Answers to GitHub Organization and Automation Questions

1. What are the three tiers of GitHub organizations, and explain one key feature of each tier?

- Free Tier: Provides basic functionality such as public repositories and limited private repositories with community access.
- Team Tier: Offers additional features like team management, advanced access controls, and 2,000 GitHub Actions minutes per month.
- Enterprise Tier: Includes advanced security features, compliance requirements, single sign-on (SSO), and priority support.

2. During the setup of a GitHub organization, how can you invite members, and what permission levels can be assigned?

- Members can be invited by going to the organization settings, navigating to the "People" section, and clicking on "Invite Member."
- Permission Levels:
  - Owner: Full administrative rights over the organization.
  - Member: Limited access, depending on the assigned repository permissions.
  - Team Roles: Customizable roles for specific projects or teams.

3. What organizational settings are available in GitHub for managing an organization, and how does each contribute to effective management?

- Repository Permissions: Controls access levels for different members.
- Team Management: Enables structured collaboration by grouping members.
- Audit Logs: Tracks activity within the organization for security and compliance.
- Billing and Plans: Allows monitoring and managing of subscriptions.

4. How do you integrate GitHub with Slack, and what are the steps for installation and configuration?

- Steps:
  1. Go to the GitHub Marketplace and find the Slack integration.
  2. Install the Slack app and connect it to the desired organization.
  3. Authenticate with Slack and specify which repositories to link.
  4. Configure notification preferences within Slack channels.
- Result: Enables real-time notifications about GitHub activity in Slack.

5. What is Octobox, and how does it help manage GitHub notifications? What are its key features and benefits?

- Octobox is a tool to manage GitHub notifications more effectively by organizing and prioritizing them.
- Features:
  - Unified dashboard for all notifications.
  - Filters to categorize issues, pull requests, and reviews.
  - Snooze and archive options for notifications.
- Benefits:
  - Saves time by focusing on relevant updates.
  - Reduces notification overload.

6. What are GitHub Actions, and what are the steps to create a GitHub Action that welcomes a new contributor's issue using the First Interaction Action?

- GitHub Actions: Automation workflows for CI/CD and other repetitive tasks.
- Steps:
  1. Create a `.github/workflows/first-interaction.yml` file in your repository.
  2. Define the workflow in the YAML file:

     name: First Interaction

```
on:
  issues:
    types: [opened]

jobs:
  firstInteraction:
    runs-on: ubuntu-latest
    steps:
      - name: First Interaction Action
        uses: actions/first-interaction@v1
        with:
          repo-token: '${{ secrets.GITHUB_TOKEN }}'
                issue-message: "Thank you for opening your first issue! We appreciate your contribution."
```

3. Commit and push the changes.
4. The action will automatically welcome new contributors when they open an issue.

7. Describe the process of creating and deploying a Probot app locally using the command line.

- Steps:

1. Install Probot:

   ```
   npm install -g create-probot-app
   ```

2. Create a New App:

   ```
   create-probot-app my-probot-app
   ```

3. Navigate to the App Directory:

   ```
   cd my-probot-app
   ```

4. Run the App Locally:

npm run dev

5. Test the App:

Use a local development environment like smee.io to test webhooks.

6. Deploy the App:

Deploy using a platform like Heroku or AWS with the appropriate configuration for webhooks and environment variables.

8. Provide an overview of the following settings in GitHub:

a. General settings tab

- Manages organization name, profile details, and default repository settings.

b. Access settings tab

- Controls member and team access permissions.

c. Security settings tab

- Configures two-factor authentication, security policies, and access restrictions.

d. Code, planning, and automation settings tab

- Manages workflows, CI/CD pipelines, and project planning tools.

9. How does Trello's GitHub Power-Up enhance collaboration, and what are the steps to attach a GitHub issue to a Trello card?

- Enhances collaboration by linking GitHub issues, pull requests, and commits to Trello cards for seamless project tracking.

- Steps:

1. Enable the GitHub Power-Up in Trello.
2. Authorize GitHub to link your repositories.
3. Attach an issue to a Trello card by pasting the issue URL or using the Power-Up's interface.

10. What is Glitch, and how does it help in hosting a Probot app?

- Glitch is a collaborative platform for creating and hosting web applications.

- It simplifies the hosting of Probot apps by providing instant deployment, collaborative editing, and real-time updates.

11. Discuss GitHub workflow integration with the following tools:

a. VS Code

- Integrates with GitHub for version control, issue tracking, and pull requests directly within the editor.

b. Xcode

- Links repositories for iOS/macOS development with GitHub-hosted source code.

c. IntelliJ IDEA

- Provides GitHub integration for project cloning, pull requests, and code review directly in the IDE.

12. What are parent/child teams in GitHub organizations, and what advantages do they offer?

- Parent/child teams allow hierarchical structuring of teams within an organization.

- Advantages:

- Simplifies access management by inheriting permissions from parent teams.

- Promotes efficient collaboration by organizing teams based on projects or departments.

13. What is two-factor authentication, and why is it critical for GitHub organizations?

- Two-factor authentication adds an additional layer of security by requiring a second verification step.

- Critical for organizations as it prevents unauthorized access even if passwords are compromised.

14. How are milestones created and managed in GitHub, and how do they benefit larger projects?

- Milestones group issues and pull requests to track progress towards project goals.
- Benefits:
  - Provides a clear roadmap for development.
  - Enables tracking of deadlines and deliverables.

15. What categories of pull requests are displayed in Visual Studio Code after signing in to GitHub, and what does each category represent?

- Categories:
  - Created: Pull requests initiated by the user.
  - Assigned: Pull requests assigned to the user for review or updates.
  - Mentioned: Pull requests where the user is mentioned in comments or discussions.