OOP Teamwork Assignment

Project Description

Design and implement a Work Item Management (WIM) Console Application.

Functional Requirements

Application should support multiple teams. Each team has name, members, and boards.

Member has name, list of work items and activity history.

- Name should be unique in the application
- Name is a string between 5 and 15 symbols.

Board has name, list of work items and activity history.

- Name should be unique in the team
- Name is a string between 5 and 10 symbols.

There are 3 types of work items: bug, story, and feedback.

Bug

Bug has ID, title, description, steps to reproduce, priority, severity, status, assignee, comments, and history.

- Title is a string between 10 and 50 symbols.
- Description is a string between 10 and 500 symbols.
- Steps to reproduce is a list of strings.
- Priority is one of the following: High, Medium, Low
- Severity is one of the following: Critical, Major, Minor
- Status is one of the following: Active, Fixed
- Assignee is a member from the team.
- Comments is a list of comments (string messages with author).
- History is a list of all changes (string messages) that were done to the bug.

Story

Story has ID, title, description, priority, size, status, assignee, comments, and history.

- Title is a string between 10 and 50 symbols.
- Description is a string between 10 and 500 symbols.
- Priority is one of the following: High, Medium, Low
- Size is one of the following: Large, Medium, Small
- Status is one of the following: NotDone, InProgress, Done

- Assignee is a member from the team.
- Comments is a list of comments (string messages with author).
- History is a list of all changes (string messages) that were done to the story.

Feedback

Feedback has ID, title, description, rating, status, comments, and history.

- Title is a string between 10 and 50 symbols.
- Description is a string between 10 and 500 symbols.
- Rating is an integer.
- Status is one of the following: New, Unscheduled, Scheduled, Done
- Comments is a list of comments (string messages with author).
- History is a list of all changes (string messages) that were done to the feedback.

Note: IDs of work items should be unique in the application i.e. if we have a bug with ID X then we cannot have Story of Feedback with ID X.

Operations

Application should support the following operations:

- Create a new person
- Show all people
- Show person's activity
- Create a new team
- Show all teams
- Show team's activity
- Add person to team
- Show all team members
- Create a new board in a team
- Show all team boards
- Show board's activity
- Create a new Bug/Story/Feedback in a board
- Change Priority/Severity/Status of a bug
- Change Priority/Size/Status of a story
- Change Rating/Status of a feedback
- Assign/Unassign work item to a person
- Add comment to a work item
- List work items with options:
    - List all
    - Filter bugs/stories/feedback only
    - Filter by status and/or assignee
    - Sort by title/priority/severity/size/rating

General Requirements

- Follow the OOP best practices:
  - Proper use data encapsulation
  - Proper use of inheritance and polymorphism
  - Proper use of interfaces and abstract classes
  - Proper use of static members
  - Proper use enumerations
  - Follow the principles of strong cohesion and loose coupling
- Use LINQ
- Implement proper user input validation and display meaningful user messages
- Implement proper exception handling
- Cover functionality with unit tests (80% code coverage)
- Use Git to keep your source code and for team collaboration

Teamwork Requirements

Refer to the teamwork requirements document found along with the project requirements.

Teamwork defense

Prepare a list of commands to demonstrate how the program works.