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.

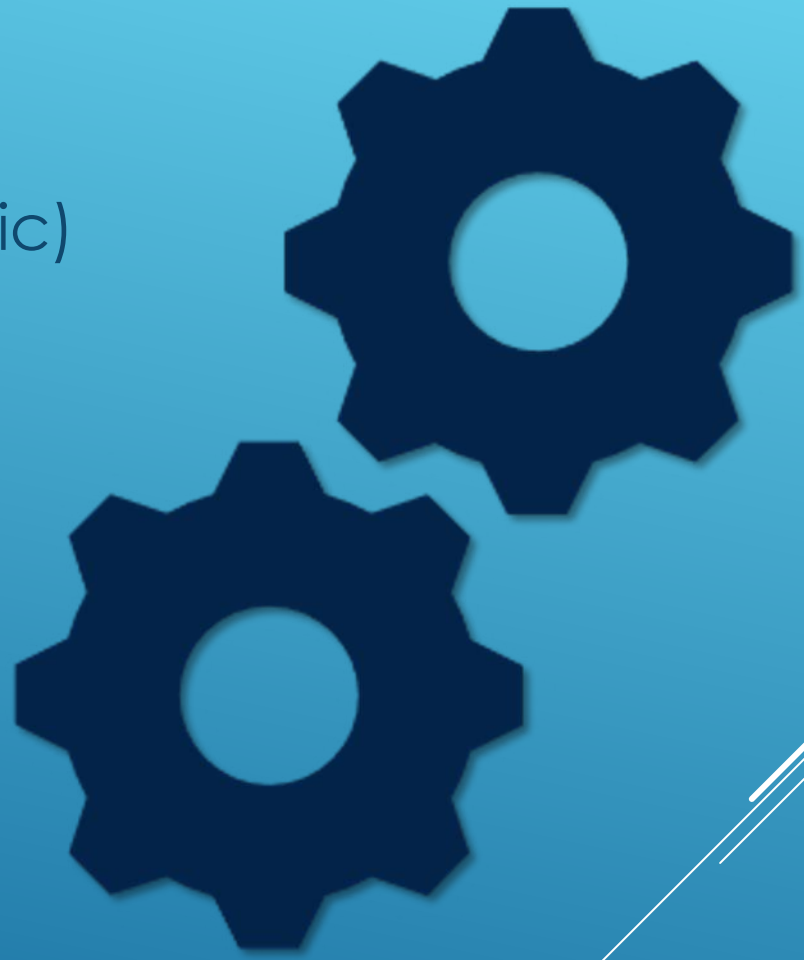
PERSONA

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)



USER STORIES

ID	Features	As a	I want to	So that
1	User Registration	User	Enter login details that is the first and last name, e-mail and password.	I can create my profile and register myself on the cloud computing service.
2	Login	User	Enter registered e-mail and password.	I can authenticate my account and after that I can retrieve previously stored source code.
3	Compilers for C, C++, C#, Java and Python	User	Select any of the compilers from the drop-down menu.	I can compile the code in any of the programming languages.

ACCEPTANCE CRITERIA

ID	Features	As a	Acceptance Criteria
1	User Registration	User	1. Display Website. 2. Display Register or sign in option. 3. A user cannot register without completing all mandatory fields. 4. Information from the form is stored in the registration database. 5. Existing user cannot register again. 6. Commencement and maintaining the session while logged in. 7. Triggers session termination.
2	Login	User	1. Login with username/e-mail. 2. Enter password. 3. Forgot username/password.
3	Compilers for C, C++, C#, Java and Python	User	1. Display a drop-down menu of the programming languages. 2. Display two text areas for entering the source code and for viewing output/error of the code.

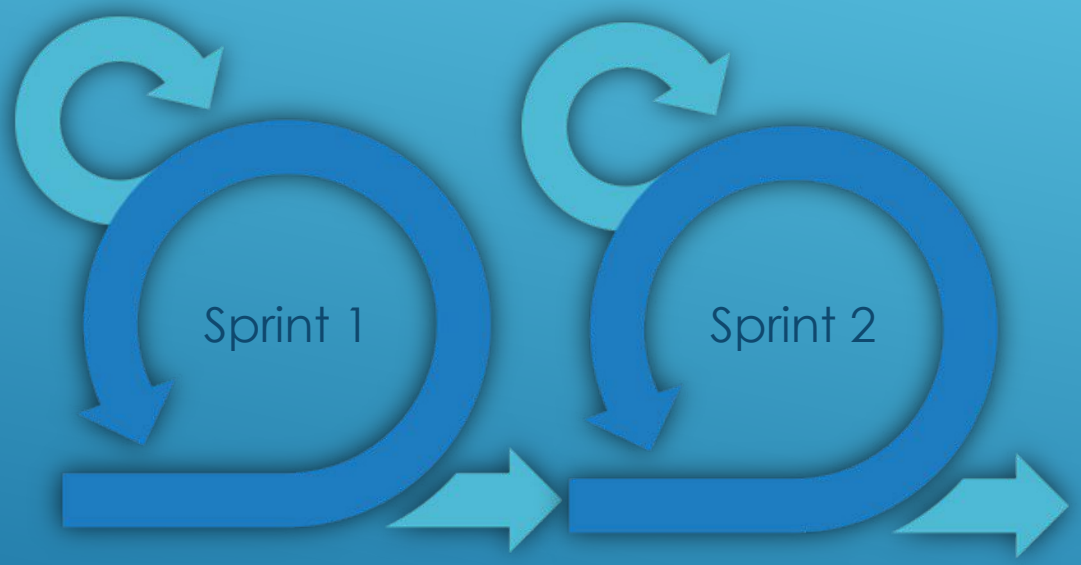
TEST CASES

Test Cases for	Test Case ID	Test Scenario	Test Data	Expected Results	Actual Results	Pass/Fail
Registration	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
	2	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
Login	11	Check Login page with Password	testpassword	NO Validation Errors	NO Validation Errors	PASS
	12	Check Login page without Password	*Blank*	Validation Errors	Validation Errors	PASS
	13	Registration with pre-registered e-mail ID	sanath2097@gmail.com	User Already Exsists Error	User Already Exsists Error	PASS

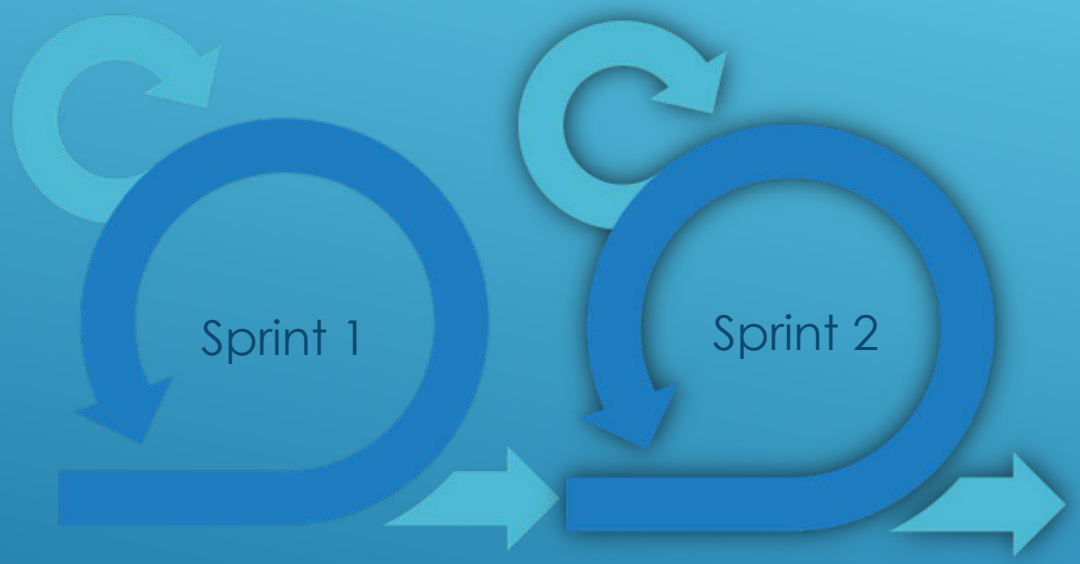
PRODUCT BACKLOG

ID	Features	As a	I want to	So that	Priority
1	User Registration	User	Enter login details that is the first and last name, e-mail and password.	I can create my profile and register myself on the cloud computing service.	High
2	Login	User	Enter registered e-mail and password.	I can authenticate my account and after that I can retrieve previously stored source code.	High
3	Compilers for C, C++, C#, Java and Python	User	Select any of the compilers from the drop-down menu.	I can compile the code in any of the programming languages.	Moderate

SPRINTS



SPRINT 1

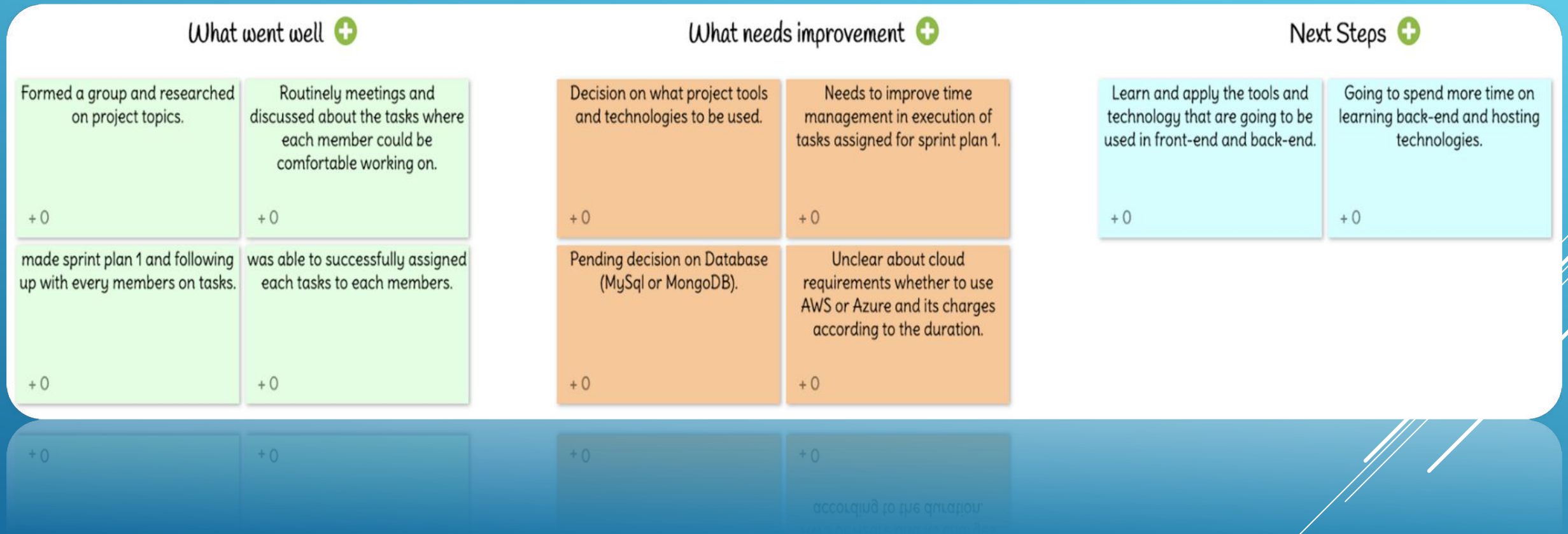


- Researched about the technologies that can be related to the project
- Decided on who will work on which module.

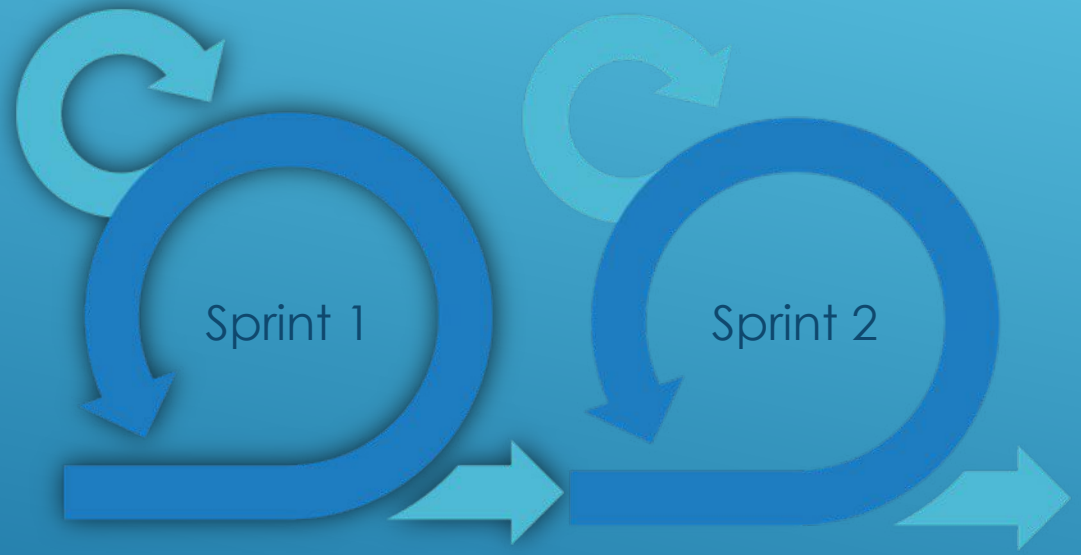
SPRINT BACKLOG

Sprint Task	Module	Priority	Issues Encountered	Start Date	End Date	Status
Sprint 1 : Task 1	Database	High	We cannot use structured database	09/04/2020	09/18/2020	Completed
Sprint 1 : Task 2	Cloud Service	High	Decision of selecting the cloud and storage service depending upon the cost and usage.	09/07/2020		In-Progress

RETROSPECTIVE SPRINT 1



SPRINT 2

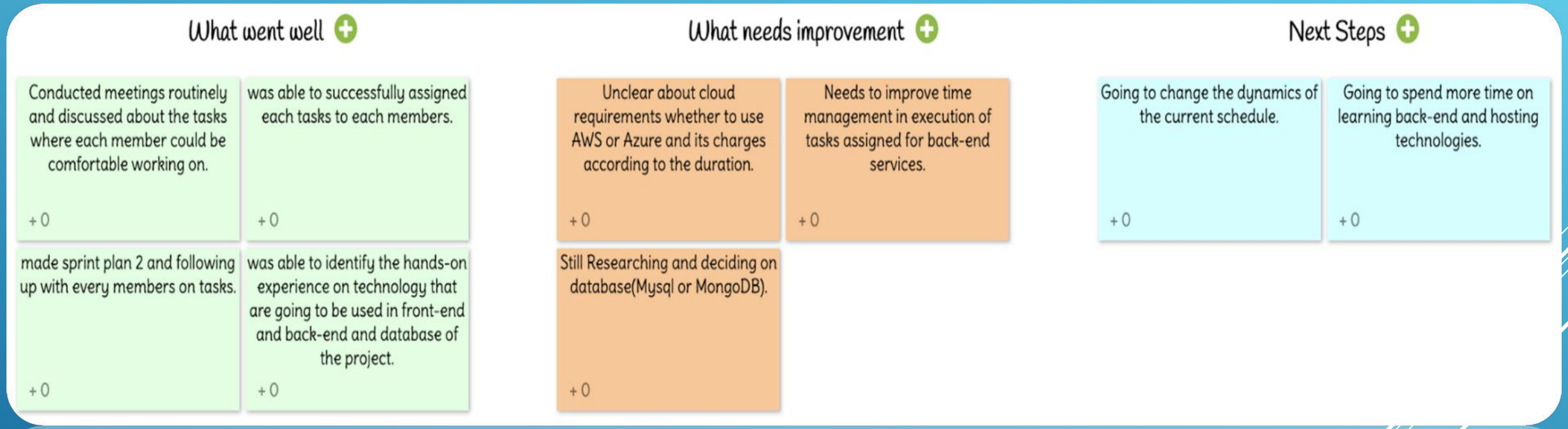


- Selection and learning about web application technology.
- Learning about compatibility of database.
- Started initial development of web application.

SPRINT BACKLOG

Sprint Task	Module	Priority	Issues Encountered	Start Date	End Date	Status
Sprint 2 : Task 1	Web Application	Medium	Selecting the layout of the front-end	09/23/2020	10/02/2020	Completed

RETROSPECTIVE SPRINT 2



MVP

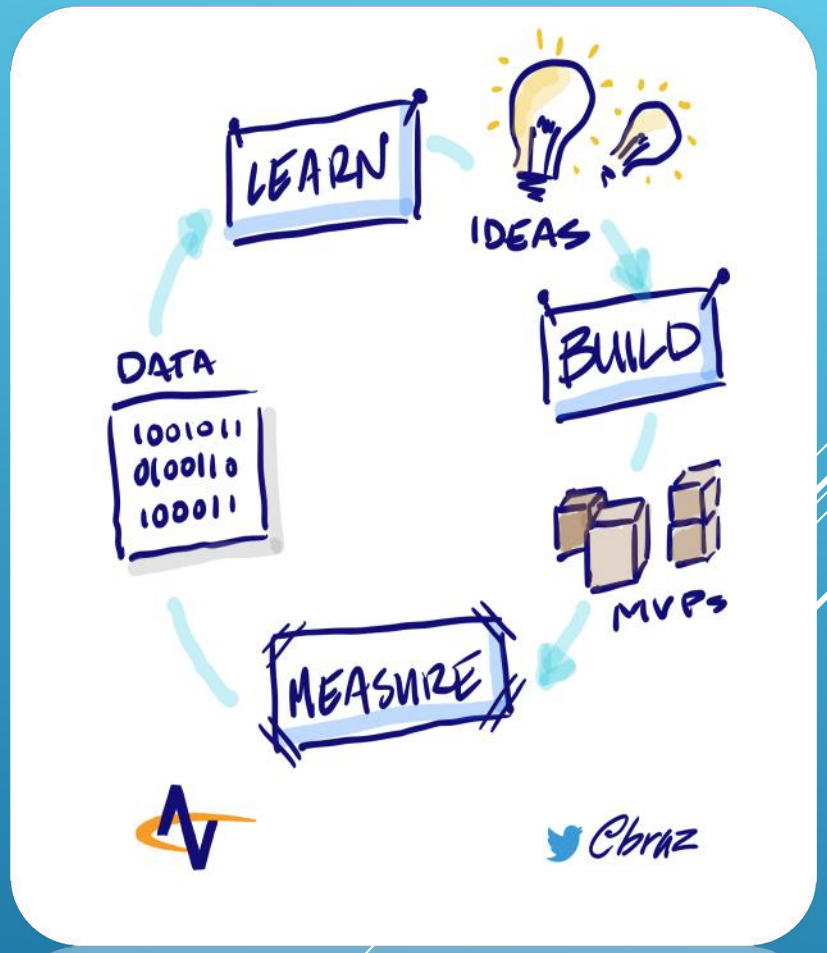
Which Problem does it solve!

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