Online Cloud Compiler (ONCC)

CAPSTONE PROJECT
(CS691/CS692)

PRESENTED BY **DEBUG ENTITY**

Roles and Responsibilities

Harshada Chaudhary:

Frontend Developer/Designer

- Integrated HTML/CSS web pages in Flask
- Connected user database with Flask.
- Designed user interactions in web pages.

Anchal Singh:

Product Owner/Project Manager

- Defined stories and prioritized the product backlog.
- Evaluated product progress at each iteration.
- Maintained and authored technical documentation and GitHub.

Ramesh Kyasaram:

Frontend Developer/Tester

- Designed web page layout in HTML/CSS.
- Tested different complier modules.
- Ensured quality of the developed product.

Brandon Mercado:

AWS Cloud Engineer, Solution Architect

- Designed, managed and maintained technological duties associated with AWS Cloud.

Sanath Gholap:

Scrum Master/Tester

- Conducted weekly standups with team members and delegated tasks.
- Assisted team in documentation, handling GitHub related tasks.
- Tested compiler modules and their integration with frontend.

Tushar Rakholiya:

Fullstack Developer (Lead)

- Researched and implemented backend technologies.
- Monitored servers and databases for functionality.
- Ensured responsiveness of application.

Agenda

Project Overview
- Project Requirements
- User Personas

Tools and Technologies
- Front-end, Backend Technologies and Database
- AWS Services
- Tools

System Architecture
- Sequence Diagram
- Database Migration
- AWS diagram

Sprint 1-4 Recap
- Committed and Completed Artifacts
- Statistics
- Test Cases
- Burndown Charts

Sprint 5-7 Recap
- Committed and Completed Artifacts
- Statistics
- Test Cases
- Burndown Charts

Sprint 8 Report
- Committed and Completed Artifacts
- Statistics
- Test Case
- Sprint 8 Burndown Chart

Sprint 8 Deliverables

Retrospective

Conclusion

Demo

Project Overview

- This application is a cloud-based compiler facilitated with five most demanding programming languages such as Java, Python, C/C++ and C#.
- The main objective is achieved in this application is to develop a centralized compiler that helps to reduce problems like portability storage, cost, and space etc.
- It is the most convenient tool to write and compile code, download, share and save code. Moreover, we can run the web-based application remotely from any network connection that is independent of platform.
- Therefore, this Cloud based application benefits user to access the compiler online being at any network instead of installing different IDEs on each machine.

Project Requirements

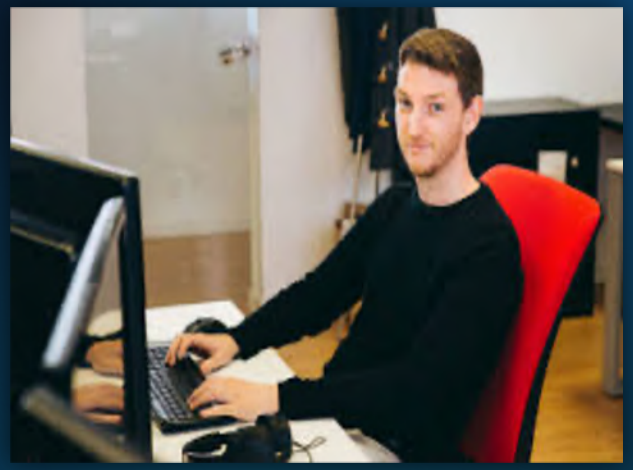
Functional Requirements

- Choosing options for programming languages C/C++, Java, Python and C#

Usability Requirements

- Input code
- Compile code
- Display output
- Save/Share code
- Download code

Persona 1

PICTURE & NAME	DETAILS	GOAL
 Name: Dan William Age: 24 Designation: Student	Role: Student Dan is a Student at Pace University. As an Information Technology student, he is struggling to learn and practice at least two most demanding computer languages so that he can prepare for his interviews to crack coding assessments by practicing his skills at a single platform which is available online where he can write, test and save his code without wasting extra memory space of his computer and save time as well. He can subscribe an online compiler platform, write, save and share the codes for future use.	He wants to get rid of installing multiple IDE's and save his time to practice his coding skills for the assessment tests. Also, he wants to save it for later use.

Persona 2

PICTURE & NAME

Name: Ethan Coufal
Age: 30
Designation: Software Developer

DETAILS

Role: Software Developer

Ethan is an independent mother of her single child. She is a struggling software developer working from home. She has to code in java as well as she has got a task to learn python from her company. But she barely has time to download multiple IDEs to learn, test and save her code simultaneously by keeping in mind the storage space of her computer.

GOAL

She needs a single platform where she can write, test and save her code without wasting the memory of her PC. So that, she can save the time and access her code for long term by saving the code.

Persona 3

PICTURE & NAME

Name: John McCarthy
Age: 27
Designation: Student

DETAILS

Role: Student

John is a student at Pace University. Being a Graduate student in Computer Science, writing and compiling codes in different languages is part of his daily life. Sometimes, He finds it difficult to get the subscription for different IDEs because it's costly and time consuming. It will become more costly if he will take subscription for all different IDEs for each coding languages. Therefore, he yearns for a single platform where he can compile, run and save time at least more frequently used languages (Java, Python, C#, C, C++) at the same platform by making the coder's life easier.

GOAL

He wants a different compiler at single platform, where he can compile at least more frequently used languages (Java, python, C#, C/C++) to make his coding life easier and save time.

Tools and Technologies

- Front-end, Back-end and Database Technologies
- AWS Services
- Other Tools

Front-end, Back-end and Database Technologies

To style the page contents and make the web application interactive.

A lightweight framework to make web application creative and flexible in accessing.

MongoDB is NOSQL database, more suitable with Python (flask), and fast to store and retrieve data from it.

AWS Services

AWS S3 Bucket

- Easy to store and retrieve any amount of data at any time.

AWS EC2

- EC2 provides you with complete control of your computing resources and lets you run on Amazon's proven computing environment.

AWS DynamoDB

- DynamoDB is an Amazon Web Services database system that supports data structures and key-valued cloud services.

AWS IAM

- AWS Identity and Access Management (IAM) enables you to manage access to AWS services and resources securely.

Authy

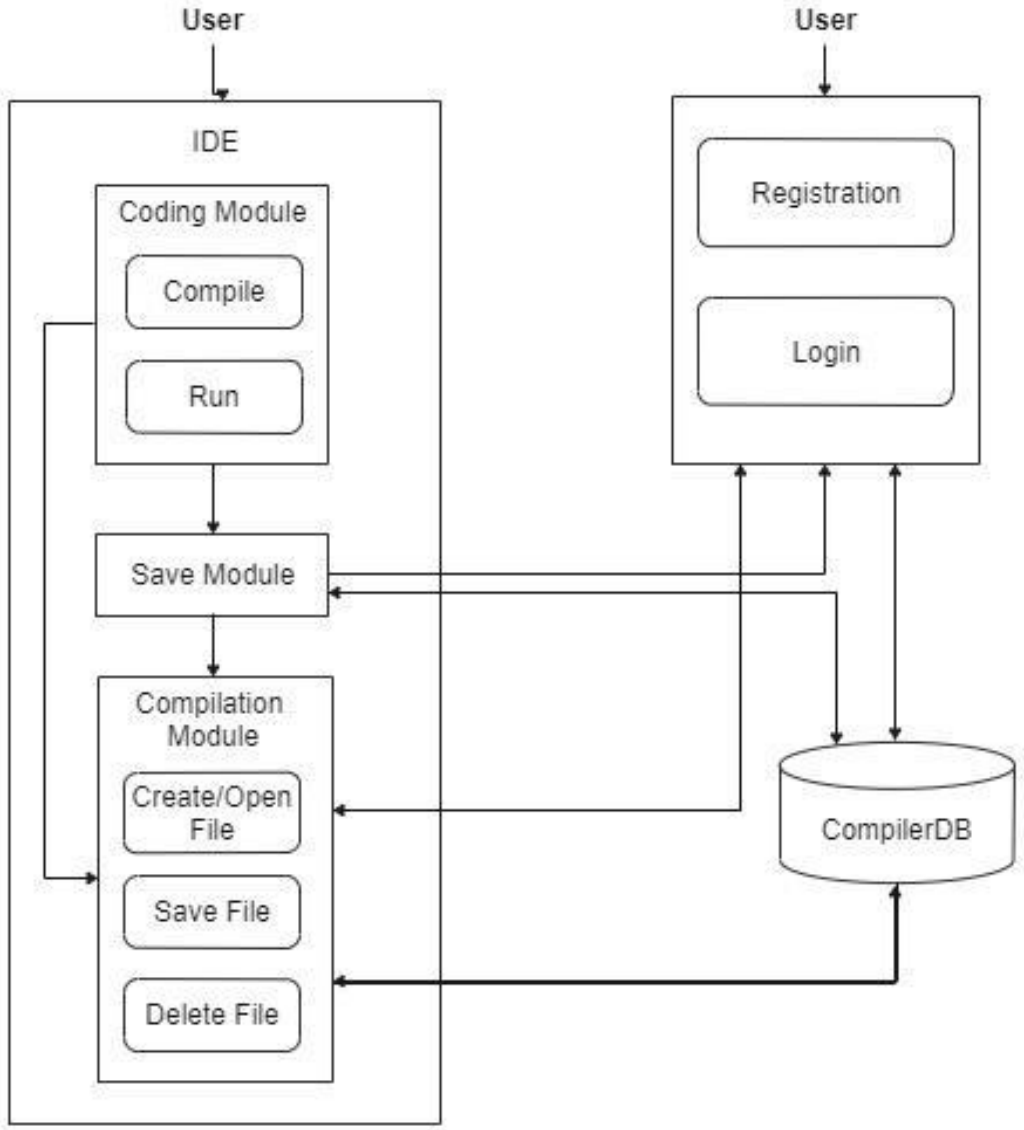
- Authy is a two-factor authentication tool to provide security.

Boto3

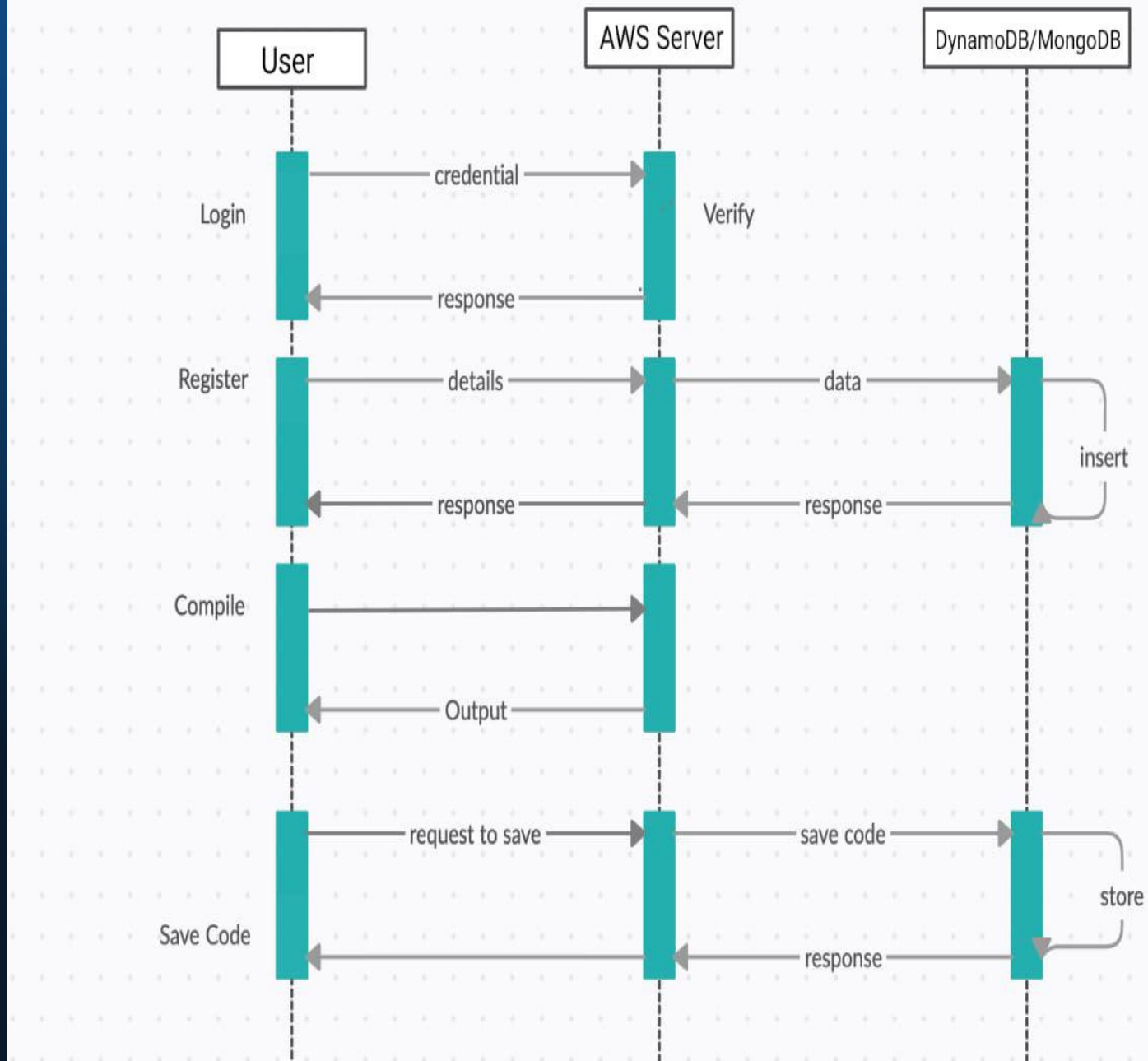
- Boto3 is an AWS SDK for Python to manage AWS Services such as S3 bucket and EC2 instance.

Other Tools

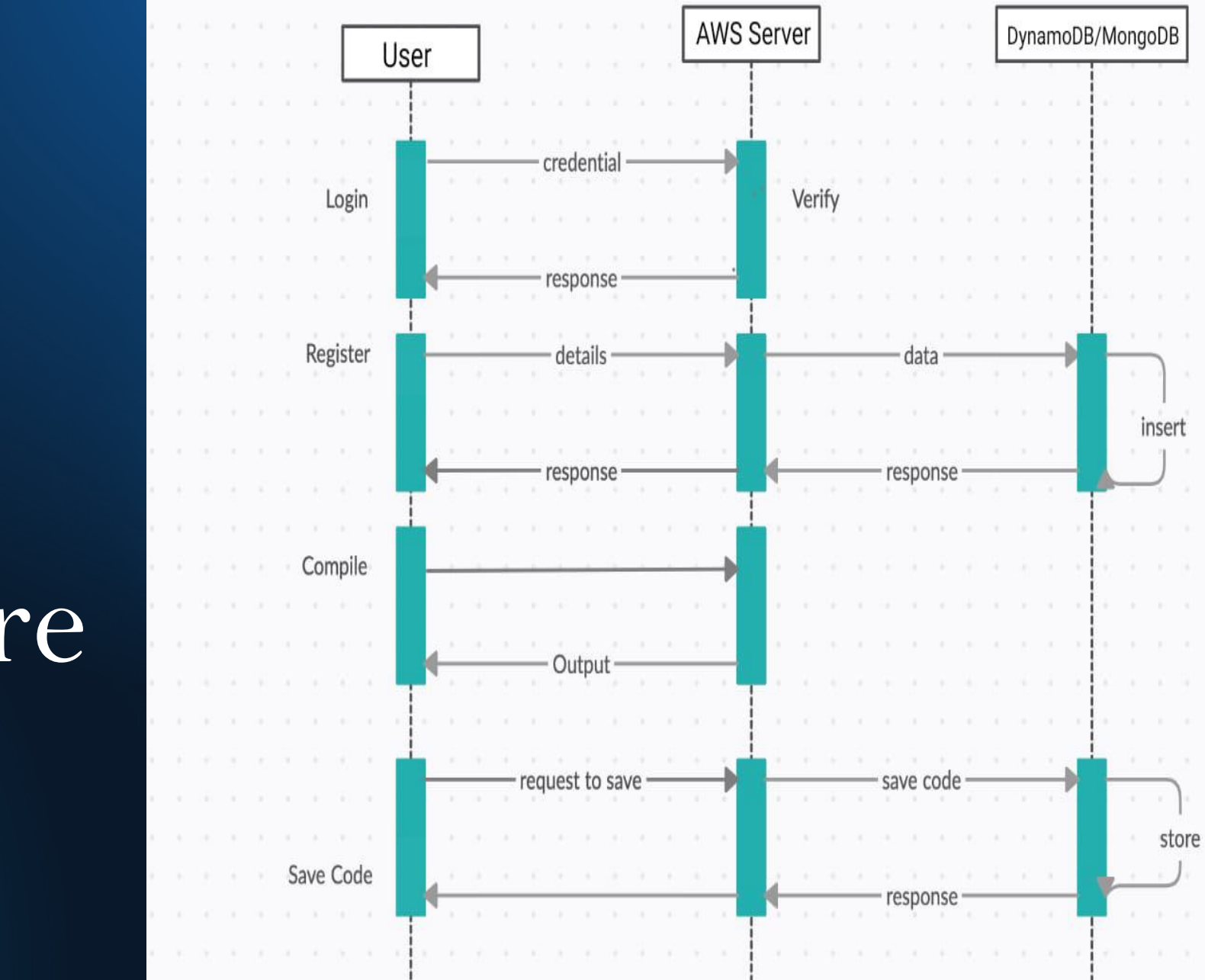
System Architecture



Sequence Diagram



AWS System Architecture



CS-691
Sprint 1-4 Recap

Sprint 1 Artifacts

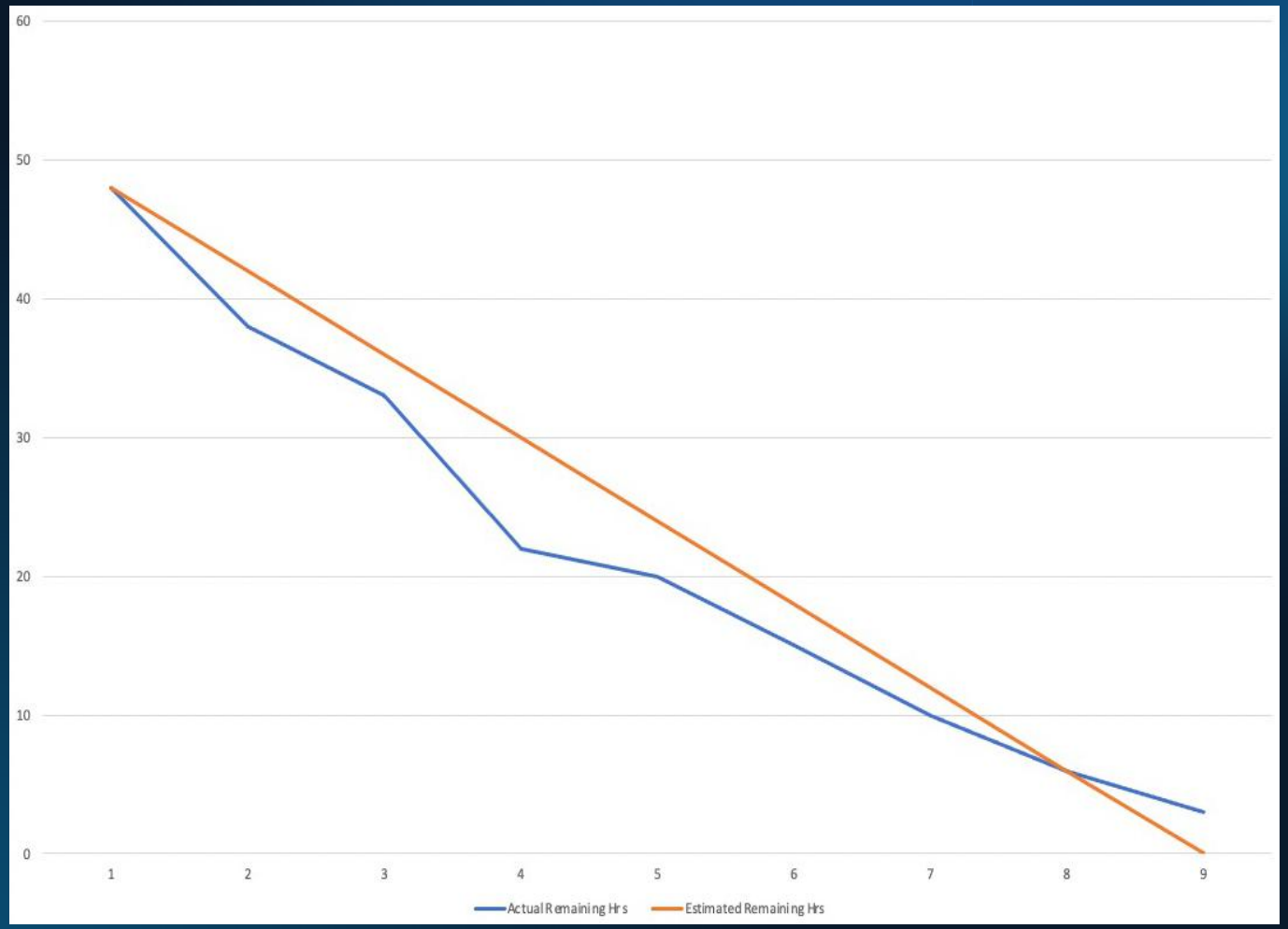
Issue Type	ID	Summary	Priority	Status	Expected Hours	Total Hours (Completed)
Task	ONCC-2	Requirement Gathering	High	Done	10	10
Task	ONCC-4	Project Planning	High	Done	8	6
Task	ONCC-1	Research on Project topics	Medium	Done	20	20
Task	ONCC-3	Discuss and Research Database Design	Medium	In-Progress	6	3
Task	ONCC-5	Task Allocation to each team member	Low	Done	4	4

Sprint 1 Goal:

- Finalize project requirements
- Assign tasks to team members

Sprint 1 Hours Burndown

September 04, 2020 - October 18,2020

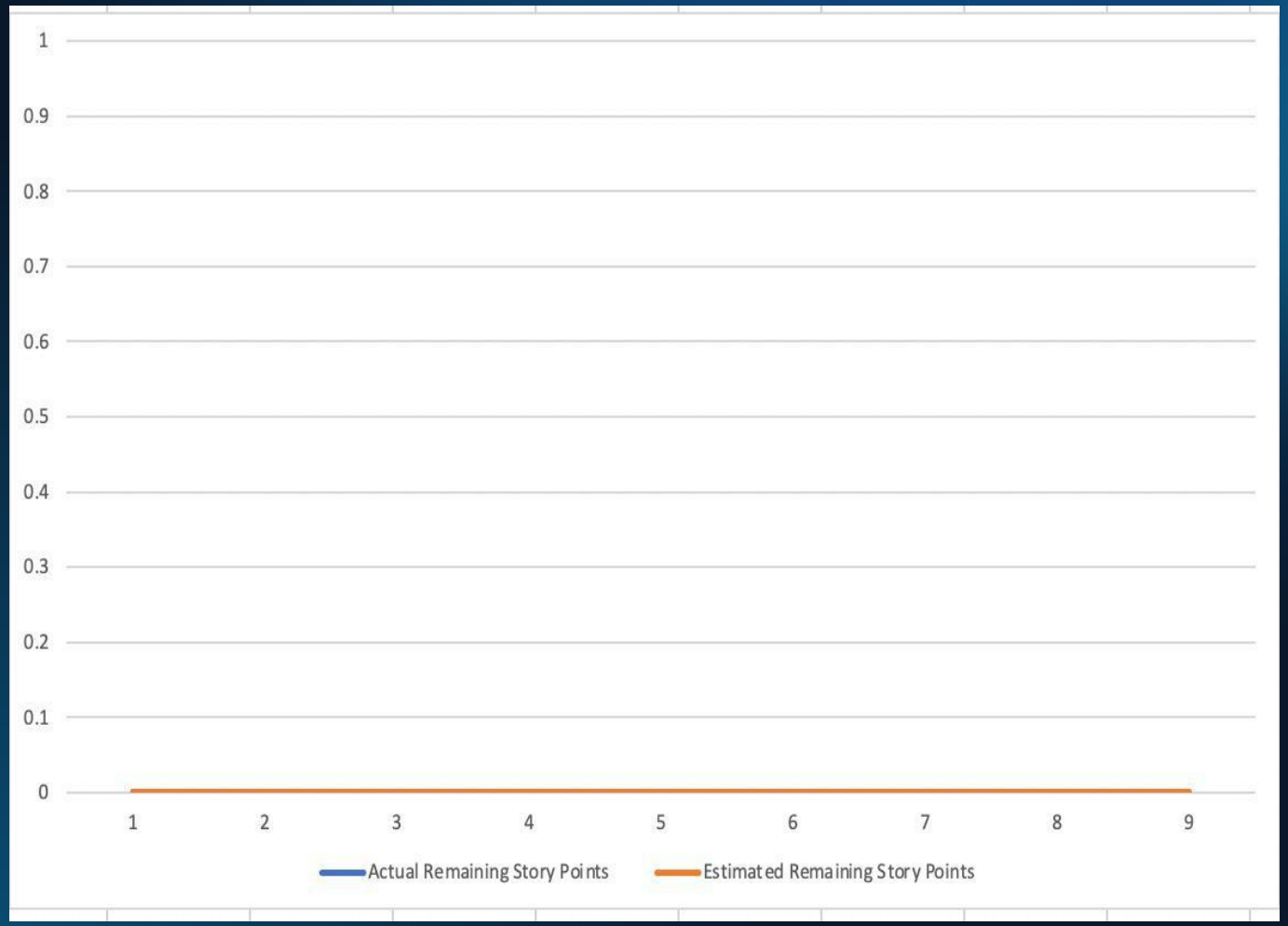


- We used Excel sheet to express our burndown charts.
- This chart is based on Total Hours
- Expected Hours=48
- Completed Hours=45
- Remaining Hours=3
- Completed Artifacts (hours)= 94%

- We have moved ONCC-3 task in Sprint-2

Sprint 1 Burndown (Story Points)

September 04, 2020 - October 18,2020



We don’t have any user stories for Sprint 1
Velocity =0

Sprint 2 Artifacts

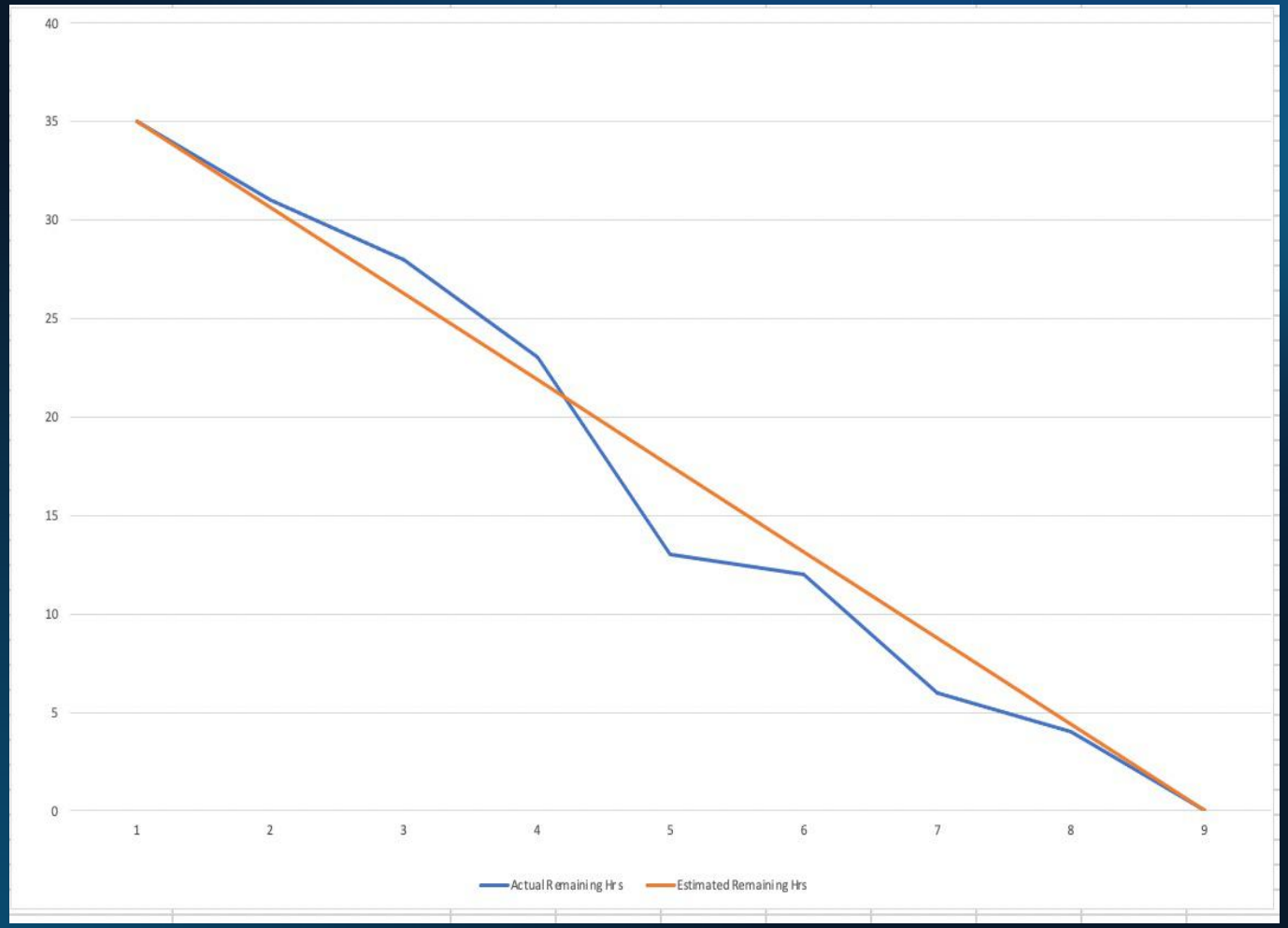
Issue Type	ID	Summary	Priority	Status	Expected Hours	Total Hours (Completed)
Task	ONCC-3	Discuss and Research Database Design	High	Done	3	3
Task	ONCC-8	Initialize Web Application	High	Done	7	7
Task	ONCC-10	Research about the compiler module	High	Done	8	8
Task	ONCC-7	Finalizing Database	Medium	Done	6	6
Task	ONCC-9	Research about the Cloud Service to be used.	Medium	Done	3	3
Task	ONCC-6	Learning Python Flask	Medium	Done	8	8

Sprint 2 Goal:

- Research about Database, front-end and Compiler technologies.
- Learn about compiler and Python(Flask)

Sprint 2 Hours Burndown

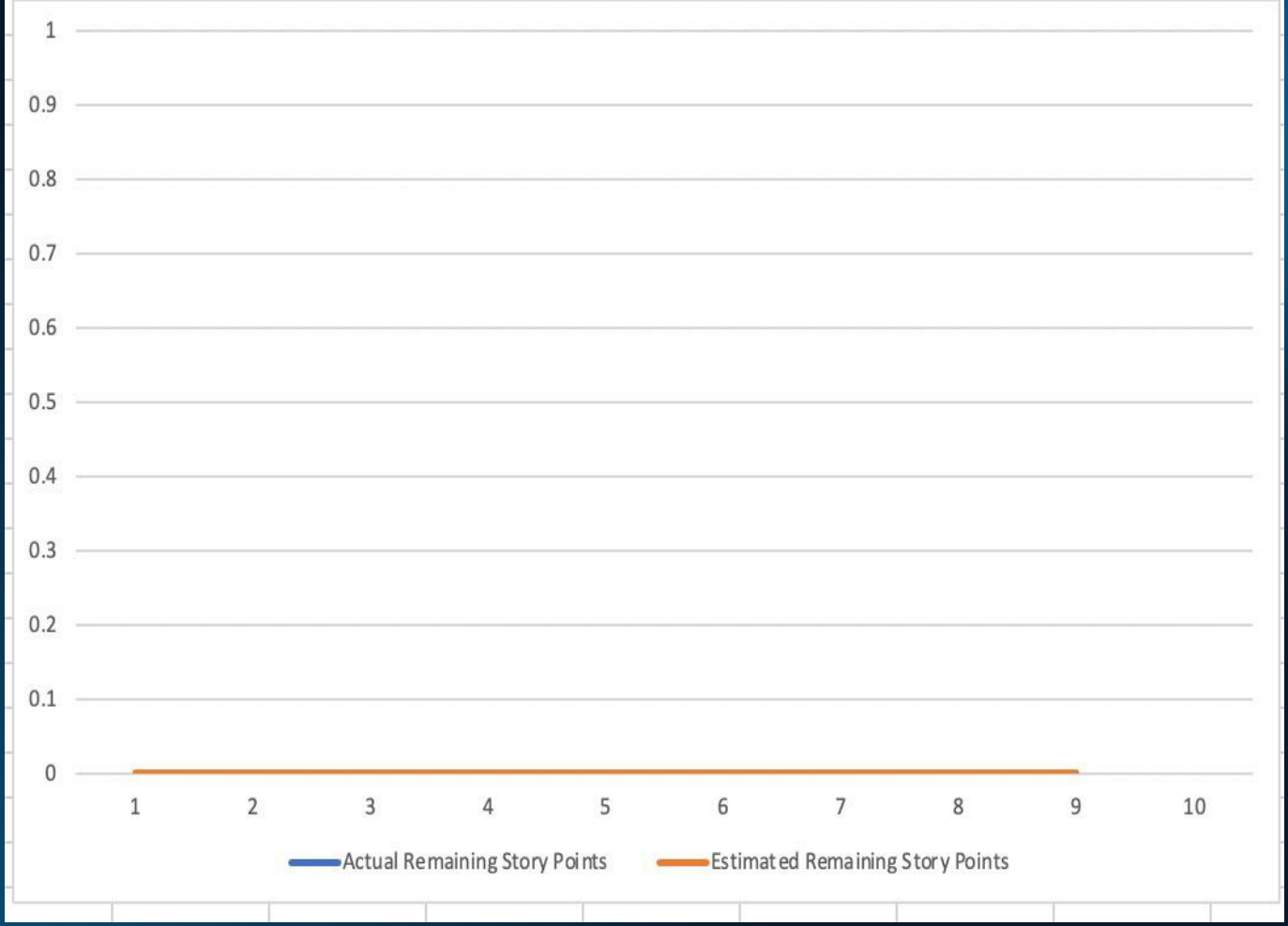
September 23, 2020 - October 05, 2020



- We used Excel sheet to express our burndown charts.
- This chart is based on Total Hours
- Expected Hours=35
- Completed Hours=35
- Completed Artifacts (hours) = 100%

Sprint 2 Burndown (Story Points)

September 23, 2020 - October 05, 2020



We don’t have any user stories for Sprint 2
Velocity = 0

Sprint 3 Artifacts

Issue Type	ID	Summary	Priority	Status	Expected Hours	Total Hours (Completed Hours)
Task	ONCC-11	Initiate the compiler module with python	High	Done	15	15
Task	ONCC-12	Database Design	High	Done	6	6
Task	ONCC-13	Create database table for user and registration	High	Done	5	5
Task	ONCC-14	Design login page	Medium	Done	4	4
Task	ONCC-15	Design Registration page	Medium	Done	4	4
Task	ONCC-16	Connection between web application and database	Medium	Done	6	6
Task	ONCC-17	Initiate the REST API development-GET command	Medium	Done	5	5

Sprint 3 Goal:

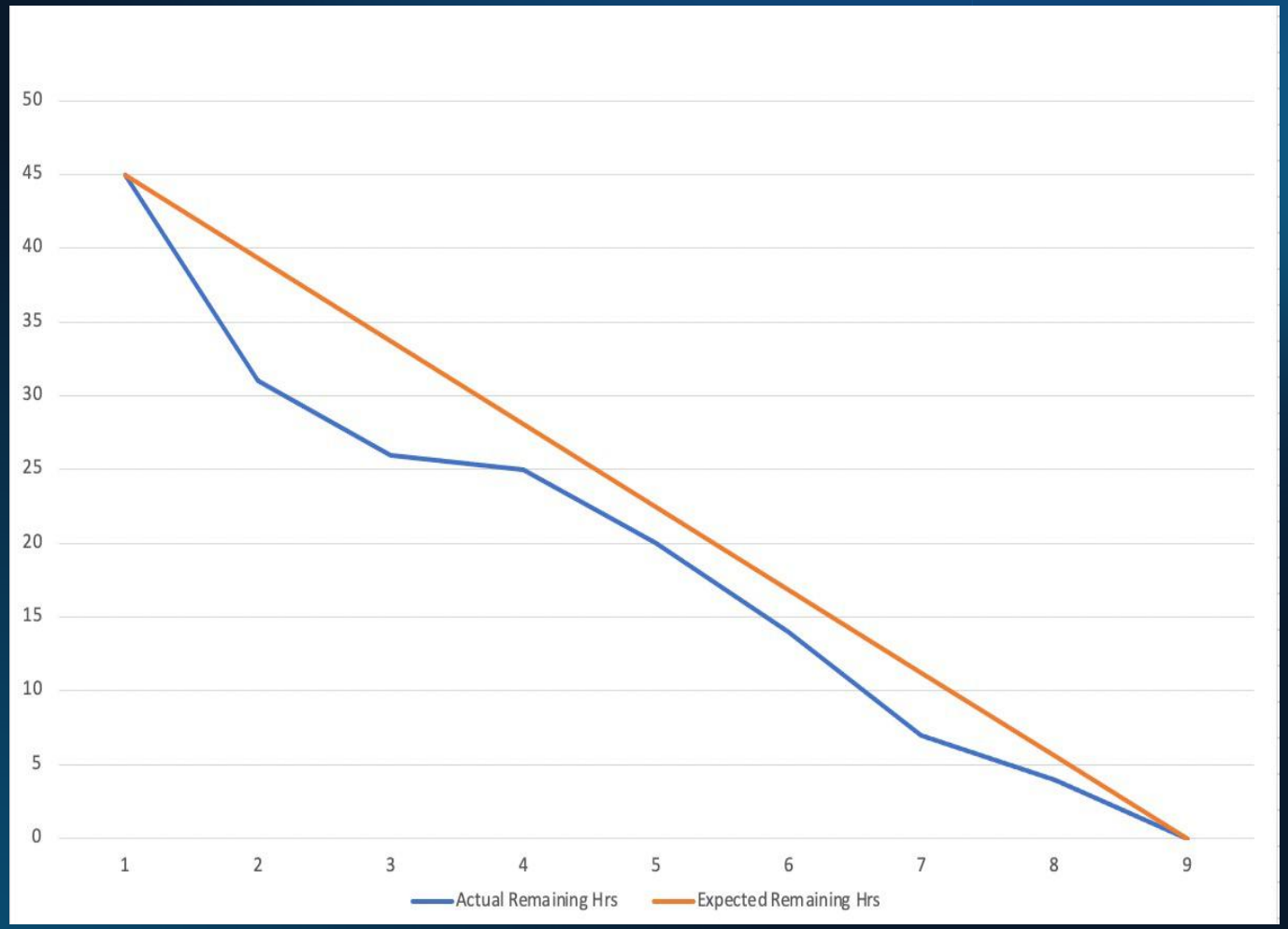
- Design login and Registration Page
- Create User Table in MongoDB
- Connect web application with MongoDB

Sprint 3 Test Cases

Test Cases for	ID	Steps	Test Scenario	Test Data	Expected Results	Actual Results	Pass/Fail
Registration	ONCC-15	1	Check registration form with First name	Sanath	NO Validation Errors	NO Validation Errors	PASS
		2	Check registration form without first name	*Blank*	Validation Errors	Validation Errors	PASS
		3	Check registration form with Last name	Gholap	NO Validation Errors	NO Validation Errors	PASS
		4	Check registration form without Last name	*Blank*	Validation Errors	Validation Errors	PASS
		5	Check registration form with vaild email	sanath2097@gmail.com	NO Validation Errors	NO Validation Errors	PASS
		6	Check registration form without email	*Blank*	Validation Errors	Validation Errors	PASS
		7	Check registration form with Password	testpassword	NO Validation Errors	NO Validation Errors	PASS
		8	Check registration form without Password	*Blank*	Validation Errors	Validation Errors	PASS
		9	Check registration form with invalid email	sanathgholap.com	Validation Errors	Validation Errors	PASS
		10	Check registration form with confirming Password	*Wrong password in confirm field*	NO Validation Errors	NO Validation Errors	PASS
Compiler	ONCC-11	1	Choosing the language from the drop-down menu with selecting a language	Java/Python/C/C++/C#	NO Validation Errors	NO Validation Errors	PASS
		2	Choosing the language from the drop-down menu without selecting a language	*Blank*	Validation Errors	Validation Errors	PASS

Sprint 3 Hours Burndown

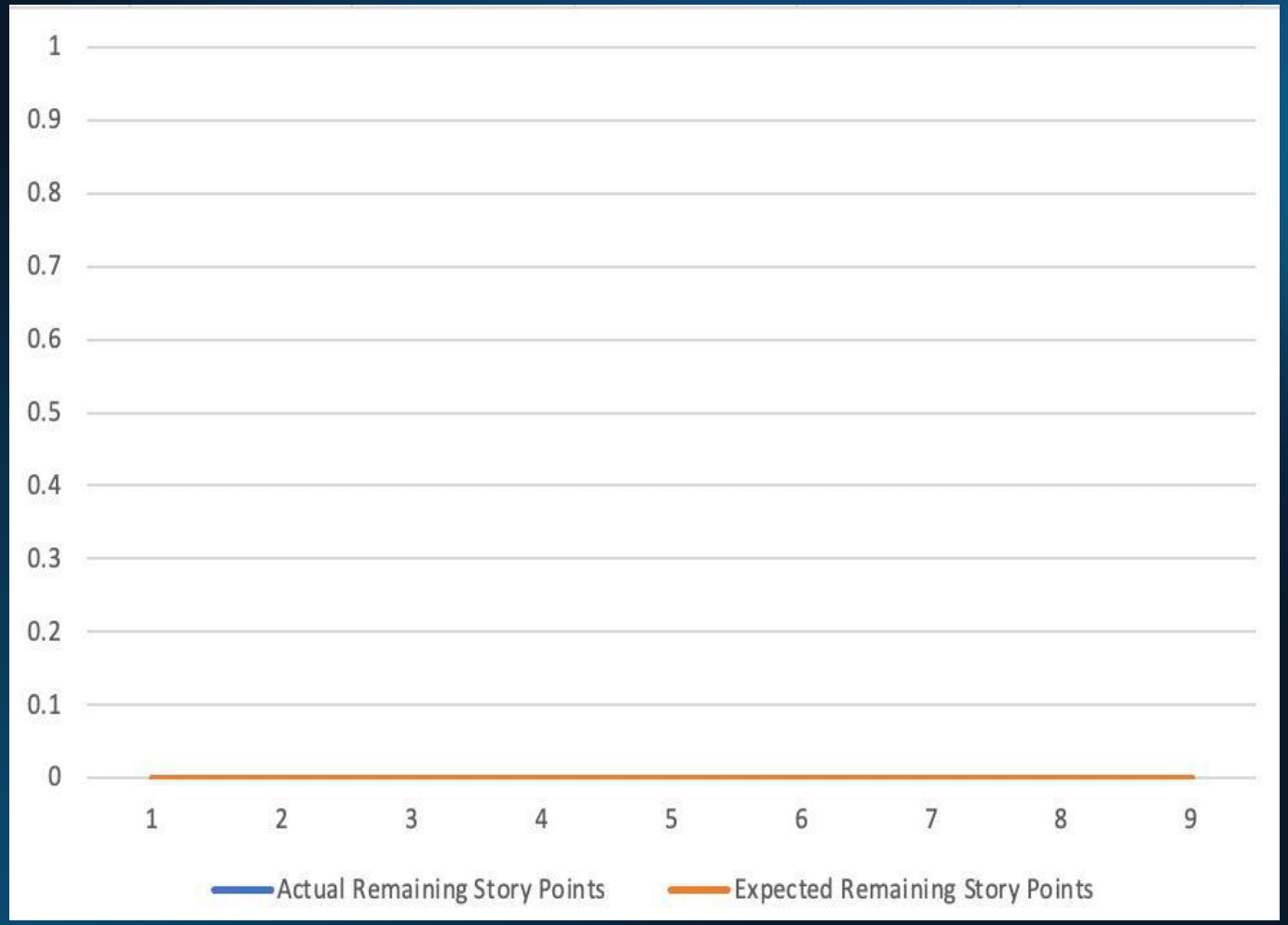
October 6, 2020 - October15, 2020



- We used Excel sheet to express our burndown charts.
- This chart is based on Total Hours
- Expected Hours=45
- Completed Hours=45
- Completed Artifacts (hours) = 100%

Sprint 3 Burndown (Story Points)

October 6, 2020 - October15, 2020



We don’t have any user stories for Sprint 3
Velocity = 0

Sprint 4 Artifacts

Issue Type	ID	Summary	Priority	Status	Story Points
Story	ONCC-19	As a Guest User, I want to have an option to select Java programming language so that I can compile my code written in Java language	High	Done	8
Story	ONCC-20e	As a Registered User, I want to have a login page so that I can use features like save and edit existing code which are exclusively available for registered users only	High	Done	2
Task	ONCC-21e	Decoding the password while comparing the password	High	Done	N/A
Task	ONCC-22e	Initiate the saving source code module in front-end	High	Done	N/A
Task	ONCC-23e	Create table for saving source code	High	Done	N/A
Task	ONCC-24e	Aggregation of the tables for saving source code to specific user	High	Done	N/A
Task	ONCC-26e	Create session for each user after login	High	Done	N/A
Task	ONCC-18e	Existing user can not re-register	Medium	Done	N/A
Task	ONCC-25e	REST-API Put, Update, Delete Command	Medium	Done	N/A

Sprint 4 Goal:

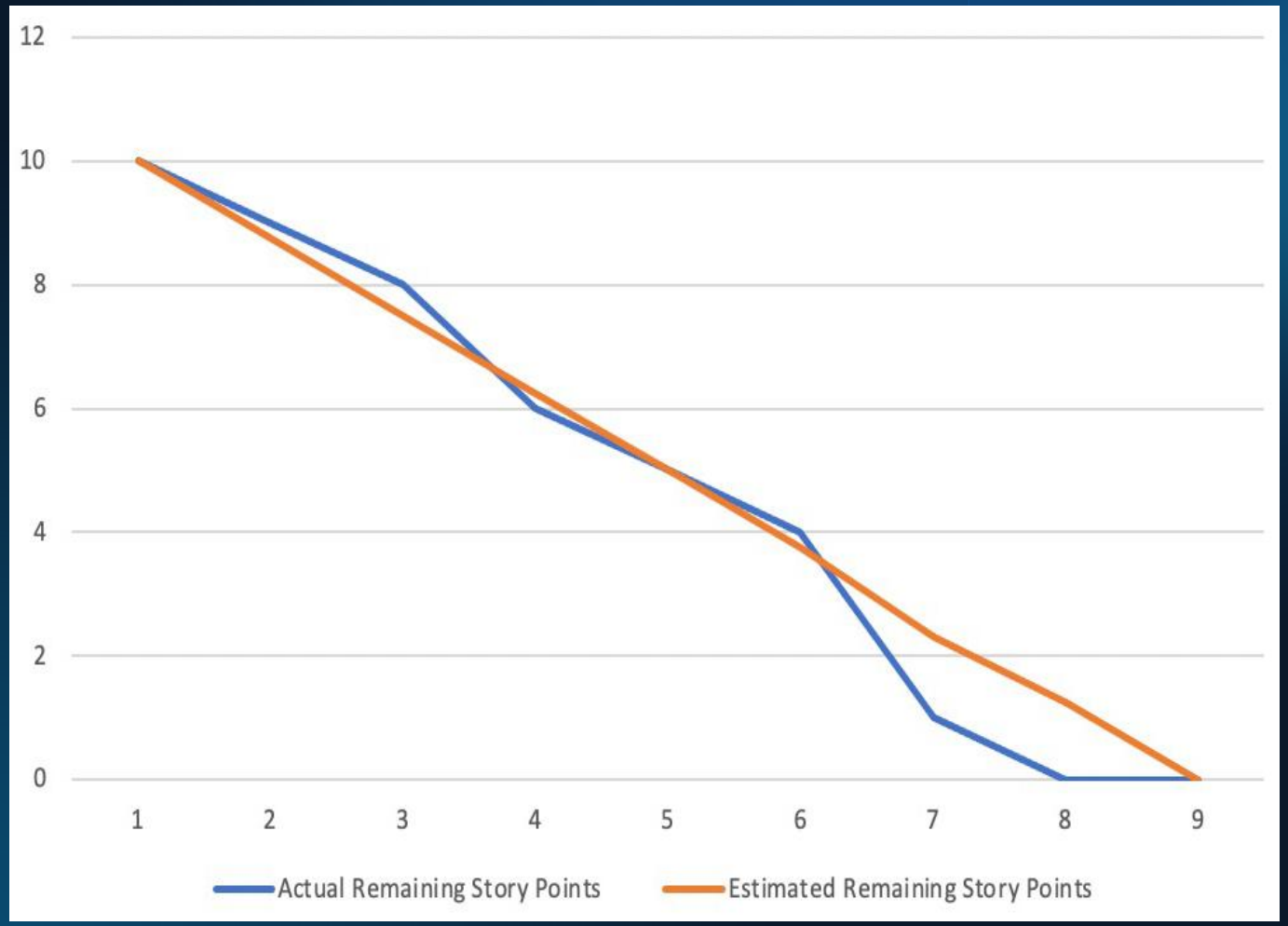
- Facilitate Compiler with Java module
- Develop Login Module with flask(Python)

Sprint 4 Test Cases

Test Cases for	ID	Steps	Test Scenario	Test Data	Expected Results	Actual Results	Pass/Fail
Login	ONCC-20e	1	Check Login page with Password	testpassword	NO Validation Errors	NO Validation Errors	PASS
		2	Check Login page without Password	*Blank*	Validation Errors	Validation Errors	PASS
		3	Registration with pre-registered e-mail ID	sanath2097@gmail.com	User Already Exists Error	User Already Exists Error	PASS
Compiler	ONCC-19	1	Options available for Java compiler in dropdown menu	Java Code	Java compiler will be selected, and you can write your code in Java Programming Language	Java compiler is selected, and you can write Java code in the Input Text area	PASS

Sprint 4 Burndown

October 28, 2020 - November 16, 2020



We used Excel sheet to express our burndown chart.
This chart is based on Story Points.
We completed 2 user stories ONCC-19 and ONCC-20 in Sprint-4.
Committed Story Points=10
Completed Story Points=10
Completed Artifacts=100%
Velocity = 10

CS-692
Sprint 5-7 Recap

Sprint 5 Artifacts

Issue Type	ID	Summary	Priority	Status	Story Points
Story	ONCC-26e	As an Existing User, I want a record of saved code so that, I can retrieve my saved code whenever required	High	Done	8
Task	ONCC-27e	Aggregation of the Tables for sharing code	High	Done	N/A
Task	ONCC-29e	Integration of DynamoDB + AWS	High	Done	N/A
Task	ONCC-28e	REST - API PUT, UPDATE, DELETE command	Medium	Done	N/A

Sprint 5 Goal:

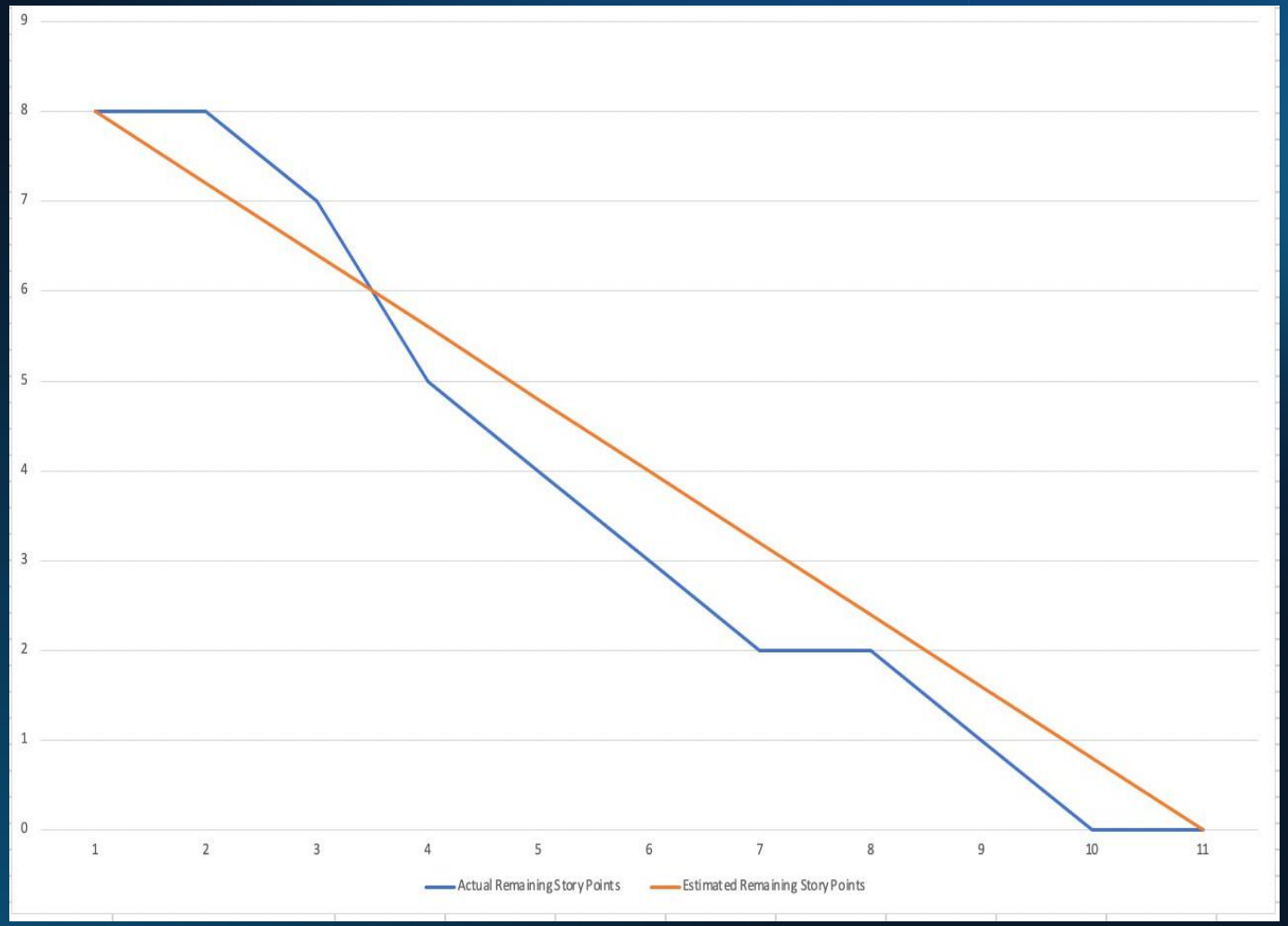
- Create Table for Save Module
- Integrate DynamoDB with AWS Cloud Platform

Sprint 5 Test Cases

Test Cases for	ID	Steps	Test Scenario	Test Data	Expected Results	Actual Results	Pass/Fail
Save	ONCC-26e	1	Saving Code in Database	Code Written in the Code Area and clicking the save button	Code must be saved in the database	Code is getting stored in the database	PASS
		2	Saving Code in Database	Empty code is stored	It should pop up the message that code is empty	When clicked on the save with empty code it shows that code is empty	PASS

Sprint 5 Burndown

January 26, 2021 - February 23, 2021



We used Excel sheet to express our burndown chart.
This chart is based on Story Points.
We completed 1 user story ONCC-26e in Sprint-5
Committed Story Points=8
Completed Story Points=8
Completed Artifacts=100%
Velocity = 8

Sprint 6 Artifacts

Issue Type	ID	Summary	Priority	Status	Story Points (Estimated)	Story Points (Completed)
Story	ONCC-26	As a guest user I want to access a web application on cloud server so that I can compile code in any programming languages	Highest	Done	4	4
Story	ONCC-36	As a guest user I want to have C programming language option so that I can compile my code in C language	Highest	Moved to Sprint 7	22	17
Task	ONCC-24	Get reference of C compiler using python pre-processing module	Highest	Done	N/A	N/A
Task	ONCC-21	Migration of MongoDB user table to DynamoDB part2	Highest	Done	N/A	N/A
Task	ONCC-20	Onboarded whole team on AWS	Highest	Done	N/A	N/A
Task	ONCC-48	Merging C module with flask web application	Medium	Moved to 7	N/A	N/A
Bug	ONCC-49	Connectivity between C module and web application	Medium	Moved to 7	N/A	N/A
Task	ONCC-25	Make a module to take pre-defined input from user	Medium	Done	N/A	N/A
Task	ONCC-23	Installation of C module on system	Medium	Done	N/A	N/A
Task	ONCC-29	Create sprint 6 presentation slides	Medium	Done	N/A	N/A
Task	ONCC-28	Update website design to make user friendly	Low	Moved to 7	N/A	N/A
Task	ONCC-31	Update user manual sprint 6	Low	Done	N/A	N/A
Task	ONCC-30	Update technical paper sprint 6	Low	Done	N/A	N/A
Task	ONCC-35	Update wiki page sprint 6	Low	Done	N/A	N/A

Sprint 6 Goal:

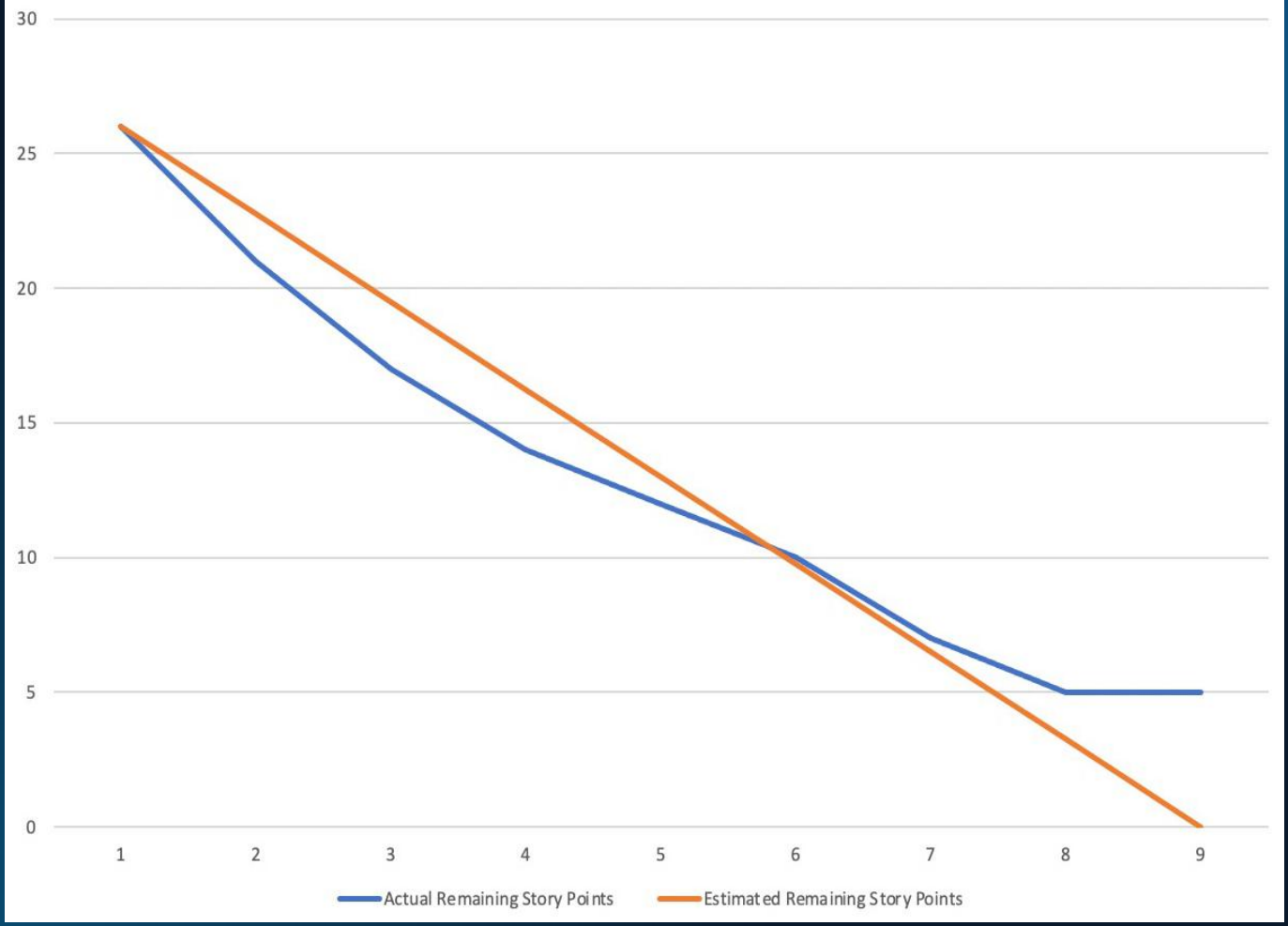
- Onboarding of whole team on AWS
- Felicitate Compiler with C module
- Migration of MongoDB tables to DynamoDB

Sprint 6 Test Cases

Test Cases for	Key	Steps	Test Cases	Test Data	Expected Results	Actual Results	Status
Cloud access	ONCC-26	1	Options available for C compiler in drop-down menu	Selecting C option from drop-down menu	C compiler will be selected and "Write code in C language here" placeholder will be displayed in the text area	C compiler is selected and "Write code in C language here" placeholder is displayed in the text area	PASS
Compiler	ONCC-36	1	Writing and compiling the code in C language.	Enters the code in C language and click on Run button	Code should be compiled successfully and get the desired output or errors	No output or error message displayed	FAIL
					Code is not successfully compiled and shows error	No output or error message displayed	FAIL
		2	Compiling empty code	Click on Run button without writing code	Will show error for empty code in error field	No error message displayed	FAIL
		3	Running test code in python pre-processing module	Entering C code in pre-processing module	Getting desired output in String variable	Got output in the String variable	PASS
					Getting expected error in Error variable if code is wrong	Got desired error in the Error variable	PASS
					Entering Predefined Input for the code to compile with input	Accepting input for written code and compiling with the input	PASS
		4	Entering Predefined input	Entering input in the input field for the compilation of code with input parameter	Taking input from input field and adding it into the code	No output	FAIL
					Showing input missing when the field is empty when required	No Output	FAIL

Sprint 6 Burndown

February 24, 2021 - March 16, 2021



We used Excel sheet to express our burndown chart.
This chart is based on Story Points.
We completed 1 user story ONCC-26 in Sprint-6
Committed Story Points=26
Completed Story Points=21
Completed Artifacts= 80%
Velocity = 21

Sprint 7 Artifacts

Issue Type	ID	Summary	Priority	Status	Story Points
Story	ONCC-36	As a Guest User, I want to have an option to select C programming language so that I can compile my code written in C language	Highest	Done	22
Task	ONCC-43	Embedding compiler into the web Application	Highest	Done	N/A
Story	ONCC-51	As a Guest User, I want to have an option to select C++ programming language so that I can compile my code written in C++ language	Highest	Done	22
Story	ONCC-37	As an Existing User, I want the ability to Save my code so that I can retrieve my saved code whenever required	High	Done	6
Task	ONCC-38	Create a table for saving code	High	Done	N/A
Task	ONCC-53	Get the reference of the C++ compiler using python pre-processing module	Medium	Done	N/A
Task	ONCC-63	Make a module to take pre-defined input from user for C++ module	Medium	Done	N/A
Task	ONCC-54	Merge C++ language compiler module with Flask web application	Medium	Done	N/A
Task	ONCC-52	Installation of C++ compiler module on system	Medium	Done	N/A
Task	ONCC-48	Merge C language compiler module with Flask web application	Medium	Done	N/A
Task	ONCC-46	Update User Manual	Medium	Done	N/A
Bug	ONCC-61	Layout of the HTML page is disrupted after embedding compiler module in flask web application	Medium	Done	N/A
Task	ONCC-55	Update Wiki page on GitHub	Medium	Done	N/A
Task	ONCC-44	Make presentation slides for sprint7	Medium	Done	N/A
Task	ONCC-40	Fetch saved code from database	Medium	Done	N/A
Task	ONCC-45	Update technical Paper	Medium	Done	N/A
Task	ONCC-28	Update website design and make it more user friendly	Low	Done	N/A
Task	ONCC-39	Update front-end for save feature	Low	Done	N/A

Sprint 7 Goal

- Compiler has facilitated with C and C++ language module.
- Save Feature is available for authorized users to save their code whenever required for future use.

Sprint 7 Test Cases

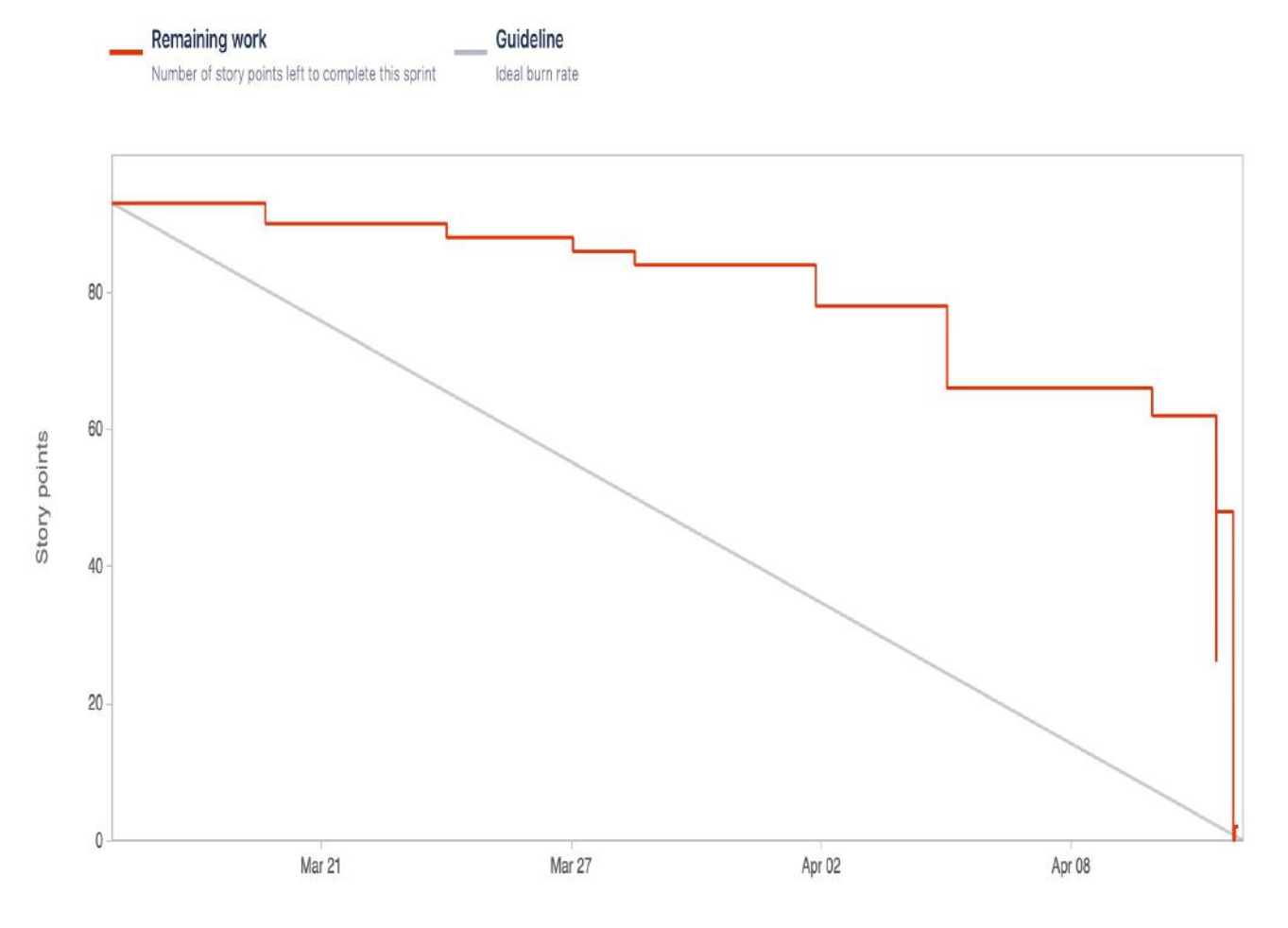
Test Cases for	Story ID	Steps	Test Cases	Test Data	Expected Results	Actual Results	Status
Compiler	ONCC 36	1	Writing and compiling the code in C language.	Enters the code in C language and click on Run button	Code should be compiled successfully and get the desired output or errors	Code should be compiled successfully and get the desired output or errors	PASS
				Enters the code in C language and click on Run button	Code is not successfully compiled and shows error	Code Returns Appropriate Error in the error list	PASS
		2	Compiling empty code	Click on Run button without writing code	Will show error for empty code in error field	Shows Empty Code message	PASS
		3	Running test code in python pre-processing module	Entering C code in pre-processing module	Getting desired output in String variable	Got output in the String variable	PASS
				Entering C code in pre-processing module	Getting expected error in Error variable if code is wrong	Got desired error in the Error variable	PASS
				Entering C code in pre-processing module	Entering Predefined Input for the code to compile with input	Accepting input for written code and compiling with the input	PASS
		4	Entering Predefined input	Entering input in the input field for the compilation of code with input parameter	Taking input from input field and adding it into the code	Predefined Input was taken from the code	PASS
				Entering input in the input field for the compilation of code with input parameter	Showing input missing when the field is empty when required	No Output	FAIL
Save	ONCC-37	1	Saving Code in Database	Code Written in the Code Area and clicking the save button	Code must be saved in the database and should display the title in the saved area	Code is getting stored in the database and it is displayed in the saved area	PASS
		2	Saving Code in Database	Empty code is stored	It should pop up the message that code is empty	When clicked on the save with empty code it shows that code is empty	FAIL

Sprint 7 Test Cases Continued

Test Cases for	Story ID	Steps	Test Cases	Test Data	Expected Results	Actual Results	Status
Compiler	ONCC-51	1	Writing and compiling the code in C++ language.	Enters the code in C++ language and click on Run button	Code should be compiled successfully and get the desired output or errors	Code should be compiled successfully and get the desired output or errors	PASS
				Enters the code in C++ language and click on Run button	Code is not successfully compiled and shows error	Code Returns Appropriate Error in the error list	PASS
		2	Compiling empty code	Click on Run button without writing code	Will show error for empty code in error field	Shows Empty Code message	PASS
		3	Running test code in python pre-processing module	Entering C++ code in pre-processing module	Getting desired output in String variable	Got output in the String variable	PASS
				Entering C++ code in pre-processing module	Getting expected error in Error variable if code is wrong	Got desired error in the Error variable	PASS
				Entering C++ code in pre-processing module	Entering Predefined Input for the code to compile with input	Accepting input for written code and compiling with the input	PASS
		4	Entering Predefined input	Entering input in the input field for the compilation of code with input parameter	Taking input from input field and adding it into the code	Predefined Input was taken from the code	PASS
				Entering input in the input field for the compilation of code with input parameter	Showing input missing when the field is empty when required	No Output	FAIL

Sprint 7 Burndown

March 17, 2021 - April 14, 2021



This chart is based on Story Points.
We completed 3 user stories ONCC-36, ONCC-51 and ONCC-37 in Sprint-7.
Committed Story Points=50
Completed Story Points=50
Completed Artifacts=100%
Velocity = 50

Note :- In this sprint, we have considered story points for tasks also. Based on feedback, we have removed story points of tasks from sprint artifacts.

CS-692
Sprint 8

Overview of Sprint 8

- An online cloud compiler web application with five most demanding programming languages such as C/C++, Java, Python and C#.
- In this sprint, we resolved a bug for Layout of the page disruption which was causing after embedding compiler module.
- The compiler has facilitated with C/C++, Java, Python and C# language module in the drop-down menu.
- Our new feature is available for guest users to create new file.
- We have made our website more user-friendly to access.
- Our website is hosted on the AWS cloud platform.

Recap of Sprint 7

Issue Type	ID	Summary	Priority	Status	Story Points
Story	ONCC-36	As a Guest User, I want to have an option to select C programming language so that I can compile my code written in C language	Highest	Done	22
Task	ONCC-43	Embedding compiler into the web Application	Highest	Done	N/A
Story	ONCC-51	As a Guest User, I want to have an option to select C++ programming language so that I can compile my code written in C++ language	Highest	Done	22
Story	ONCC-37	As an Existing User, I want the ability to Save my code so that I can retrieve my saved code whenever required	High	Done	6
Task	ONCC-38	Create a table for saving code	High	Done	N/A
Task	ONCC-53	Get the reference of the C++ compiler using python pre-processing module	Medium	Done	N/A
Task	ONCC-63	Make a module to take pre-defined input from user for C++ module	Medium	Done	N/A
Task	ONCC-54	Merge C++ language compiler module with Flask web application	Medium	Done	N/A
Task	ONCC-52	Installation of C++ compiler module on system	Medium	Done	N/A
Task	ONCC-48	Merge C language compiler module with Flask web application	Medium	Done	N/A
Task	ONCC-46	Update User Manual	Medium	Done	N/A
Bug	ONCC-61	Layout of the HTML page is disrupted after embedding compiler module in flask web application	Medium	Done	N/A
Task	ONCC-55	Update Wiki page on GitHub	Medium	Done	N/A
Task	ONCC-44	Make presentation slides for sprint7	Medium	Done	N/A
Task	ONCC-40	Fetch saved code from database	Medium	Done	N/A
Task	ONCC-45	Update technical Paper	Medium	Done	N/A
Task	ONCC-28	Update website design and make it more user friendly	Low	Done	N/A
Task	ONCC-39	Update front-end for save feature	Low	Done	N/A

Sprint 8 Report

Issue Type	ID	Summary	Priority	Status	Story Points
Story	ONCC-56	As a Guest User, I want to have an option to select C# programming language so that I can compile my code written in C# language	Highest	Done	8
Task	ONCC-69	Make Presentation slides for final Sprint	High	Done	N/A
Task	ONCC-68	Update GitHub Wiki Page for all Final Sprint	High	Done	N/A
Story	ONCC-65	As a New/Existing User, I want to access my compiler on web so that I don't have to download all IDEs on the local machine	High	Done	2
Story	ONCC-64	As a New/Existing User I want the website to be more user-friendly so that I can easily access the compiler	High	Done	2
Task	ONCC-67	Update technical paper for final sprint	Medium	Done	N/A
Task	ONCC-66	Reorganize all the previous sprint documents	Medium	Done	N/A
Bug	ONCC-61	Layout of the HTML page is disrupted after embedding compiler module in flask web application	Medium	Done	N/A
Task	ONCC-60	Merging the C# language compiler module with Flask web application	Medium	Done	N/A
Task	ONCC-59	Make a module to take pre-defined input from user for C# language	Medium	Done	N/A
Task	ONCC-58	Get the reference of the C# compiler using python pre-processing module	Medium	Done	N/A
Task	ONCC-57	Installation of C# compiler module on system	Medium	Done	N/A
Task	ONCC-50	Implementing AWS services i.e., Boto3, AWS authy in Compiler	Medium	Done	N/A
Task	ONCC-42	Create a LogDB to store logged in user sessions	Medium	Done	N/A
Story	ONCC-41	As a New/Existing User, I want to have an ability to select New option so that I can create New program	Medium	Done	1
Task	ONCC-47	Plan how to prioritize the severity level of the issues, feedback or task.	Low	Done	N/A

Committed and Completed Artifacts

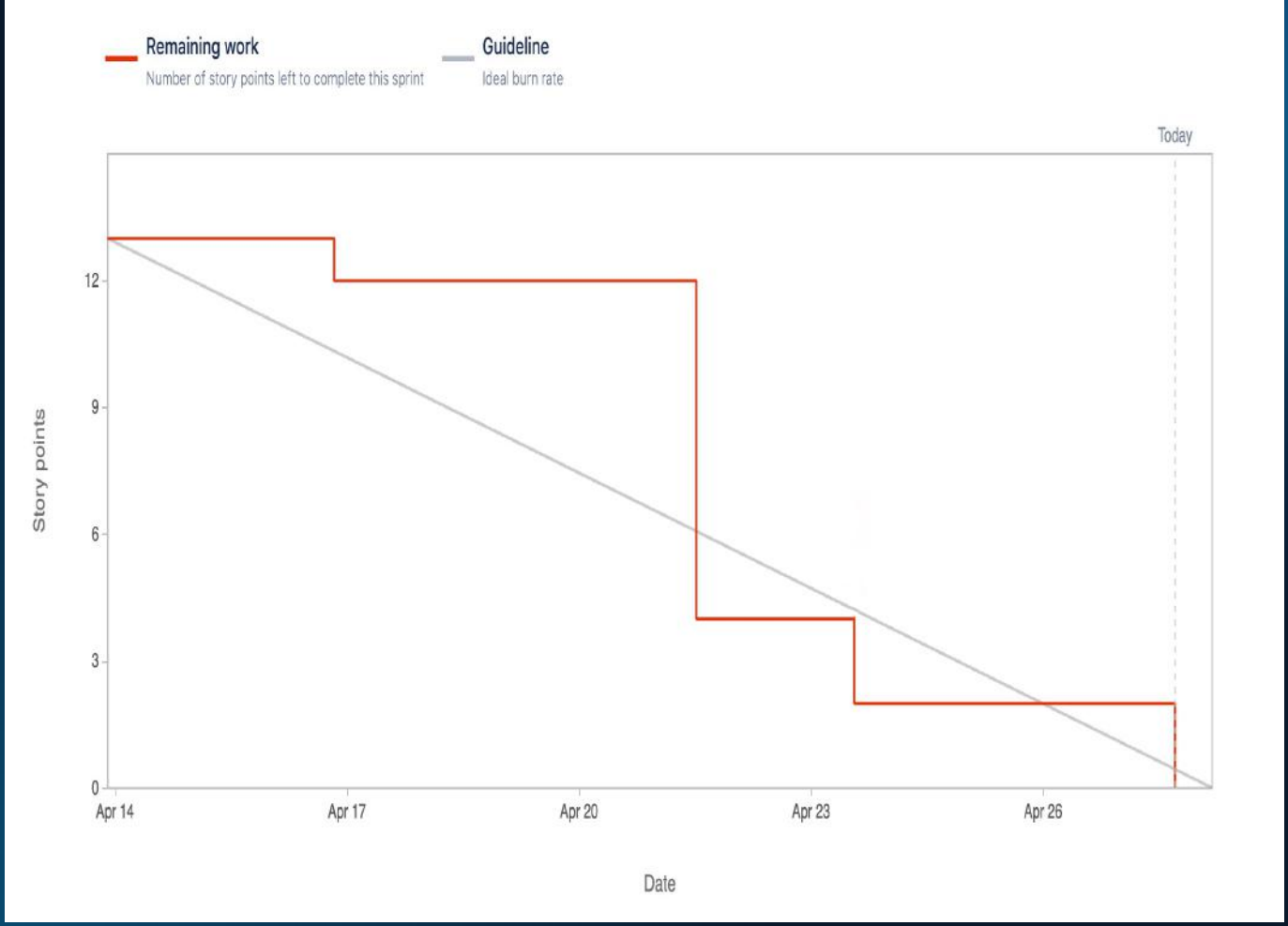
ID	User Story	Acceptance Criteria	Story Priority	Story Points
ONCC-56	As a Guest User, I want to have an option to select C# programming language so that I can compile my code written in C# language	Given that the Guest User is on the Home Page, when the user select the option for C# programming language from drop-down menu, then the user will be able to write and compile code in C# language.	Highest	8
ONCC-65	As a New/Existing User, I want to access my compiler on web so that I don't have to download all IDEs on the local machine	Given that the New/Existing User wants to write programs in multiple languages and get the desired output without having downloaded multiple IDEs then the user can access the online compiler over the website.	High	2
ONCC-64	As a New/Existing User, I want the website to be more user-friendly so that I can easily access the compiler	Given that the New/Existing User wants to easily access the website then the User can use it properly by having it at their fingertips.	High	2
ONCC-41	As a New/Existing User, I want to have an ability to select New option so that I can create New program	Given that the New/Existing User is on the Home Page, the user will be able to create New Program after clicking on "New" button.	Medium	1

Sprint 8 Test Cases

Test Cases for	Story ID	Steps	Test Cases	Test Data	Expected Results	Actual Results	Status
Compiler	ONCC 56	1	Writing and compiling the code in C# language.	Enters the code in C# language and click on Run button	Code should be compiled successfully and get the desired output or errors	Code should be compiled successfully and get the desired output or errors	PASS
				Enters the code in C# language and click on Run button	Code is not successfully compiled and shows error	Code Returns Appropriate Error in the error list	PASS
		2	Compiling empty code	Click on Run button without writing code	Will show error for empty code in error field	Shows Empty Code message	PASS
		3	Running test code in python pre-processing module	Entering C# code in pre-processing module	Getting desired output in String variable	Got output in the String variable	PASS
				Entering C# code in pre-processing module	Getting expected error in Error variable if code is wrong	Got desired error in the Error variable	PASS
				Entering C# code in pre-processing module	Entering Predefined Input for the code to compile with input	Accepting input for written code and compiling with the input	PASS
		4	Entering Predefined input	Entering input in the input field for the compilation of code with input parameter	Taking input from input field and adding it into the code	Predefined Input was taken from the code	PASS
				Entering input in the input field for the compilation of code with input parameter	Showing input missing when the field is empty when required	Input missing message displays if input is not entered	PASS
Website	ONCC 64	1	Accessability of the website feature is user friendly	Accesssing feature of wbapplication easily	All the features of Web application works smoothly without any hustle	There was no hustle behind working of features of the web application	PASS
		2	Design of the website is attractive	requeting all the web paegs of web application for design check	Design of the webpage is consisitent in all web pages	Few web pages has no design consistency	FAIL
Cloud	ONCC 65	1	Web Application Is accessble over the cloud	Web application should be available when tried to access over the website	Web application should appear when it is requested.	Web application is accessable when requested	PASS
		2	All the featues of the web application should be working smoothly	requesting all the features of the web application one by one	All the features of Web application works as requested	All the features are working on the request	PASS

Sprint 8 Burndown

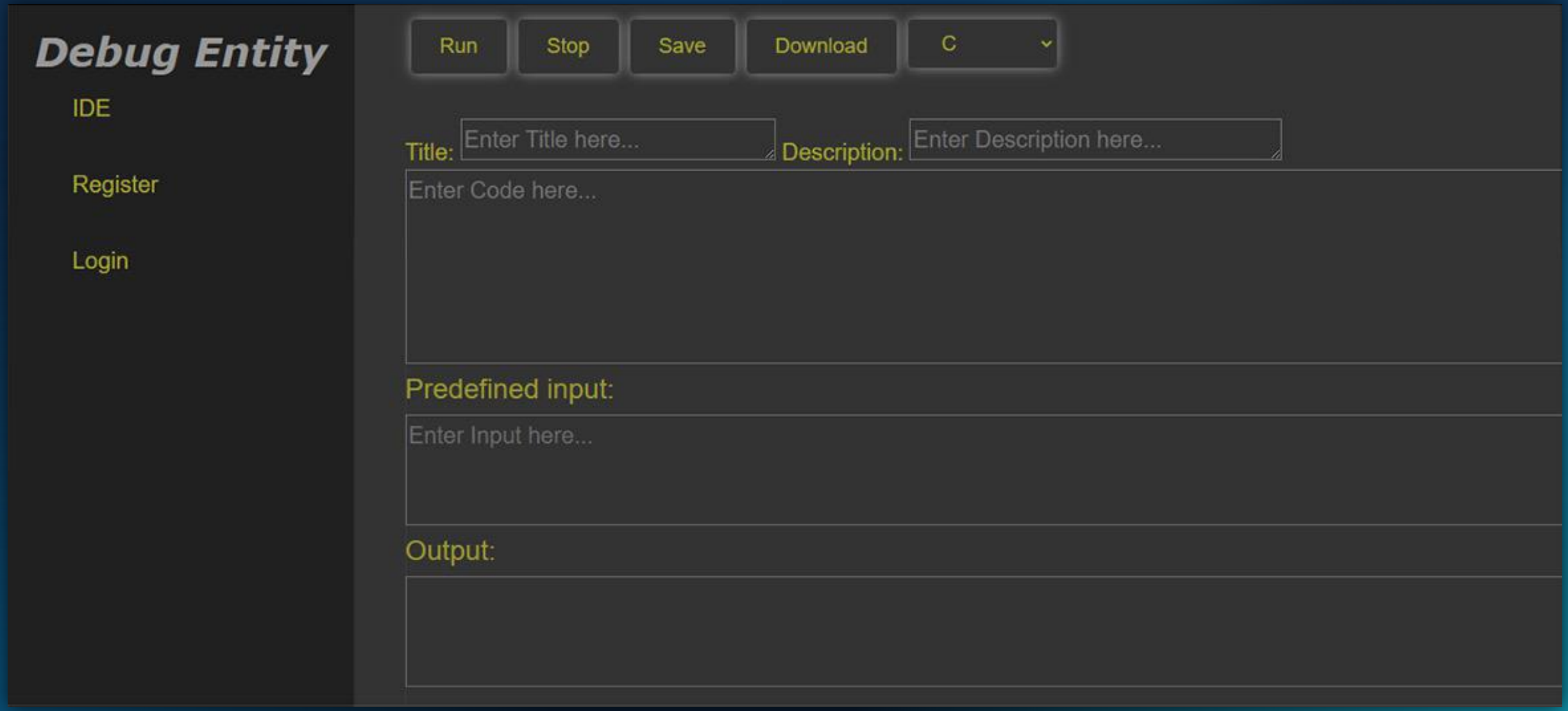
April 14, 2021 - April 29, 2021



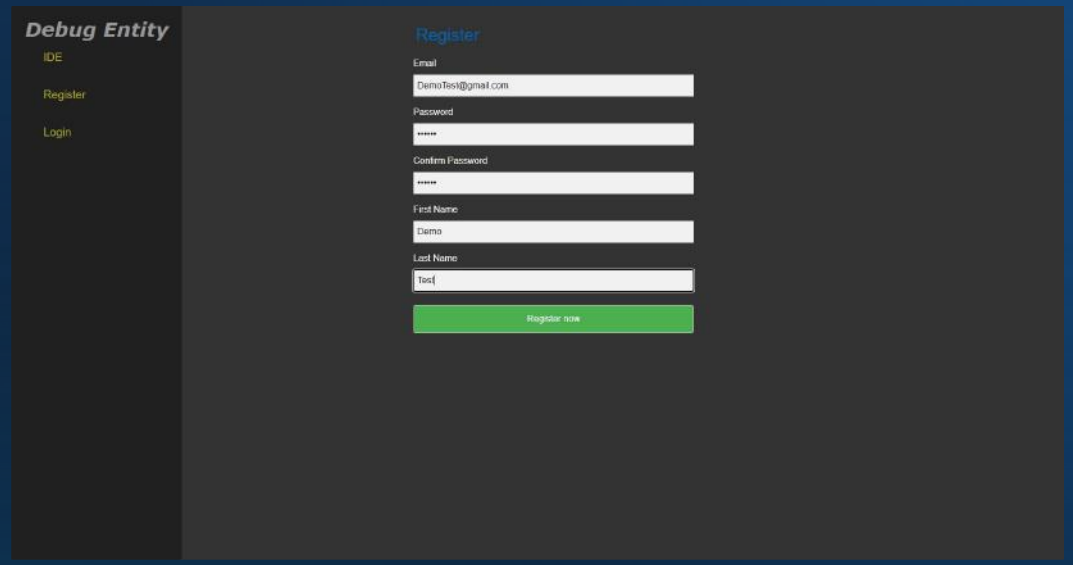
This chart is based on Story Points.
We completed 3 user stories ONCC-36, ONCC-51 and ONCC-37 in Sprint-7.
Committed Story Points=13
Completed Story Points=13
Completed Artifacts=100%
Velocity = 13

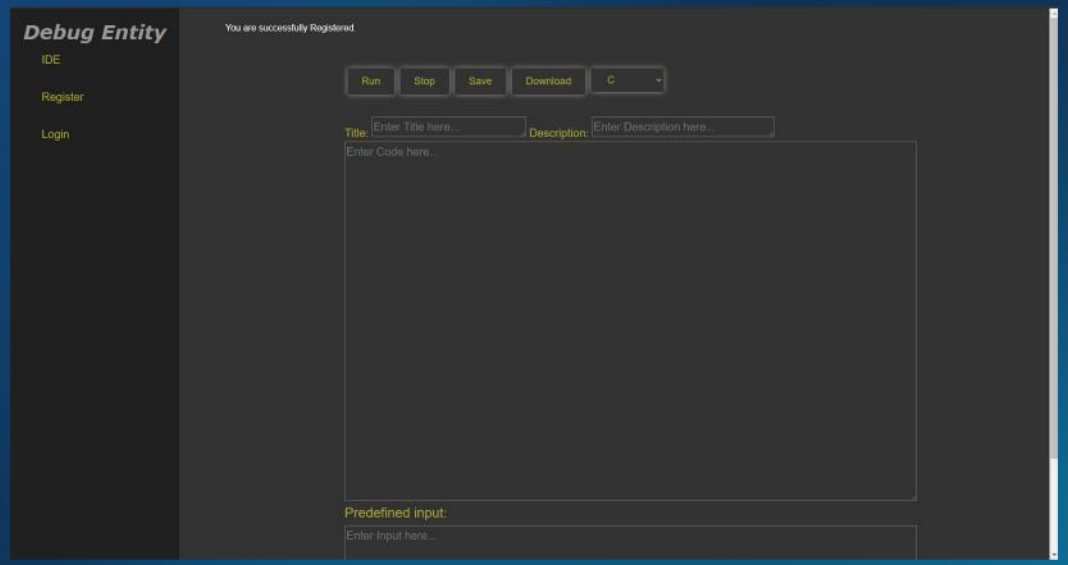
Project Deliverables

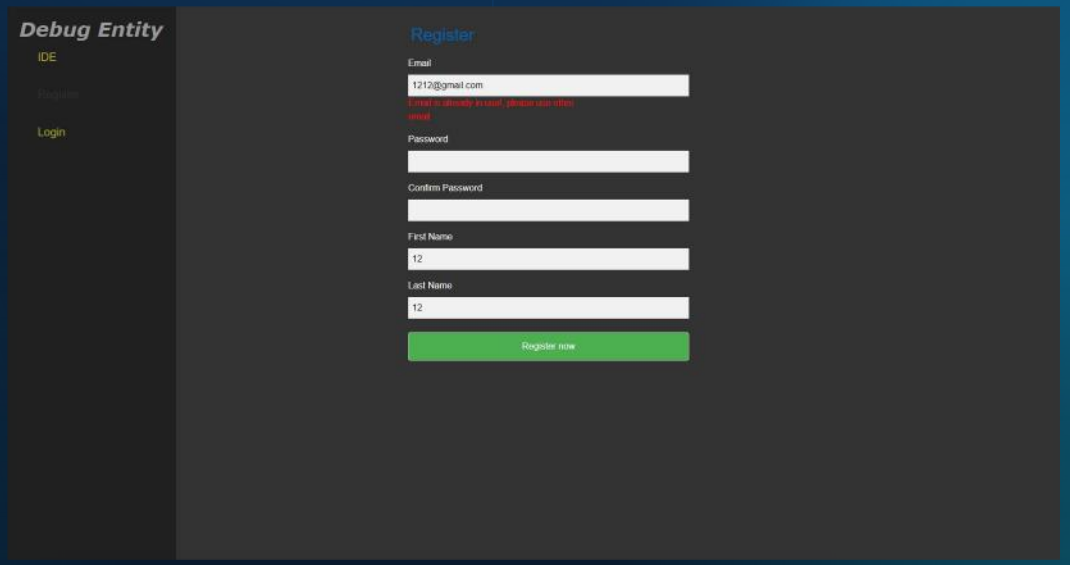
Homepage


Debug Entity
IDE
Register
Login
Run
Stop
Save
Download
C
Title:
Enter Title here...
Description:
Enter Description here...
Enter Code here...
Predefined input:
Enter Input here...
Output:

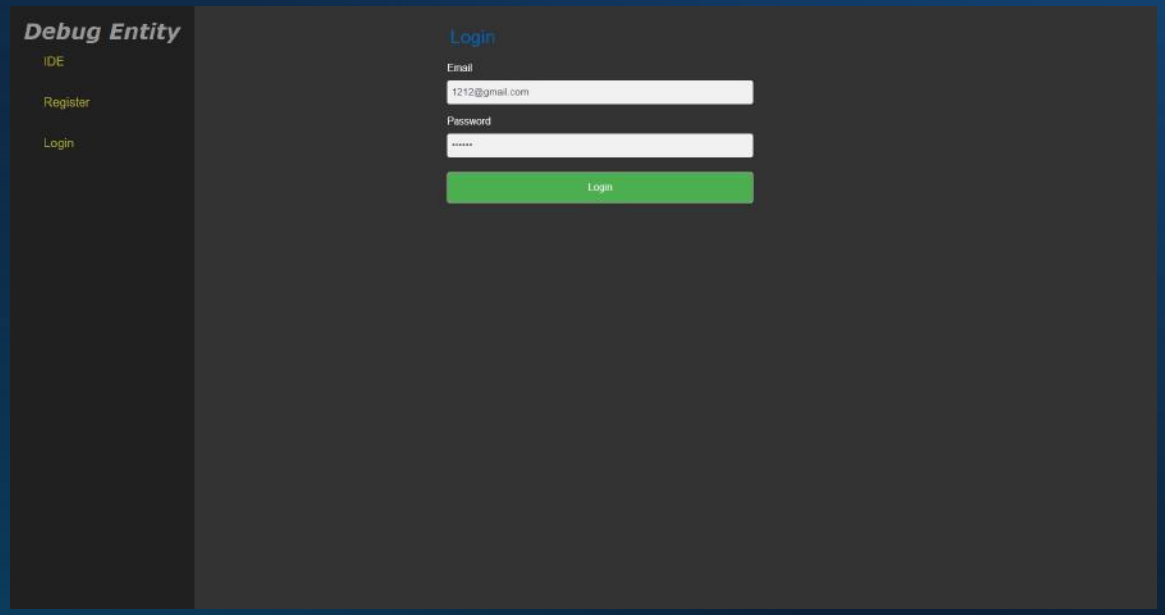
Registration

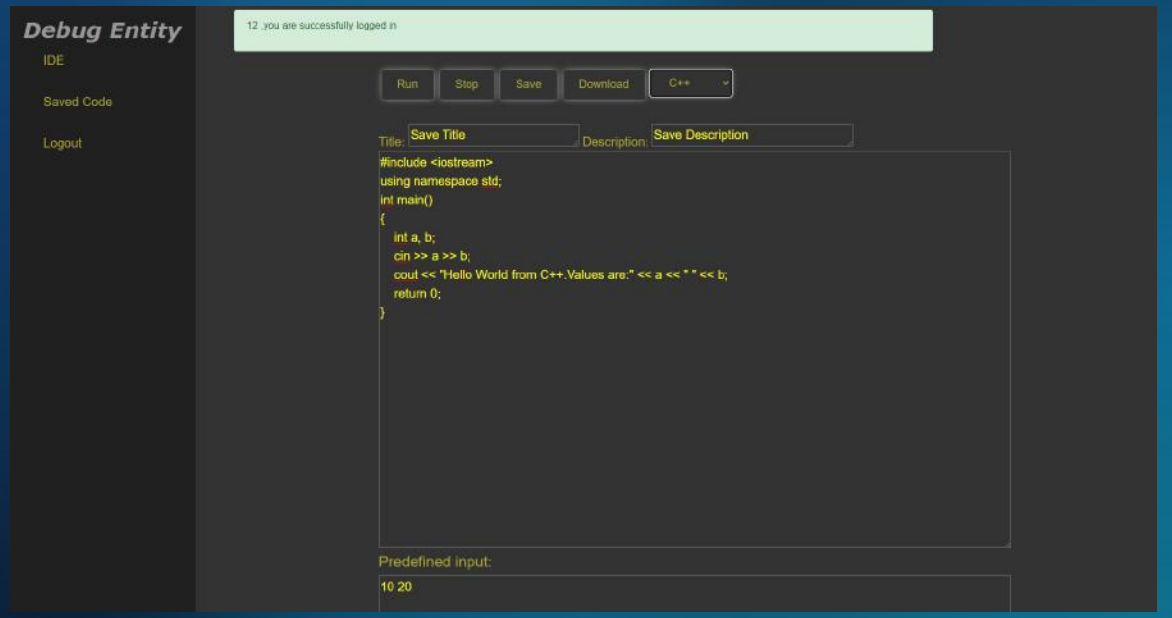




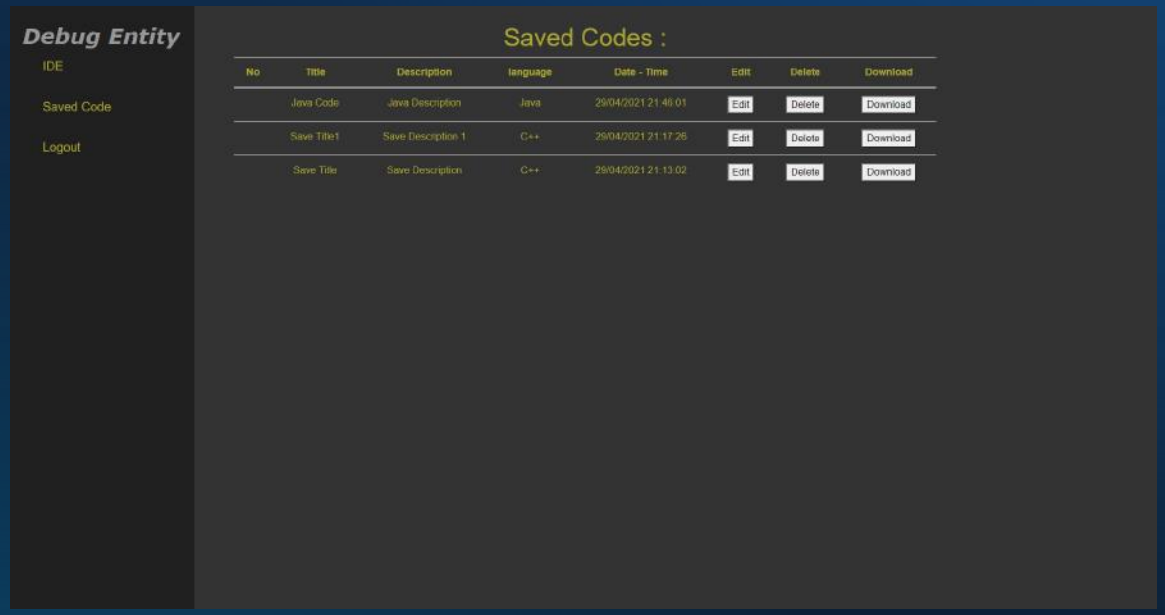


Login


Debug Entity
IDE
Register
Login
Login
Email
1212@gmail.com
Password
Login


Debug Entity
IDE
Saved Code
Logout
12 ,you are successfully logged in
Run
Stop
Save
Download
C++
Title:
Save Title
Description:
Save Description
#include <iostream>
using namespace std;
int main()
{
int a, b;
cin >> a >> b;
cout << "Hello World from C++.Values are:" << a << " " << b;
return 0;
}
Predefined input:
10 20

Save


Debug Entity
IDE
Saved Code
Logout
Saved Codes :
No
Title
Description
language
Date - Time
Edit
Delete
Download
Java Code
Java Description
Java
29/04/2021 21:46:01
Edit
Delete
Download
Save Title1
Save Description 1
C++
29/04/2021 21:17:26
Edit
Delete
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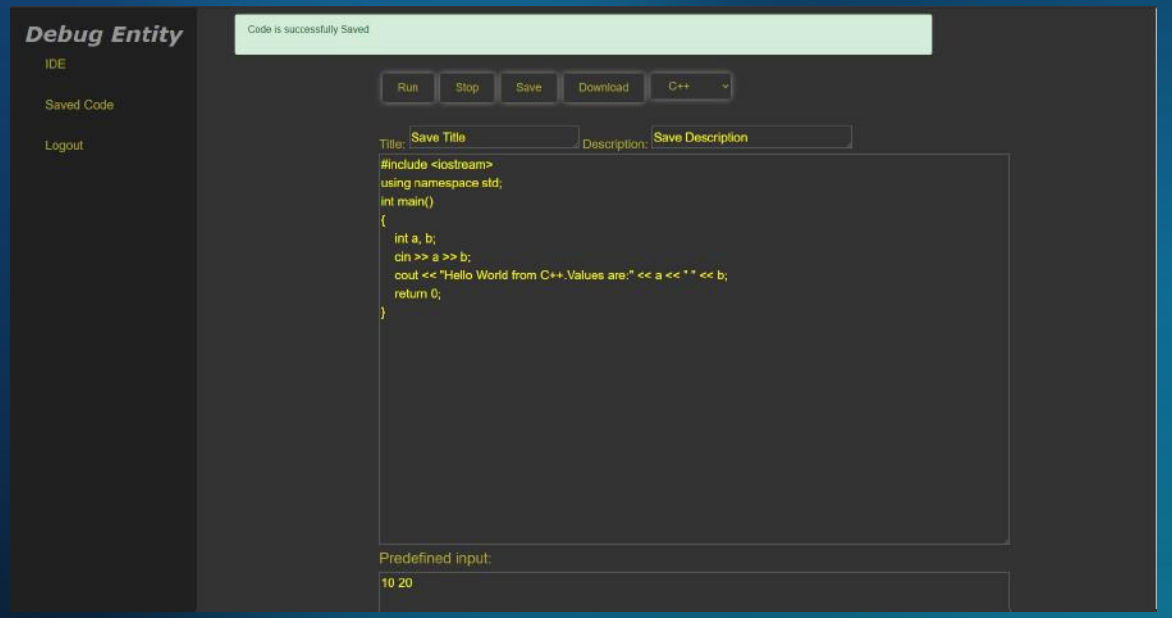
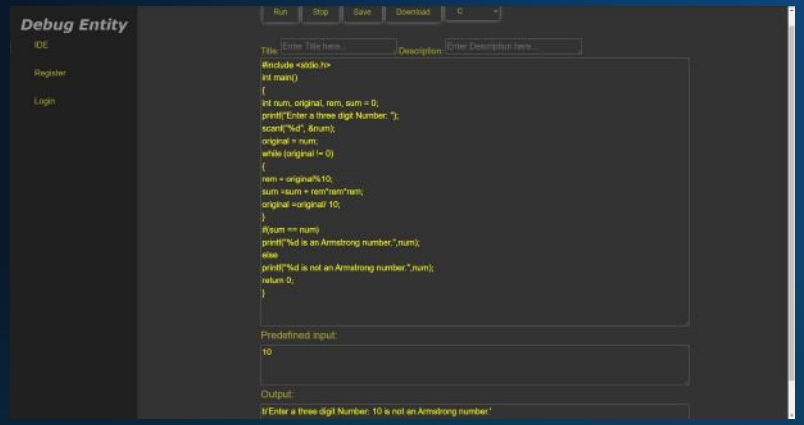
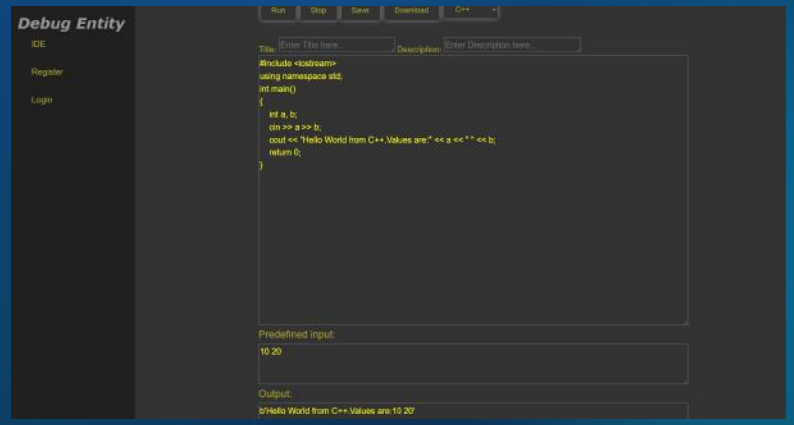
C++
29/04/2021 21:13:02
Edit
Delete
Download


Debug Entity
IDE
Saved Code
Logout
Code is successfully Saved
Run
Stop
Save
Download
C++
Title:
Save Title
Description:
Save Description
#include <iostream>
using namespace std;
int main()
{
int a, b;
cin >> a >> b;
cout << "Hello World from C++.Values are:" << a << " " << b;
return 0;
}
Predefined input:
10 20

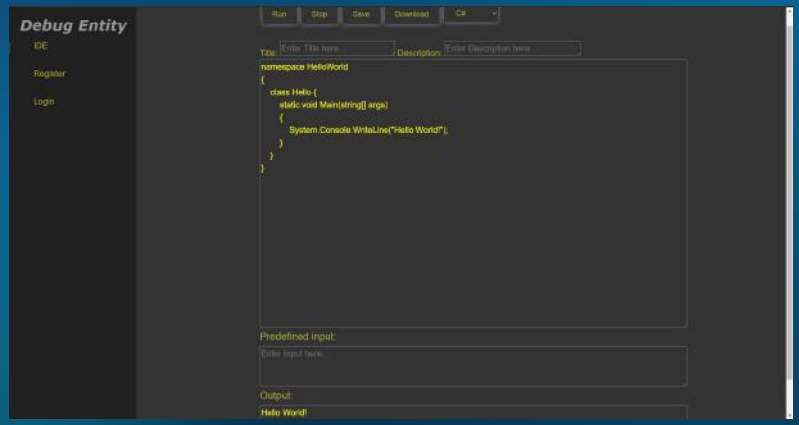
Compiler



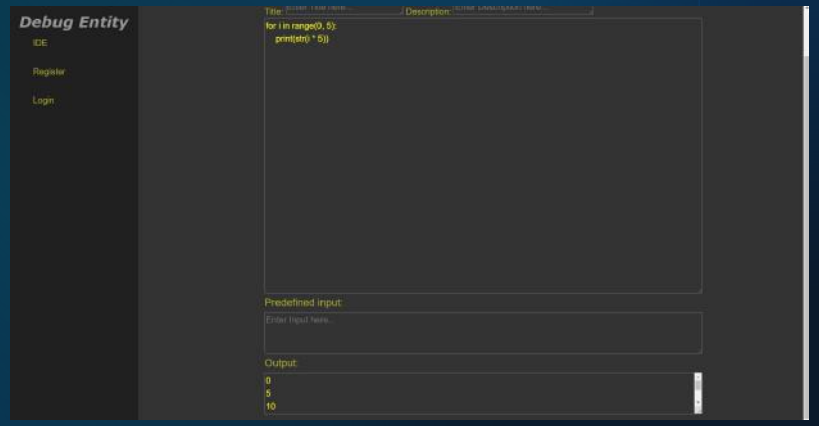
C Compiler



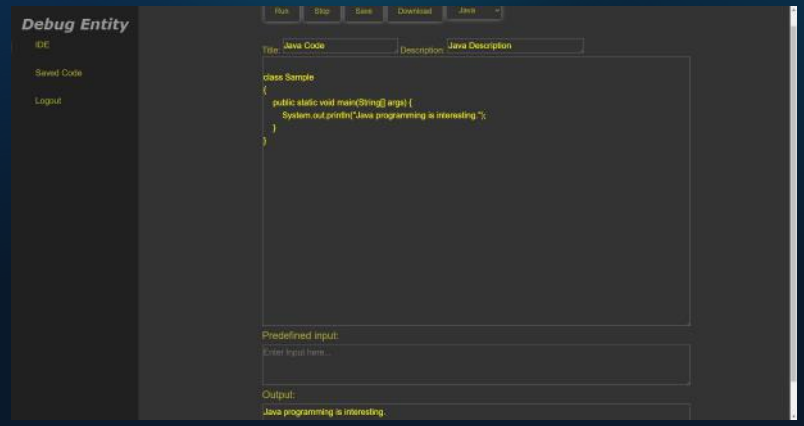
C++ Compiler



C# Compiler



Python Compiler

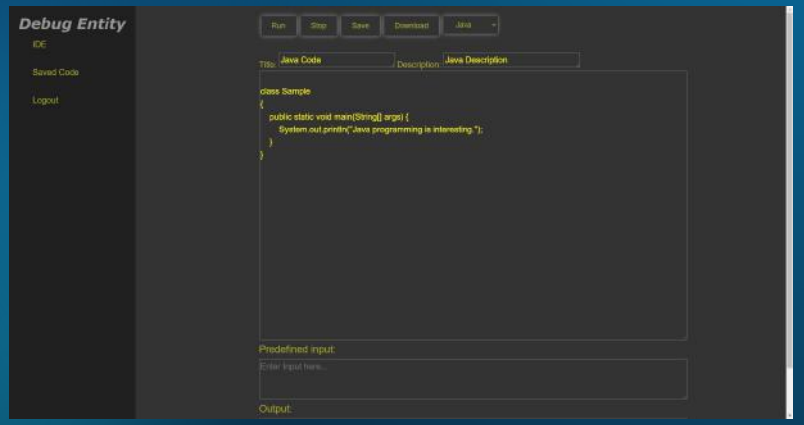


Java Compiler

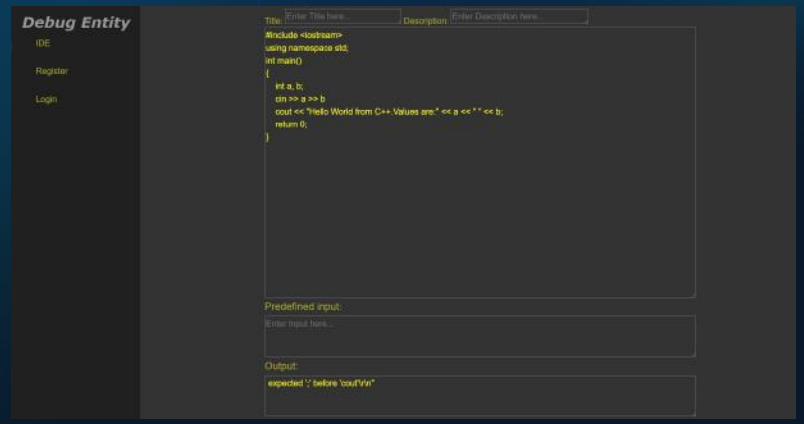
Download/Delete/Edit/Error

Download

Delete



Edit



Error

Retrospectives

What went well	• Dived deeper on each task to prioritize it. • Successfully reduced the queue of backlogs by 74 percent. • Invested time paid off while planning and development as tasks in backlogs got reduced.
What needs improvement for future	• Although we had good planning and development meeting, we still need everyone to provide more input during discussion and planning. More inputs/suggestion will improve the quality of the task/project. • Keep Jira task updated with progress and things to do.
Next Steps For future	• Follow the Scrum principles more thoroughly. • Start to discuss the progress on each task and re-prioritize or re-allocate the resources during the stand-up on daily basis.

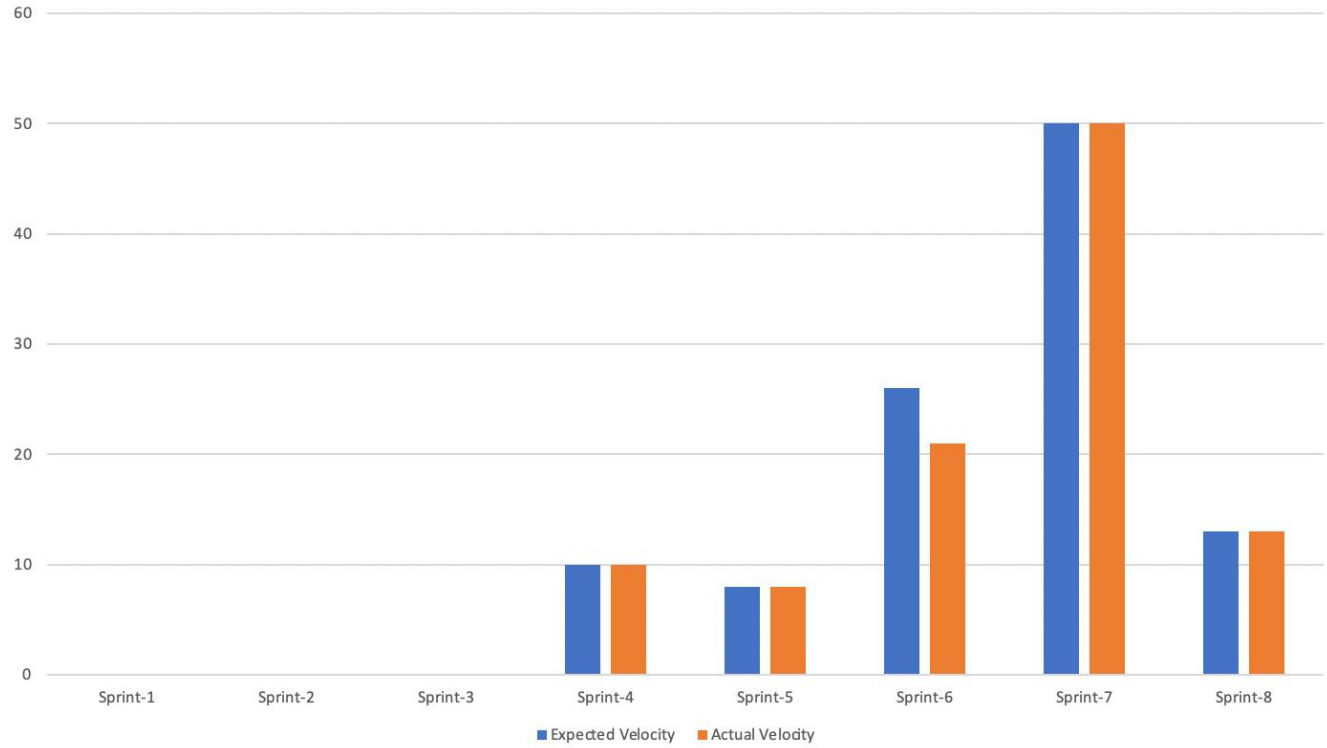
Conclusion

Future Scope

- We can add a discussion area where registered users can help each other with their difficulties in the code.
- We can update our web application to make it more user friendly.
- We can expand our application for compiling various other programming languages.
- Implement strict privacy for user's data safety.

Velocity Report

This velocity report is based on story points.



GitHub Link

GitHub wiki

https://github.com/sg99356n/OnlineCC/wiki

Code Repository

https://github.com/sg99356n/OnlineCC

Demo