



GLOBAL
ENGINEERING
ACADEMY

Genesis



L&T Technology Services



Document History

Ver. Rel. No.	Release Date	Prepared. By	Reviewed By	To be Approved By	Remarks/Revision Details
		Divyesh M			

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Activity 2:- Statistical Analysis of Crop Production

Introduction

Today, India ranks second worldwide in the farm output. Agriculture is demographically the broadest economic sector and plays a significant role in the overall socio-economic fabric of India. Agriculture is a unique business crop production which is dependent on many climate and economy factors. Some of the factors on which agriculture is dependent are soil, climate, cultivation, irrigation, fertilizers, temperature, rainfall, harvesting, pesticide weeds and other factors. The .csv file includes crop cultivation in different districts which also highlights the cultivation in different seasons, year wise data on crop covered area (Hectare) and production (Tonnes). The data is used to study and analyse crop production, production contribution to district/State/country. The system is also a vital source for formulating crop related schemes and assessing their impacts. Implementation of the project using all the C++ concepts with extended LINUX concepts. In this project find out some key values using given data. Some point are given below:

1. Find State using Production
2. States with kharif crops
3. Remove Production using production number
4. How to find Production using ID
5. Count all crop production
6. Count of states with potato plants
7. Find out States with minimum area
8. Find out the Maximum production District

Implemented this all cases in the project to find the value/place immediately using key values. Which helps to analyze the data easily as well as saves the time .

Requirements:

High Level Requirements:

ID	Description
HL_01	When user gives input as a production ID then find State using production
HL_02	Find out states with kharif season
HL_03	Using area code should remove the respective production from database
HL_04	If user gives the productionID then code should able to find the type of production
HL_05	Should able to find count of database
HL_06	Find the number of States whose grows the potatoes crops
HL_07	Which States have a minimum area.
HL_08	Gives the district which grows the maximum production.

Low Level Requirements:

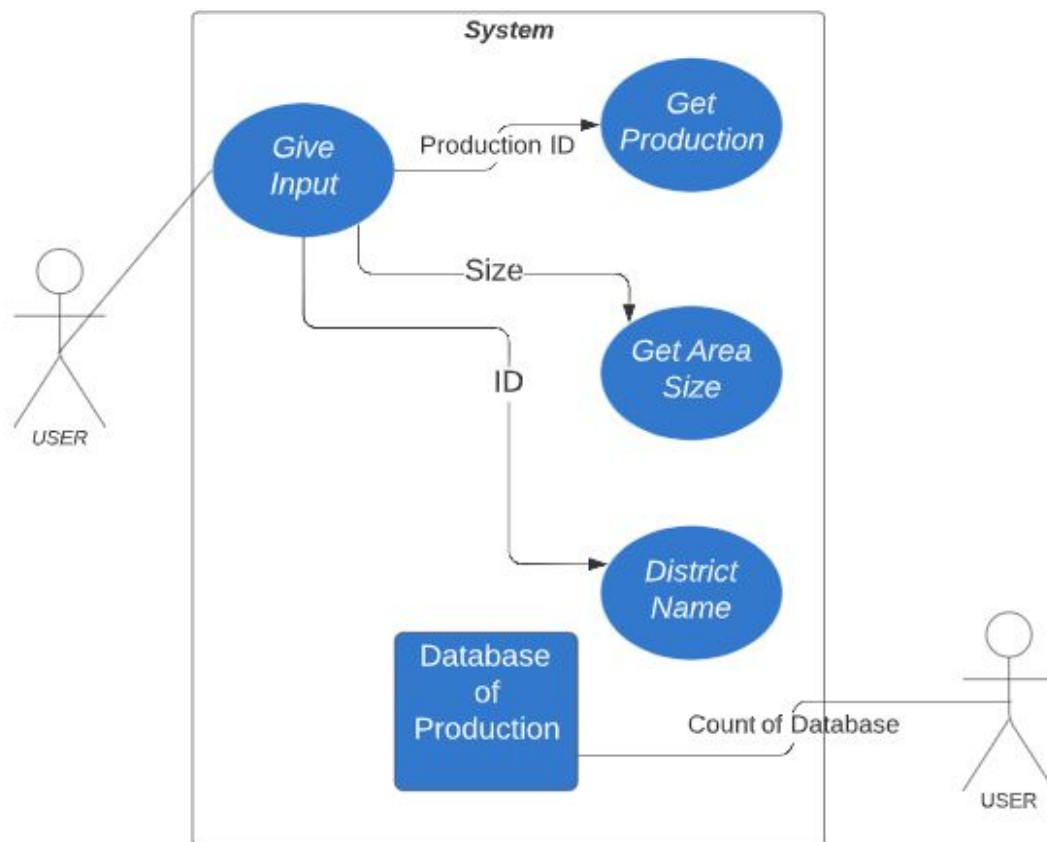
ID	Description
LL_01_HH_01	Read Production appropriately
LL_02_HH_02	Get Season function should work
LL_03_HH_03	If user enter area code then code should get it properly
LL_04_HL_04	define Iterator should increment for every database entry
LL_05_HL_05	Production should not vary continuously

LL_06_HL_06	Getting the value of crops
LL_07_HL_07	Comparison function need to work properly
LL_08_HL_08	Getting value of district for each iteration

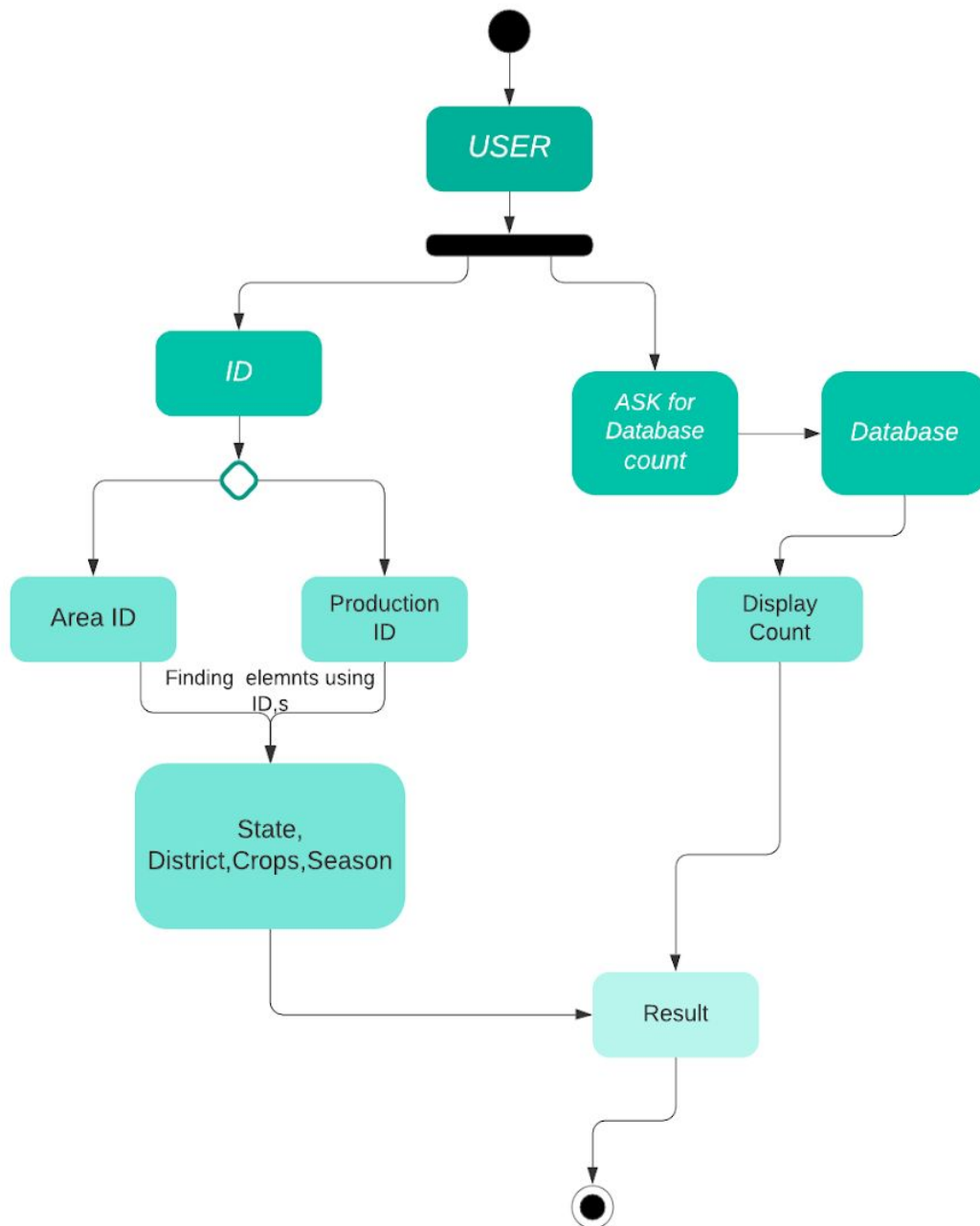
Design

- Behavioral Diagrams

1. USE Case Diagram

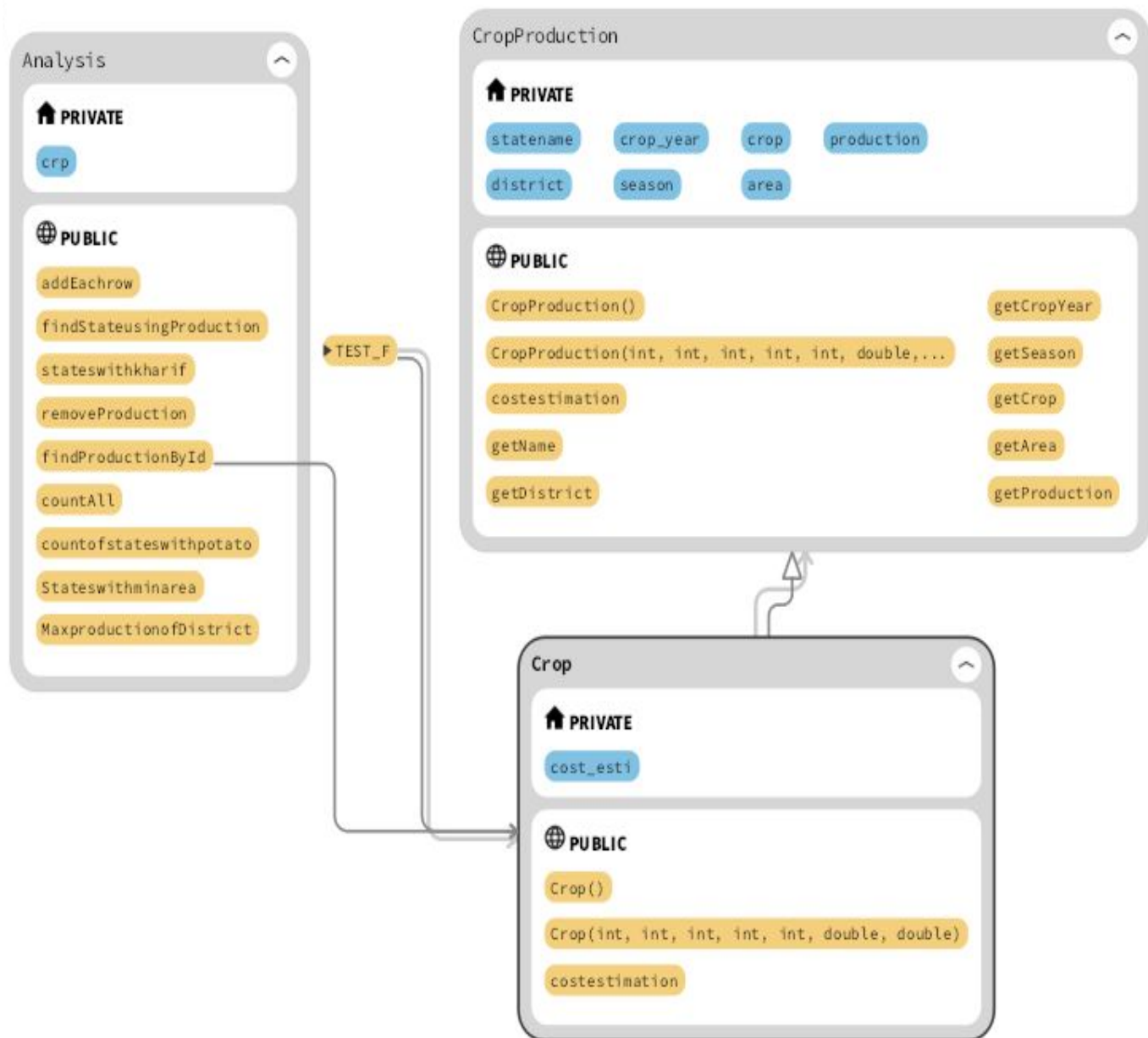


2. Activity Diagram

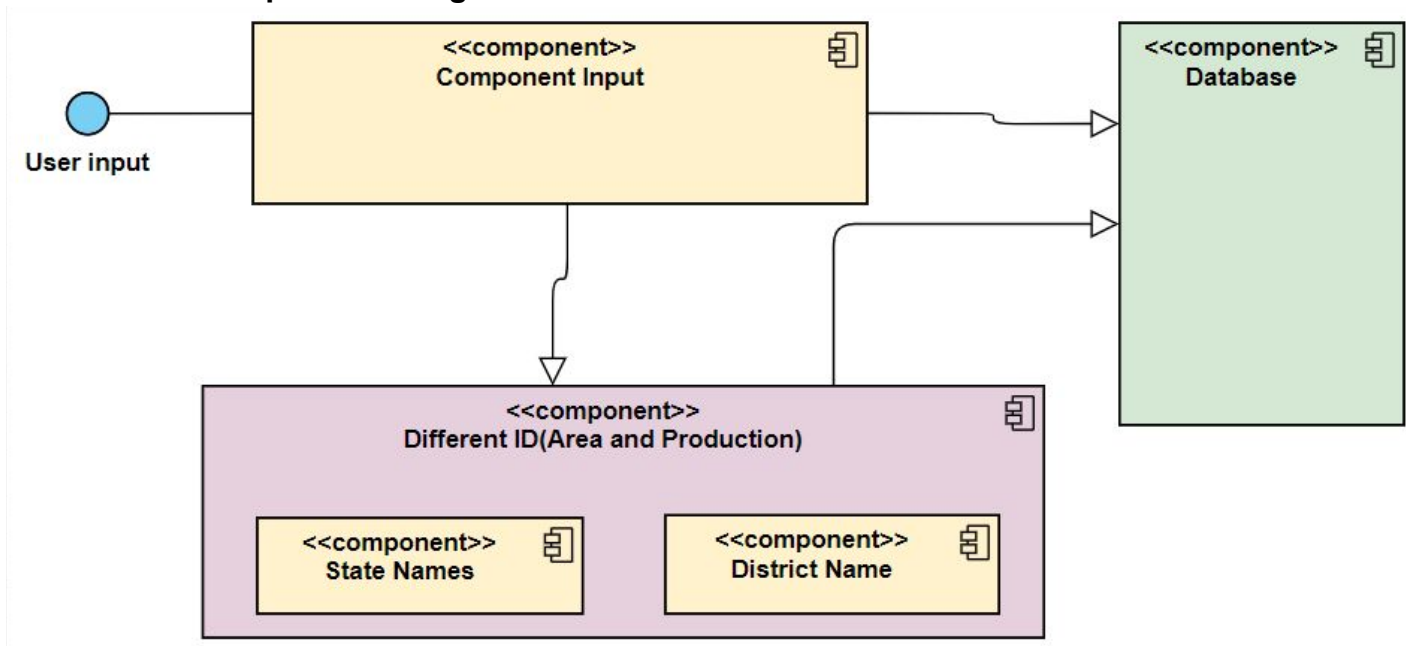


- **Structural Diagrams**

1. Class Diagram



2. Components Diagram



Test Plan

1. Requirement based testing

TEST_ID	Description	Expected Input	Expected Output	Actual Output
1_HL_01	When user gives input as a production ID then find State using production	Input Should be Production ID to find state	The state name with respect to PProduction ID	TEST Case passed
2_HL_02	Find out states with kharif season	Pass Kharif to Season column in database using iterator	List of the States whose grows up Kharif	Complete list of states
3_HL_03	Using area code should remove the	Area ID	Delete Complete data related to Area ID	Data related to this is removed

	respective production from database			
4_HL_04	If user gives the productionID then code should able to find the type of production	Production ID	Type of the Production	TEST case passed
5_HL_05	Should able to find count of database	Pass the database to Iterator	Count of the database	Displayed Count
6_HL_06	Find the number of States whose grows the potatoes crops	Pass state column to iterator	List of States Whose grows potato crops	Complete list of states
7_HL_07	Which States have a minimum area.	Area itself to iterator	The State name Which has minimum area	State name(whose has less area)
8_HL_08	Give the districtName which grows the maximum production.	Production	The Name of district will display which has maximum production	District Name displayed

2. Boundary condition testing

- 1) When user wants to find District or State which is not there in database
- 2) Limited Database

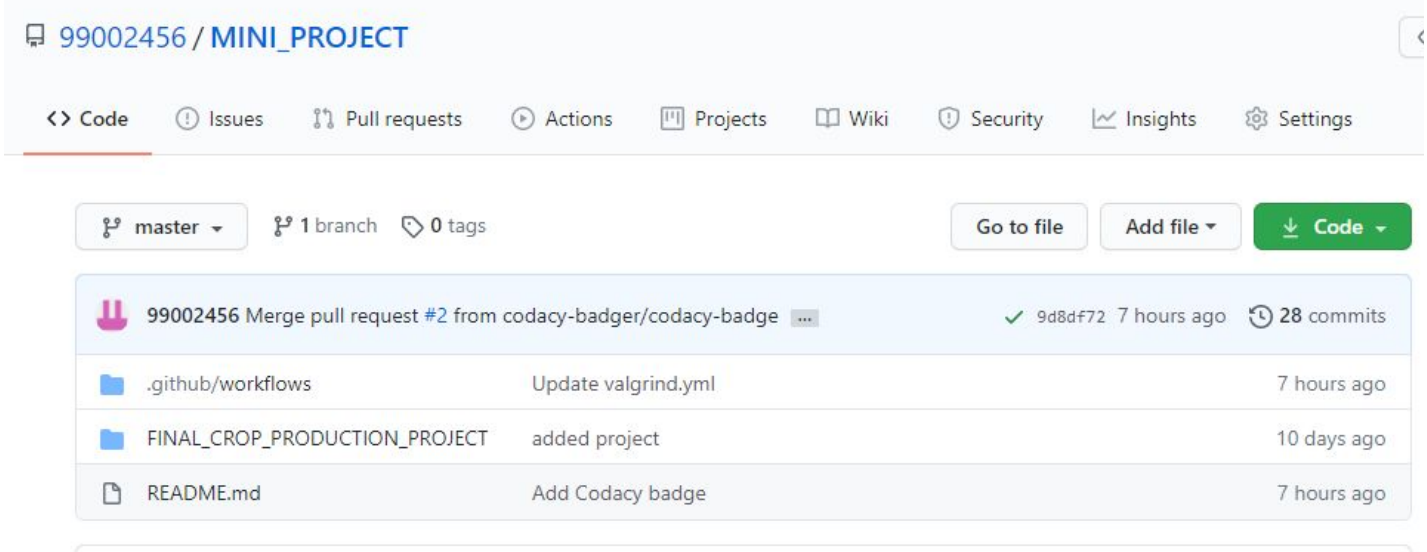
3. Scenario Based testing

- 1) When user give String instead of integer value
- 2) When the user enters an operand which is undefined

Activity 3:- GITHUB

1. GITHUB repository

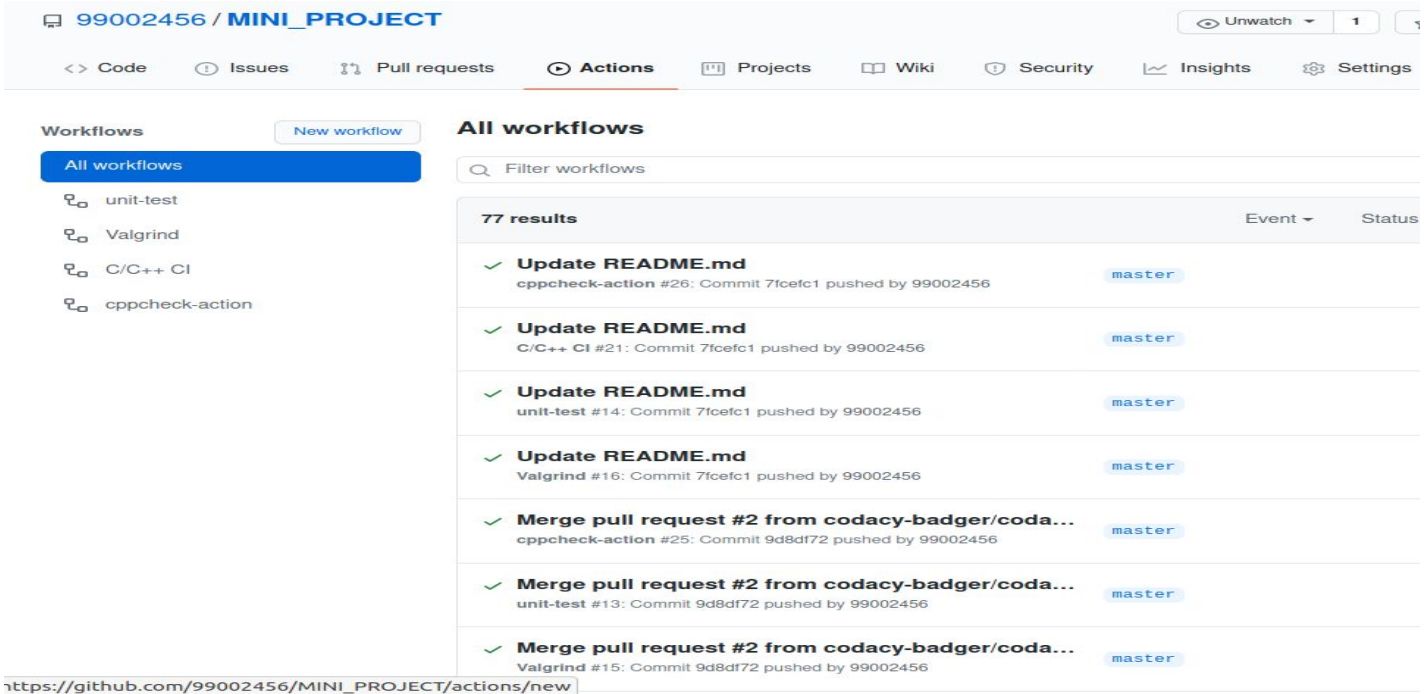
GITHUB Link: https://github.com/99002456/MINI_PROJECT.git



The screenshot shows the GitHub repository page for user 99002456 and repository MINI_PROJECT. The navigation bar includes links for Code, Issues, Pull requests, Actions, Projects, Wiki, Security, Insights, and Settings. Below the navigation bar, there are buttons for 'Go to file', 'Add file', and a green 'Code' button with a download icon. The repository is currently on the 'master' branch, with 1 branch and 0 tags. The main content area displays a list of recent commits:

- 99002456 Merge pull request #2 from codacy-badger/codacy-badger (9d8df72, 7 hours ago, 28 commits)
- .github/workflows Update valgrind.yml (7 hours ago)
- FINAL_CROP_PRODUCTION_PROJECT added project (10 days ago)
- README.md Add Codacy badge (7 hours ago)

2. GITHUB Actions



The screenshot shows the GitHub Actions page for the repository 99002456 / MINI_PROJECT. The 'Actions' tab is selected in the navigation bar. On the left, there is a 'Workflows' sidebar with a 'New workflow' button and a list of workflows: unit-test, Valgrind, C/C++ CI, and cppcheck-action. The main area is titled 'All workflows' and shows a search bar with the text 'Filter workflows'. Below the search bar, there are 77 results listed in a table. Each row shows a workflow name, a green checkmark indicating success, the commit hash, the commit message, and the branch name (master). The workflows listed are:

- Update README.md (cppcheck-action #26: Commit 7fcef1 pushed by 99002456)
- Update README.md (C/C++ CI #21: Commit 7fcef1 pushed by 99002456)
- Update README.md (unit-test #14: Commit 7fcef1 pushed by 99002456)
- Update README.md (Valgrind #16: Commit 7fcef1 pushed by 99002456)
- Merge pull request #2 from codacy-badger/codacy-badger (cppcheck-action #25: Commit 9d8df72 pushed by 99002456)
- Merge pull request #2 from codacy-badger/codacy-badger (unit-test #13: Commit 9d8df72 pushed by 99002456)
- Merge pull request #2 from codacy-badger/codacy-badger (Valgrind #15: Commit 9d8df72 pushed by 99002456)

The URL at the bottom of the page is https://github.com/99002456/MINI_PROJECT/actions/new.

99002456 / MINI_PROJECT Unwatch

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master MINI_PROJECT / README.md

99002456 Update README.md Latest

2 contributors

5 lines (4 sloc) | 756 Bytes

FINAL_CROP_PRODUCTION_PROJECT

Build	Unit Test	cppcheck	Valgrind	Codacy
 C/C++ CI passing	 unit-test passing	 cppcheck-action passing	 Valgrind passing	 code quality B

3. GITHUB issue


- Raising Issue

99002456 / MINI_PROJECT

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Getting error in header after removing one line from file #3

Open 99002456 opened this issue now · 0 comments

 99002456 commented now Owner ...

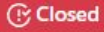
After editing crops.h files getting error. as well as cpp-check in also not working.


- **Issue resolved and closed**



 99002456 / MINI_PROJECT

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Getting error in header after removing one line from file #3



 **Closed** 99002456 opened this issue 3 minutes ago · 1 comment





99002456 commented 3 minutes ago Owner  

After editing crops.h files getting error, as well as cpp-check in also not working.



99002456 commented now Author Owner  

Error in 24 lines. Make it as a #endif

  99002456 closed this now