./

Learning Report – Automatic Street Lamp

Course Code: <CODE>



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| --- | --- | --- | --- | --- | --- |
| **Ver. Rel. No.** | **Release Date** | **Prepared. By** | **Reviewed By** | **Approved By** | **Remarks/Revision Details** |
| 1 | 18/09/20 | Milind Mohapatra |  |  |  |
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**Document History**

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# Checklist

* Installation of SW on Phone and Desktop
* Additional Aspects …

# Activity and Tasks

## **Activity 1**– System/Software Development

* Requirements:
* High level requirements:

|  |  |
| --- | --- |
| **ID** | **Description** |
| HL\_01 | Lamp must turn ON when ambient light is below threshold |
| HL\_02 | Lamp must turn OFF when ambient light is above threshold |
| HL\_03 | System must function regardless of weather conditions |
| HL\_04 | Battery life must be long |

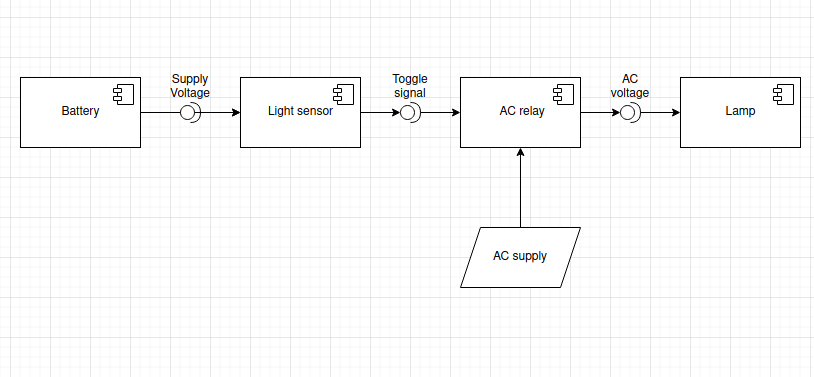
* Low level requirements:

|  |  |
| --- | --- |
| **ID** | **Description** |
| LL\_01 | Ambient light above threshold must result in HIGH signal from amplifier |
| LL\_02 | Below threshold ambient light must result in a LOW signal from amplifier |
| LL\_03\_1 | Lamp must turn ON during rain |
| LL\_03\_2 | Lamp must turn ON during fog |
| LL\_04 | Operating voltage must be low |

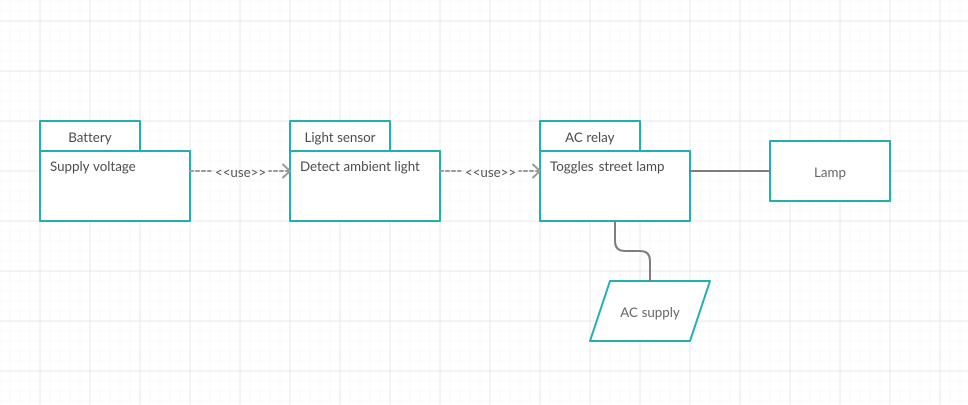
* Test plan:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ID** | **Description** | **Precondition** | **Expected I/P** | **Expected O/P** | **Actual O/P** |
| HL\_01 | Check lamp status when ambient light is LOW | System has power supply | Ambient light | Lamp turns ON |  |
| HL\_02 | Check lamp status when ambient light is HIGH | System has power supply | Ambient light | Lamp turns OFF |  |
| HL\_03\_1 | Lamp status on a rainy/foggy day | System has power | Ambient light | Lamp turns ON |  |
| HL\_03\_2 | Lamp status at night with many vehicles | System has power; night/cloudy | Ambient light | Lamp turns ON |  |
| LL\_01 | Check amplifier output when ambient light is LOW | Amplifier has power supply | Signal from LDR | Lamp turns ON |  |
| LL\_02 | Check amplifier output when ambient light is HIGH | Amplifier has power supply | Signal from LDR | Lamp turns OFF |  |
| LL\_03 | Operating voltage | System has power supply | Supply from battery | Power consumption is low |  |

* Design
  + High level UML design
    - Structural diagram:

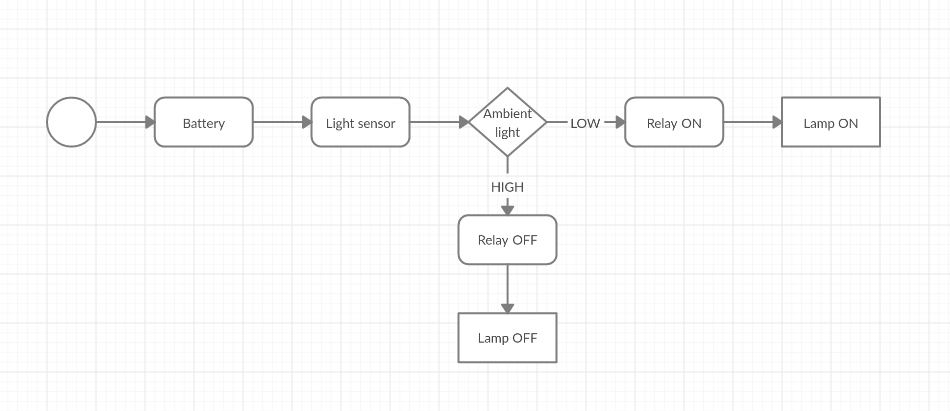


Component diagram

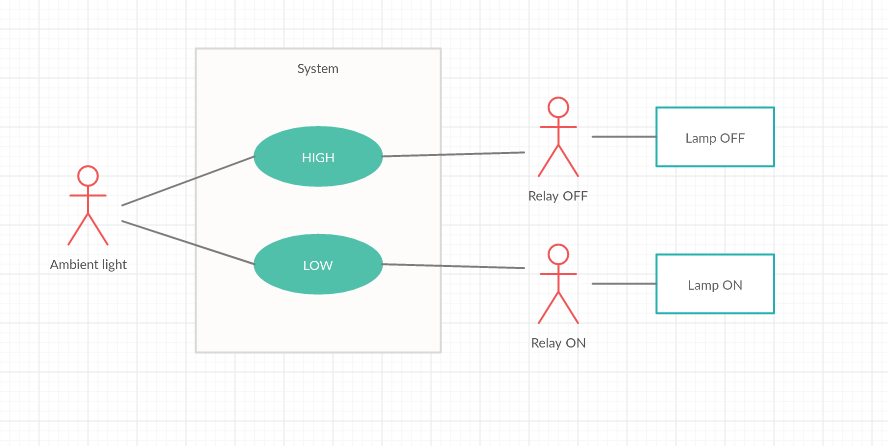


Package diagram

* + - Behavioral diagram:

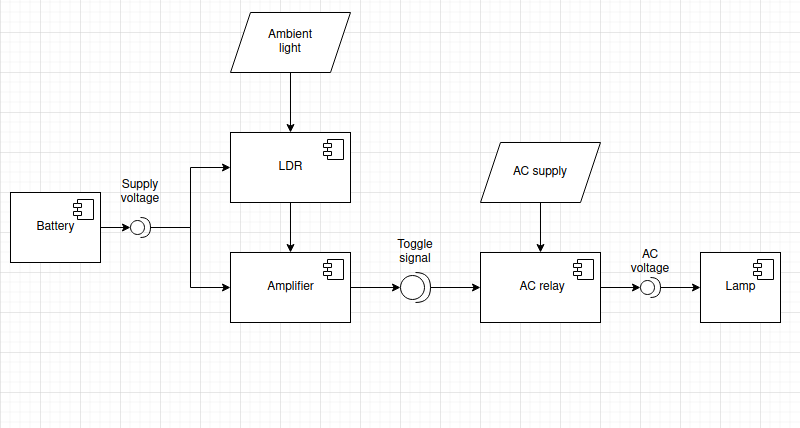


Activity diagram

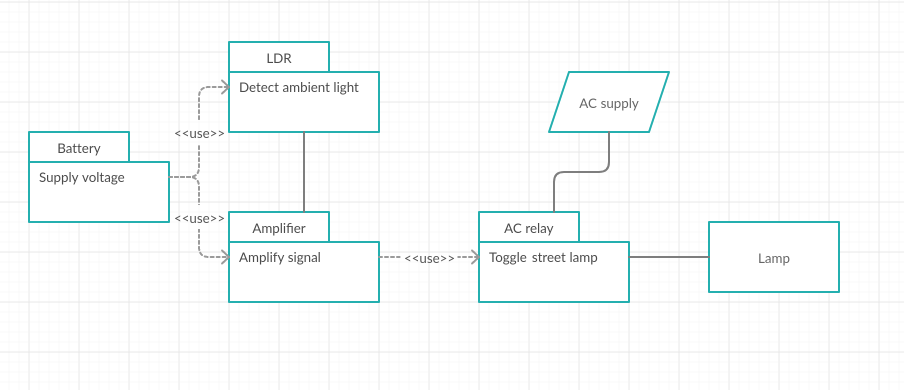


Use case diagram

* + Low level UML diagram
    - Structural diagram:

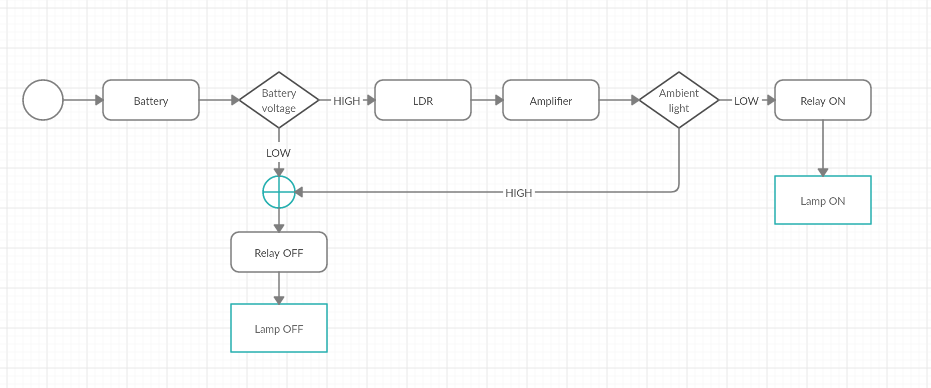


Component diagram

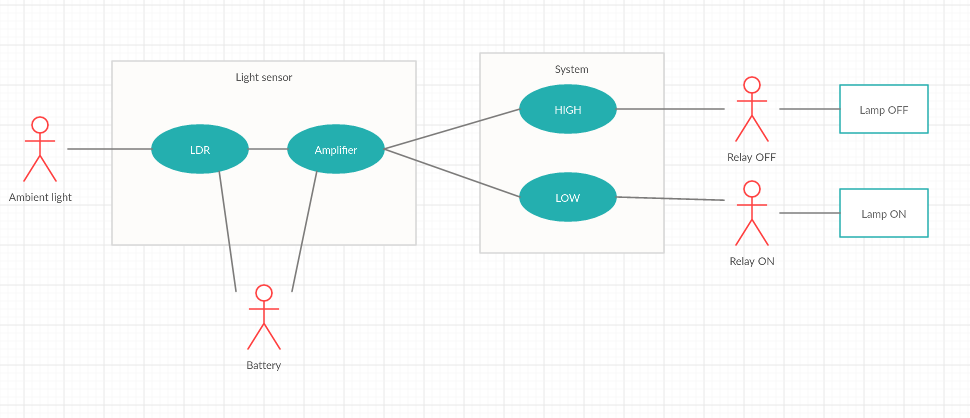


Package diagram

* + Behavioral diagram:



Activity diagram

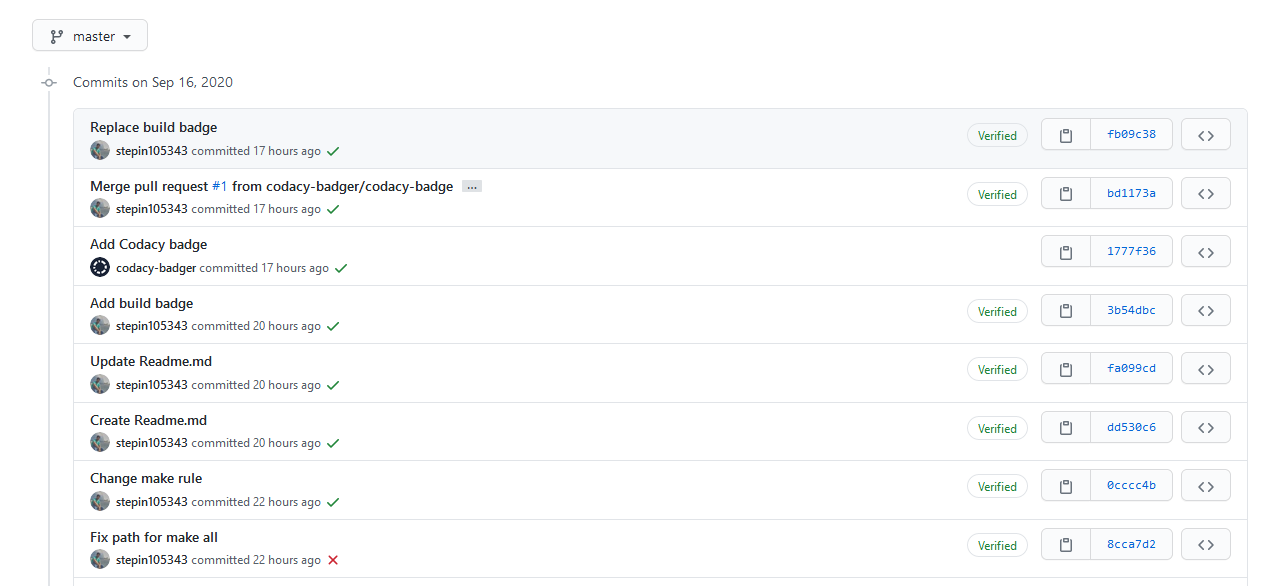


Use case diagram

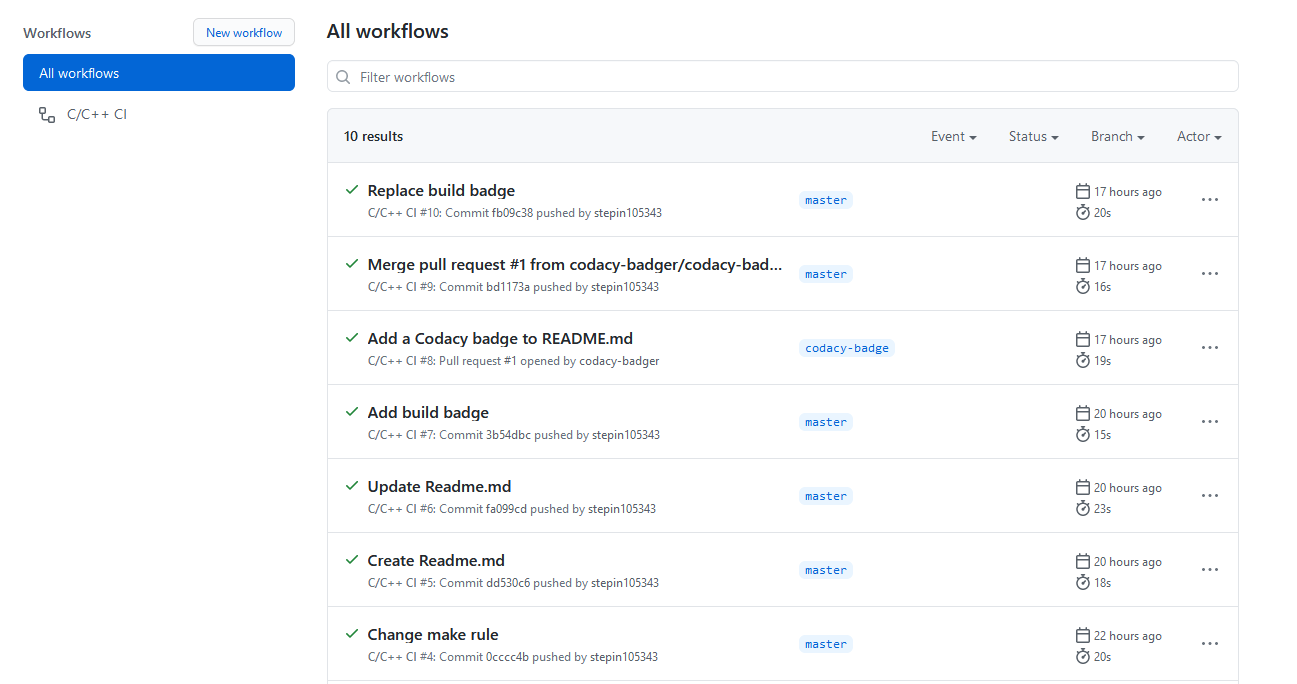
## **Activity 2** –CI Workflow for C Programming

[Github repo](https://github.com/stepin105343/stepin-practice)

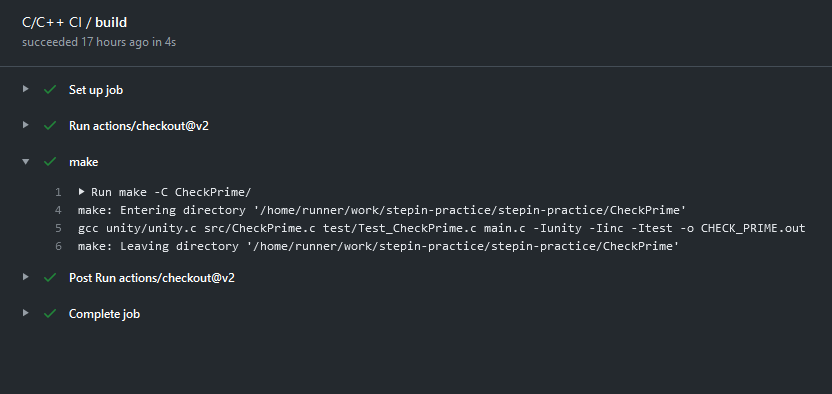
* **Commit log:**



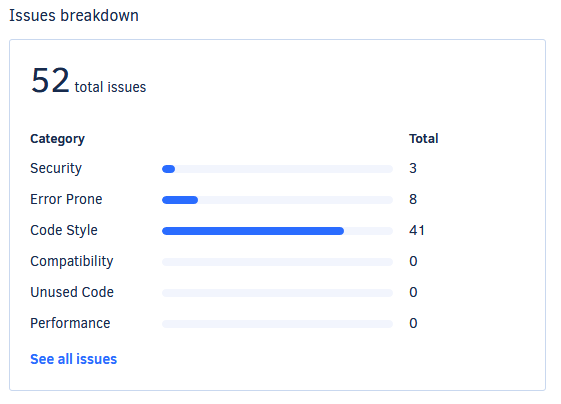
* **Actions:**



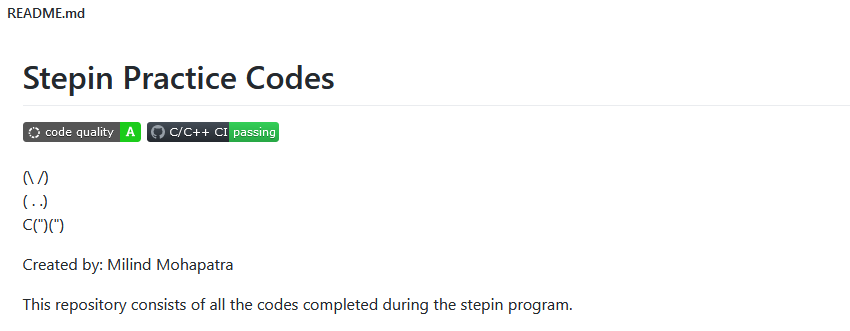
* **Build:**



* **Codacy issues:**



* **Badges:**



* **Makefile:**

|  |
| --- |
| SRC = unity/unity.c\ |
|  |

|  |
| --- |
| src/CheckPrime.c\ |
|  |

|  |
| --- |
| test/Test\_CheckPrime.c\ |
|  |

|  |
| --- |
| main.c |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| INC = -Iunity\ |
|  |

|  |
| --- |
| -Iinc\ |
|  |

|  |
| --- |
| -Itest |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| PROJECT\_NAME = CHECK\_PRIME.out |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| $(PROJECT\_NAME): $(SRC) |
|  |

|  |
| --- |
| gcc $(SRC) $(INC) -o $(PROJECT\_NAME) |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| run:$(PROJECT\_NAME) |
|  |

|  |
| --- |
| ./${PROJECT\_NAME} |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| doc: |
|  |

|  |
| --- |
| make -C documentation |
|  |

|  |
| --- |
|  |
|  |

|  |
| --- |
| clean: |
|  |

rm -rf $(PROJECT\_NAME) documentation/html

## **Activity 3** – Agile Aspects

* User story 1:

As a responsible citizen, I want to conserve energy so that the systems are more sustainable and work for longer periods of time.

* User story 2:

As a daily commuter, I want the street lamps to turn ON whenever it is dark so that the roads are always visible.

* User story 3:

As a daily commuter, I want the street lamps to work appropriately in all weather conditions so that roads are visible.