ONLINE COMPILER USING CLOUD COMPUTING

Computer Science Project I – CS691

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INTRODUCTION

In today's fast and competitive world everything is available on internet, and on web. So, we developed an online compiler using cloud computing. The main objective of this project is to develop a centralized compiler that helps to reduce problems like portability storage, cost, and space.

It is the most convenient tool to compile code, remove errors and debug code. Moreover, we can run the web-based application remotely from any network connection that is independent of platform. The challenge of installing a compiler on each machine is also avoided and therefore, these all benefits make this application suitable of cloud based online compiler make it suitable for performing online exams.

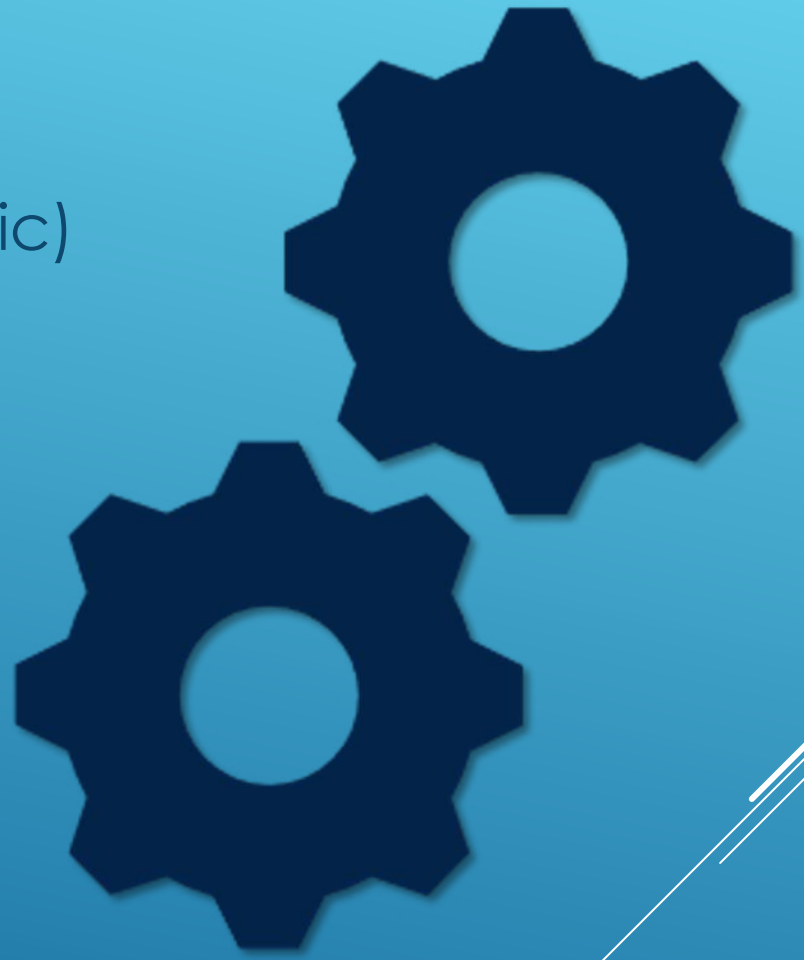
PERSONA

I am John pursuing Master's from a well-known university. Being a Graduate student in Computer Science, writing and compiling codes in different languages is part of our daily life. Sometimes we find it difficult to get the subscription for different compiler because it's costly and it will become more costly if we are taking subscription for different compiler for each coding languages.

Therefore, we yearn for a single platform where we can compile at least more frequently used languages (Java, Python, C#, C, C++) at the same platform by making the coder's life easier.

TECHNOLOGIES USED

1. Google Cloud Platform
2. Python(Flask) (Middleware Business Logic)
3. HTML/CSS (Front-end)
4. MongoDB (Database)



Sprint 2 Recap

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

SPRINTS

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

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:

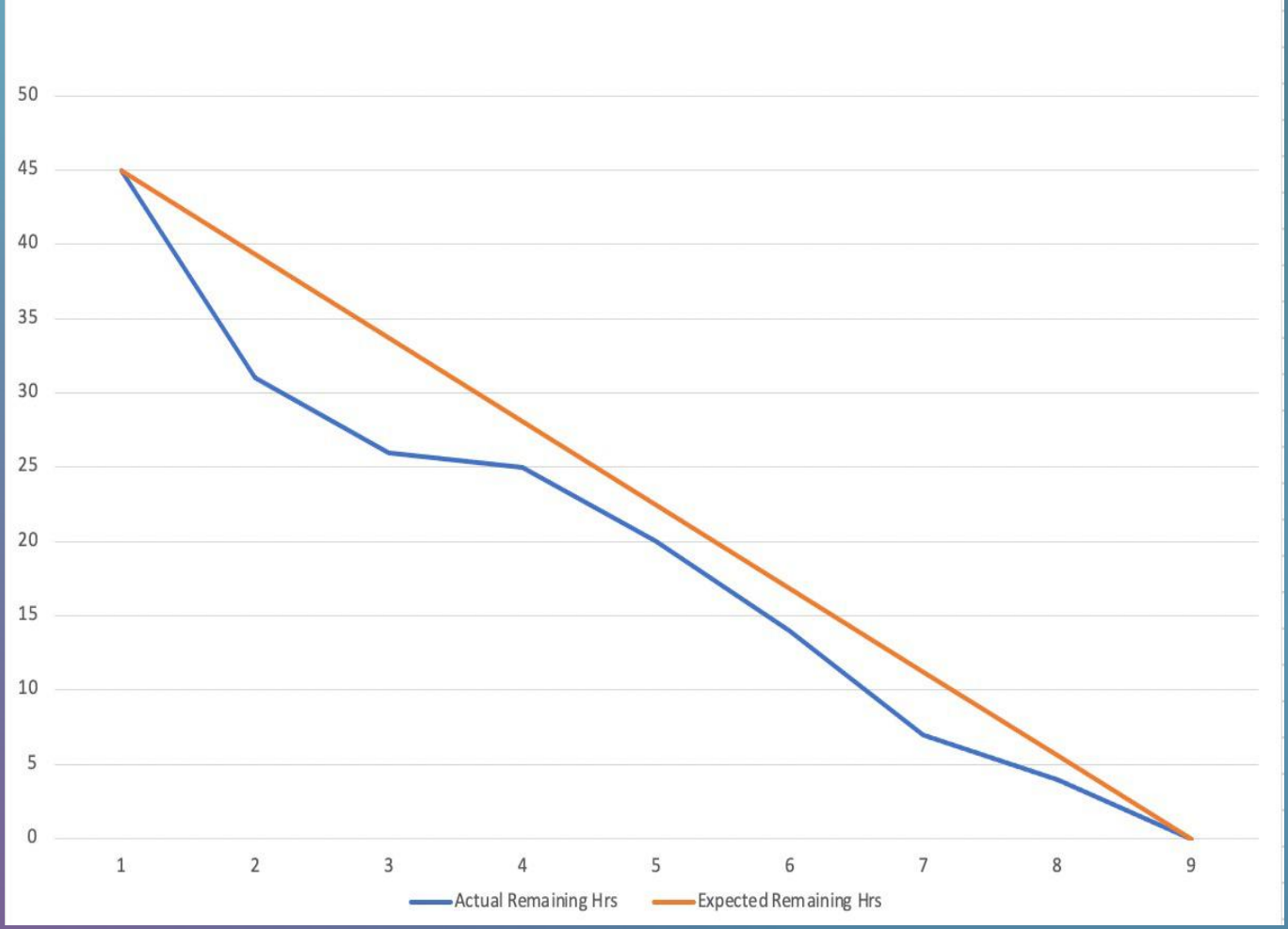
- Design login and Registration Page
- Create User Table in MongoDB
- Connect web application with MongoDB

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

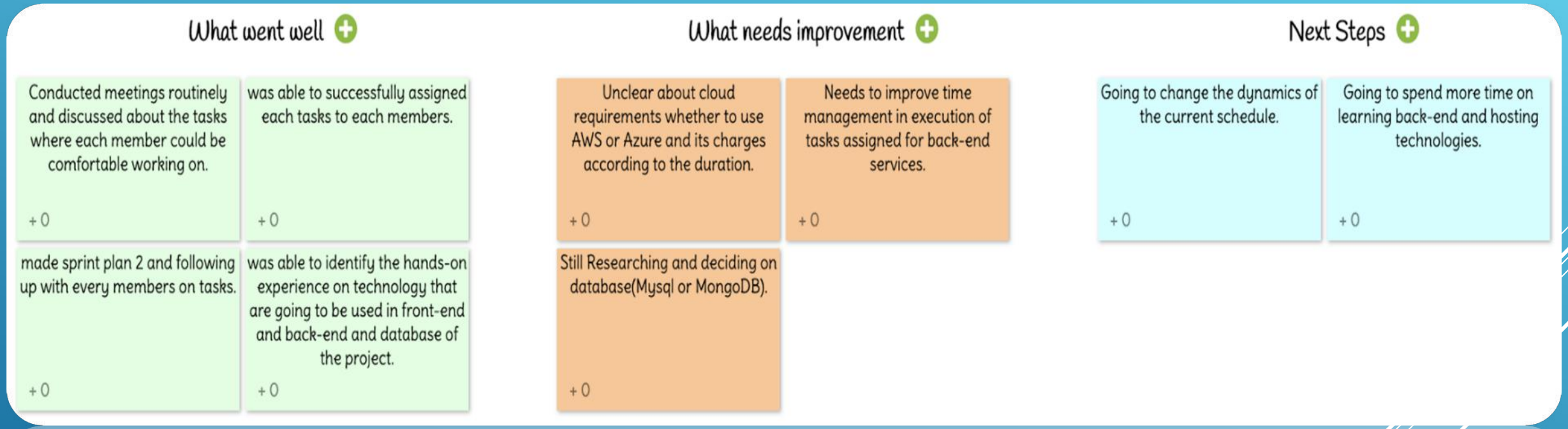


- We used Excel sheet to express our burndown charts.
- This chart is based on Total Hours
- Expected Hours=45
- Completed Hours=45
- Completed Artifacts (hours) = 100%

Product Backlog

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

RETROSPECTIVE SPRINT 3



MVP

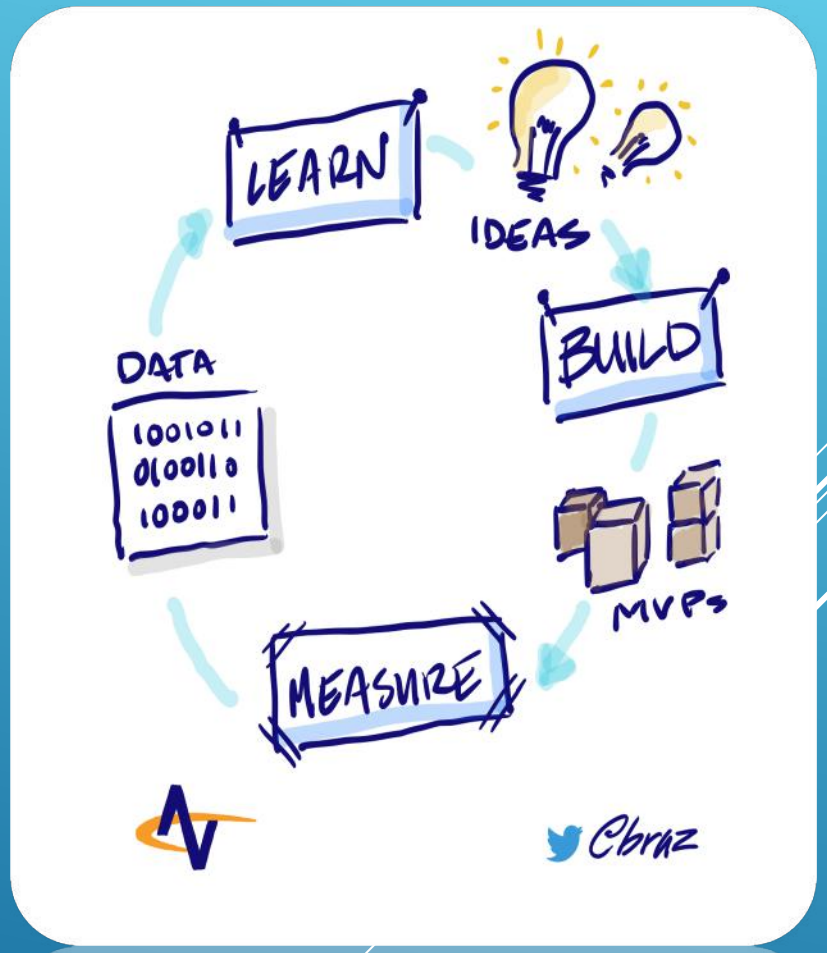
Which Problem does it solve!

It can be hectic for students or working professionals to download IDEs and virtual machines for individual languages to run their programs in very short amount of time.

Minimum :- An application which can just compile the code.

Viable : An online platform for everyone where anyone can run the code in any of the given programming languages with features like save the source code.

Minimum + Viable :- We are presenting a product which is based on cloud computing with features like login, registration with authentication and compilation of source code.



GITHUB LINK

- https://github.com/sg99356n/OnlineCC/wiki/Online-Compiler-Using-Cloud-Computing

THANK YOU