
  - **Quality Control:** Ensures code is tested and approved before merging
  - **Team Knowledge Transfer:** Everyone on the team should be able to understand the code that is going into the project
- When creating an MR:
  - **Clear Description** of what the branch does
  - **Issue Reference** (e.g., Closes #42) to auto-link it
  - **Test Notes**: how to reproduce and verify the change

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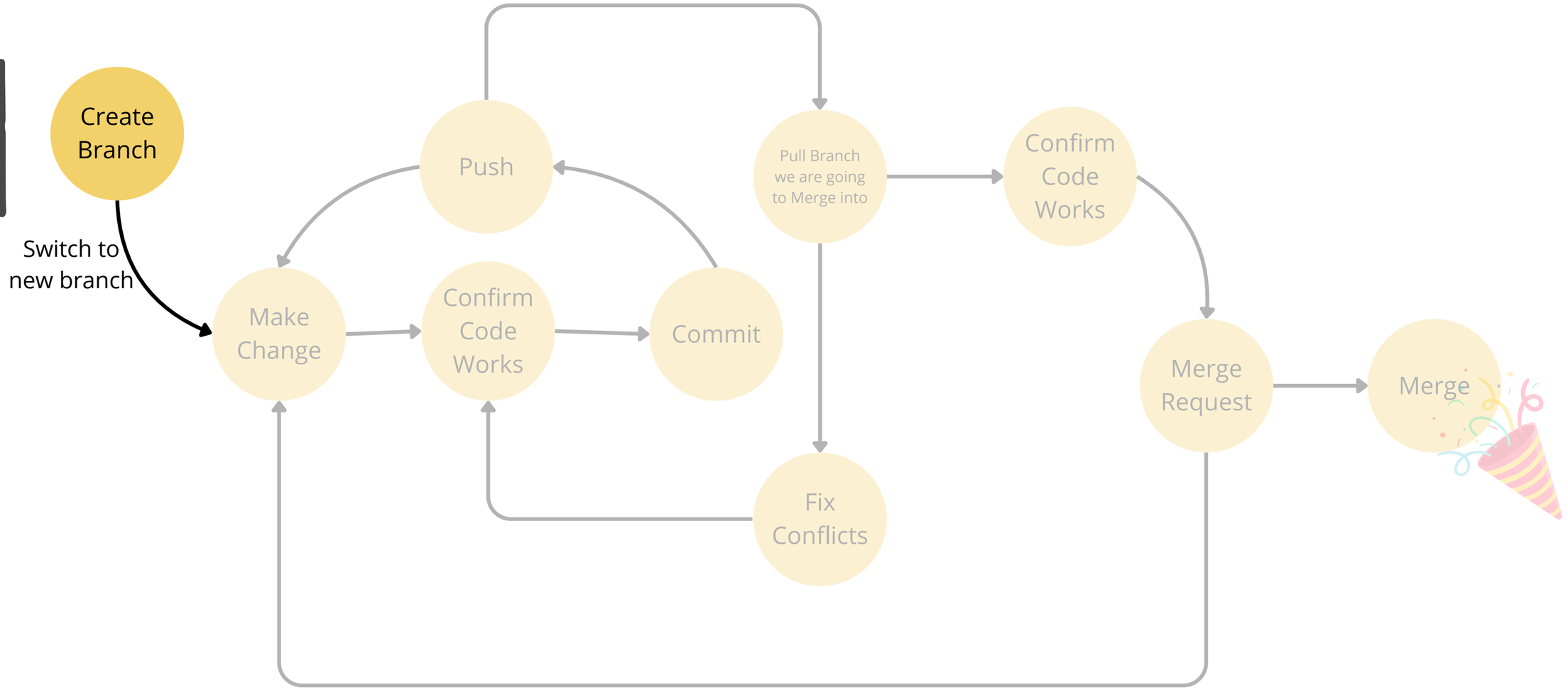
6. **Post-Review Workflow**
   - If all clear, click Approve then Merge
   - Optionally delete source branch and update labels or milestones (as required)

SAMPLE WORKFLOW



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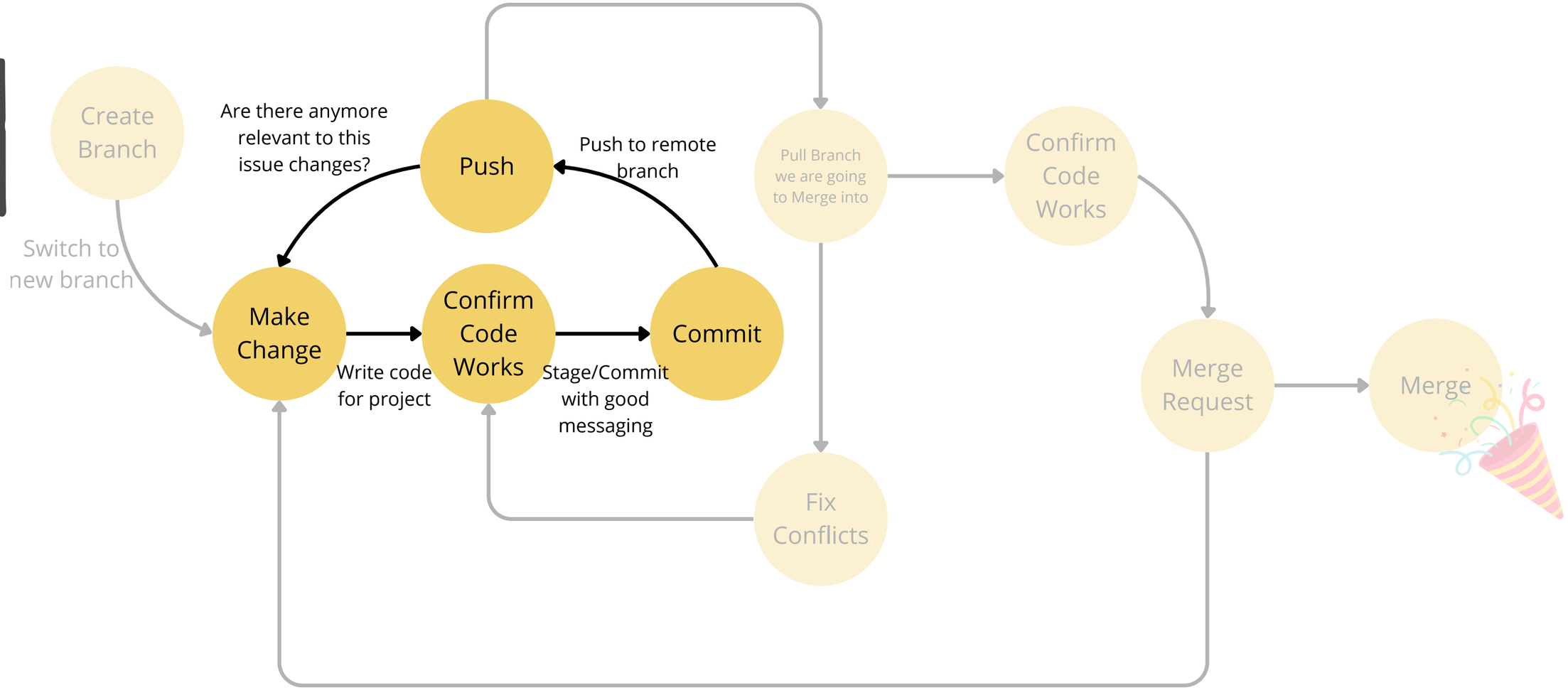

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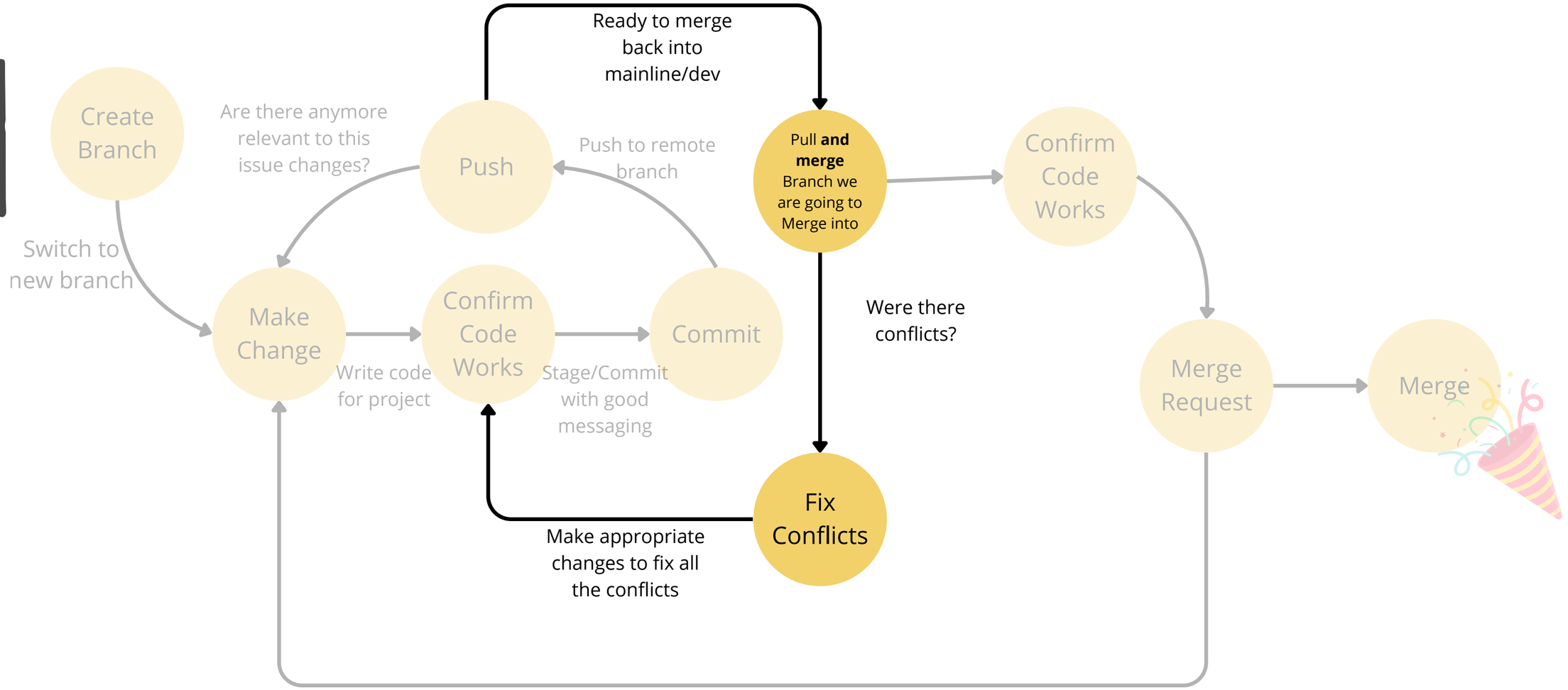

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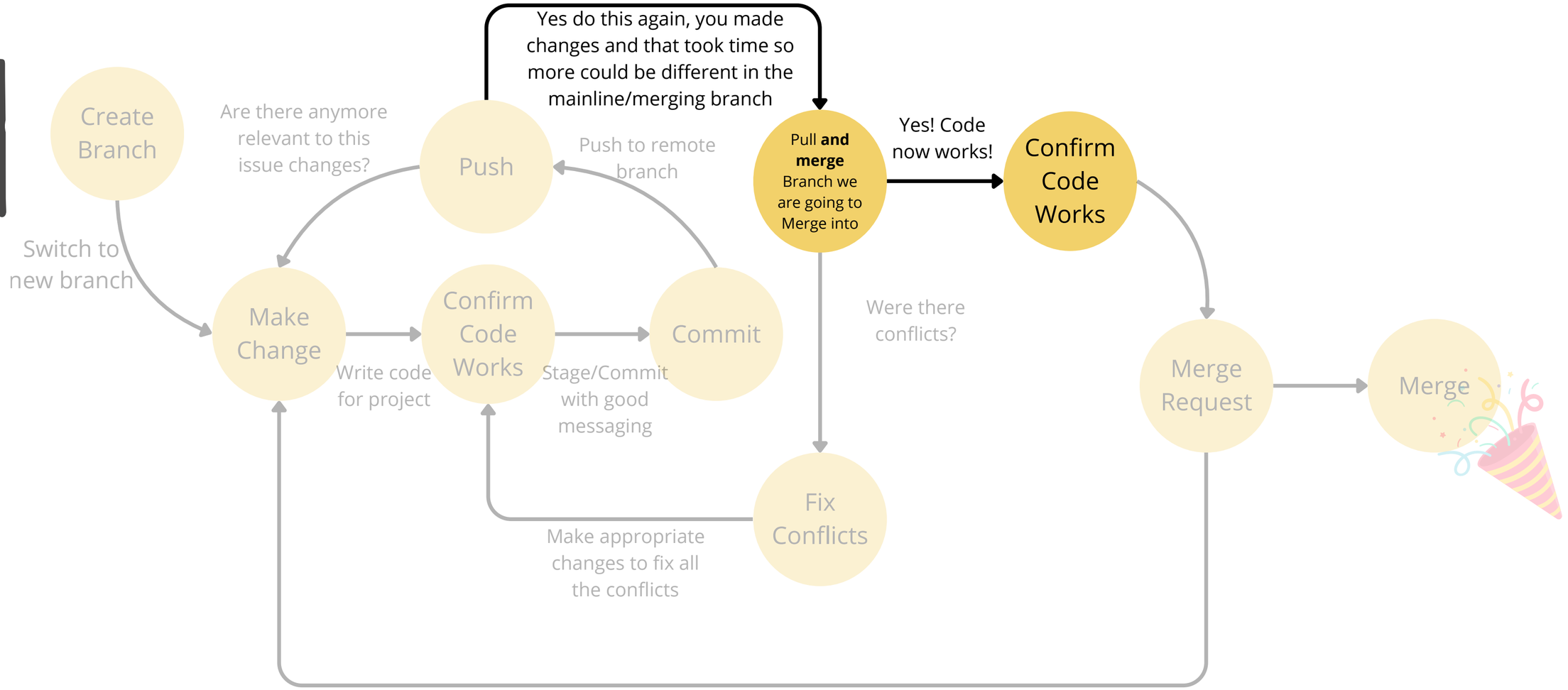

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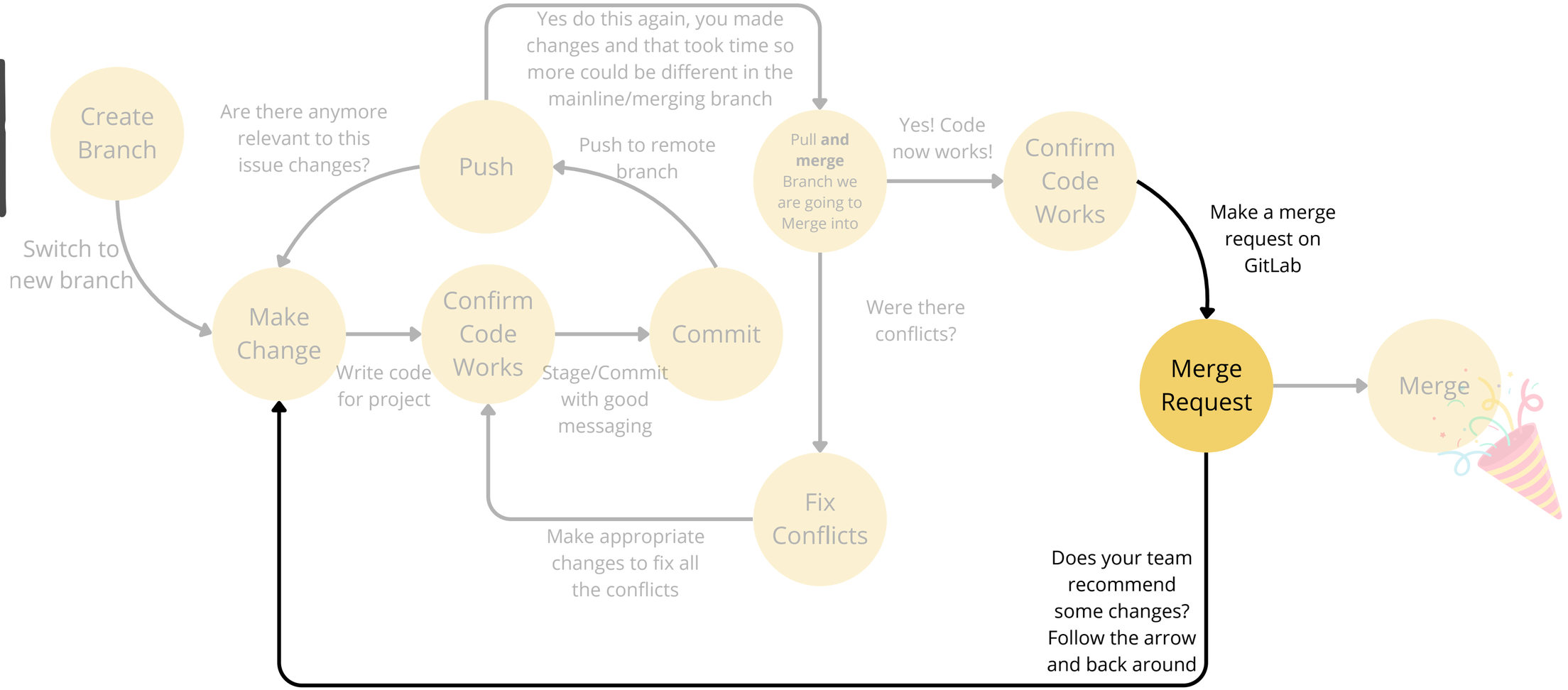

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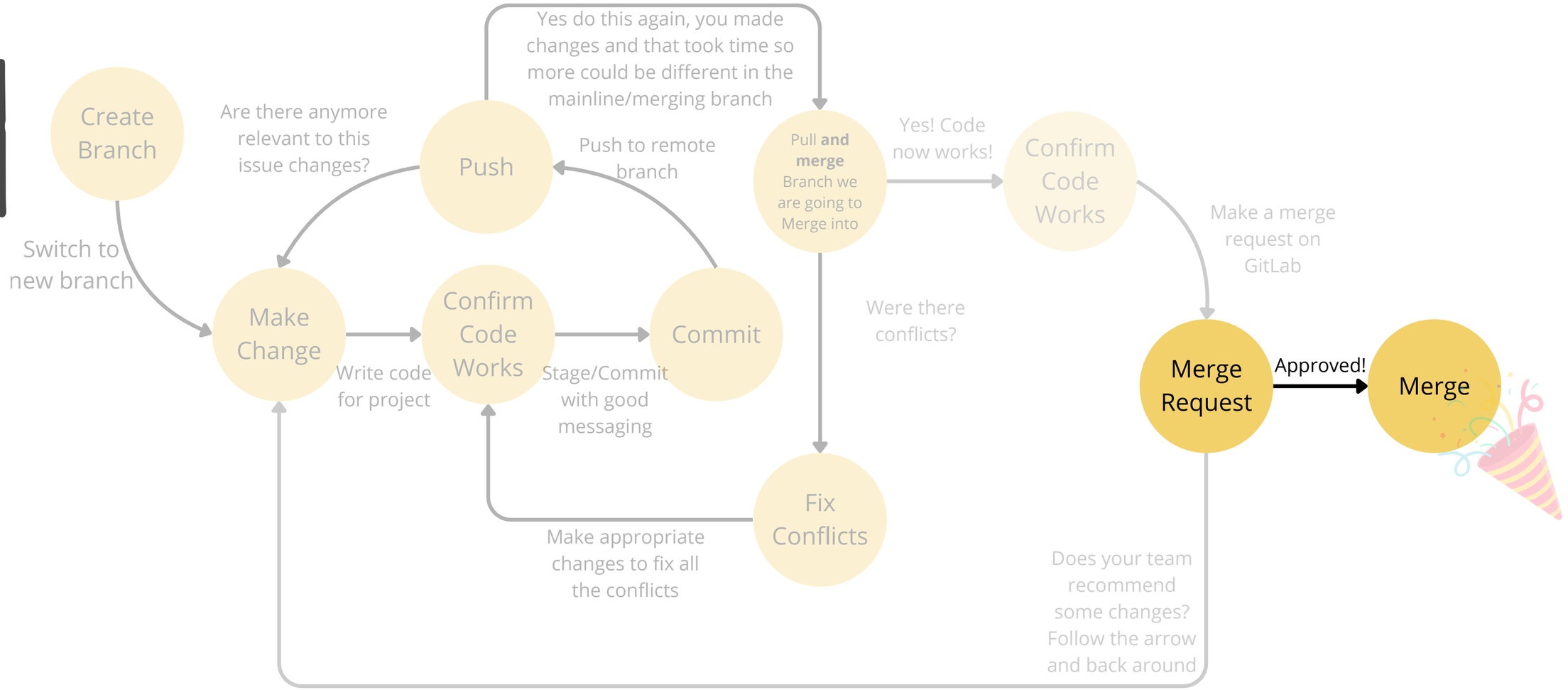

CONTINUOUS INTEGRATION (PREVIEW)

- **What It Is:**
  - CI = Continuous Integration
  - Automatically runs tests every time you push code to the repo
- On every push or Merge Request:
  - CI kicks off
  - Runs your automated tests
  - Flags problems before code is merged (or before MR sometimes!)
- What You'll See in GitLab:
  - Pass/fail status checks right on your MR
  - Click to view logs, errors, and test results
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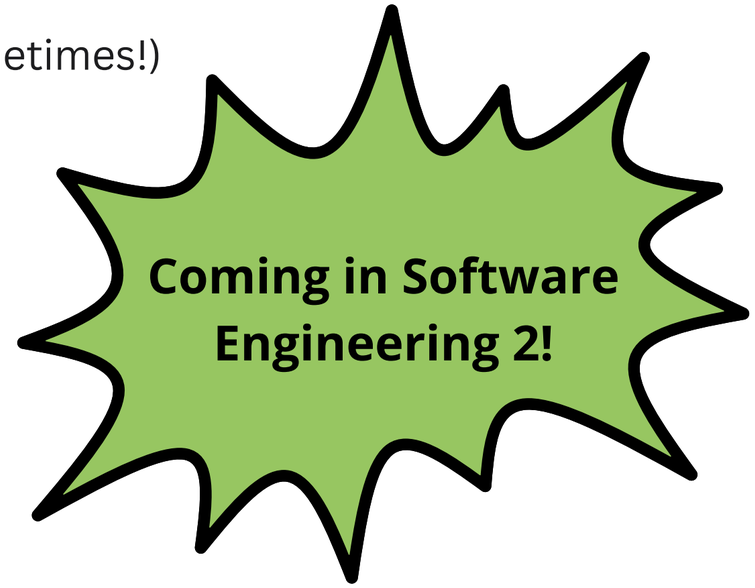

PAUSE & REFLECT

Take some time to explore the required readings and linked video resources on branching strategies.

Ask yourself:

- Which strategies seem practical or effective?
- Which ones don’t resonate with you — and why?
- How do these approaches align (or clash) with the way you like to work?

Use these reflections to start shaping a branching workflow that fits your team’s style and your own development habits.