Interactive Website for matching interest of Professors and Students

- Kolinben Sukhadia - 1159716
- Saket Deshmukh - 1121036
- Nahid Ibn Ashraf - 1173307
- Akanksha Sadvelkar - 1165015
- Sharmin Islam Mou - 1172991
- Md Rayhan Sobhan - 1174928

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Introduction

This website can help students for their further studies by matching them with professors from different universities and also countries sharing same interests.

It is an interactive website which help students to find the professor and university based on their research area interest, department and country.

End Users

University Professors

Local Students

International Students

University Research Managers

AGILE METHODOLOGY

What is Agile Methodology

➢ Agile method is a way to manage a project by breaking it into various phases.

➢ It includes collaboration with stakeholders. It focus on writing more code than documentation. It delievers software frequently. It focus on communicate with customers and make changes in software what they want
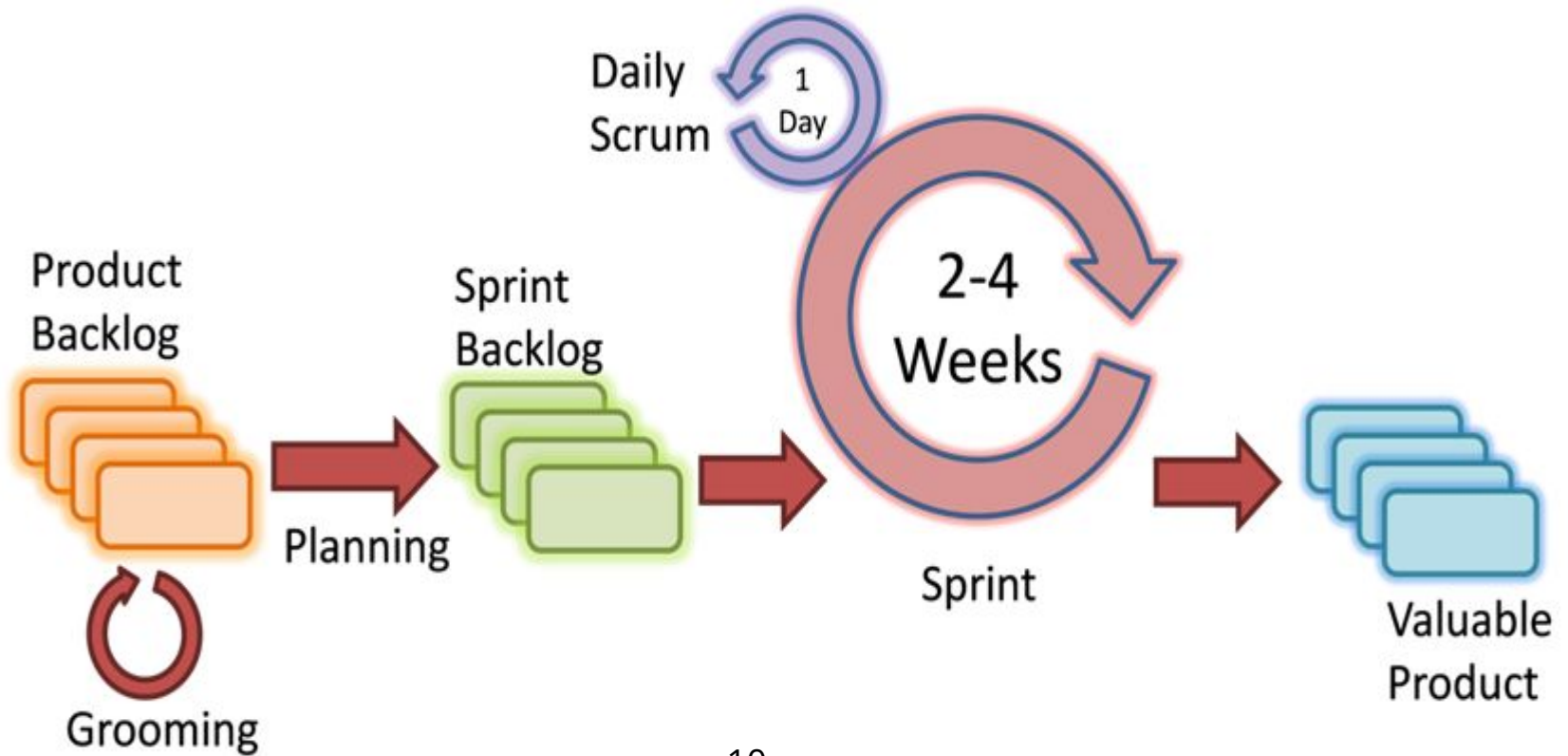
Roles and Responsibilities

- Saket Deshmukh - Data Model, Machine Learning, Business Analysis Scrum master
- Kolinben Sukhadia- Front end developer, Requirement gathering, product owner
- Akanksha Sadvelkar - Back-end developer
- Sharmin Islam Mou - Quality Analyst/Tester
- Md Rayhan Sobhan - Business Analyst

Agile Practices

In our project, We have three sprints, sprint 1, sprint 2 and sprint 3. Each sprint duration is 14 days. Standup meeting of 15 minutes with agile team members every three days.
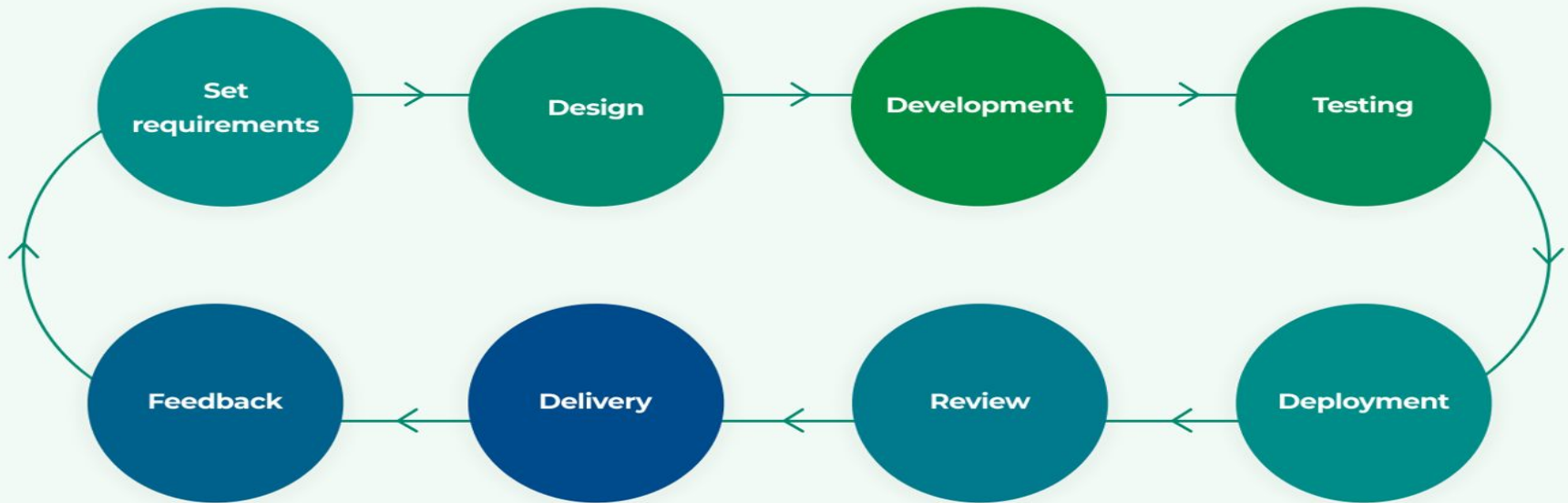
SCRUM METHOD
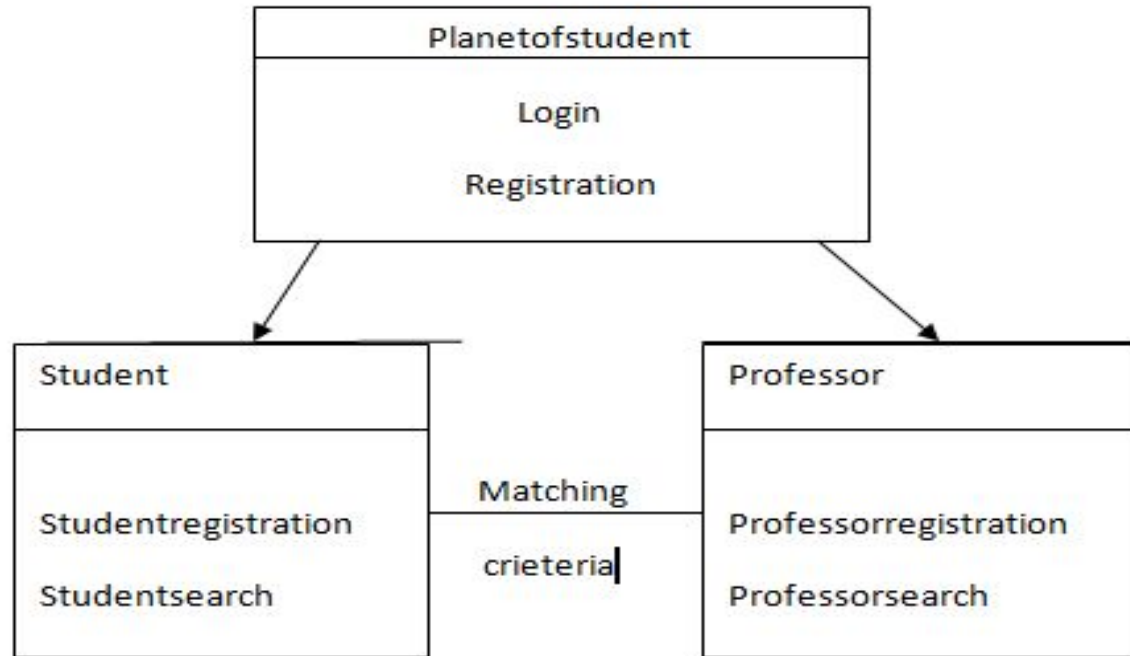
❖ Agile scrum method deliver software after each sprint.

❖ Scrum methodology has three steps such as iteration planning and iteration execution and software delivery for each iteration.
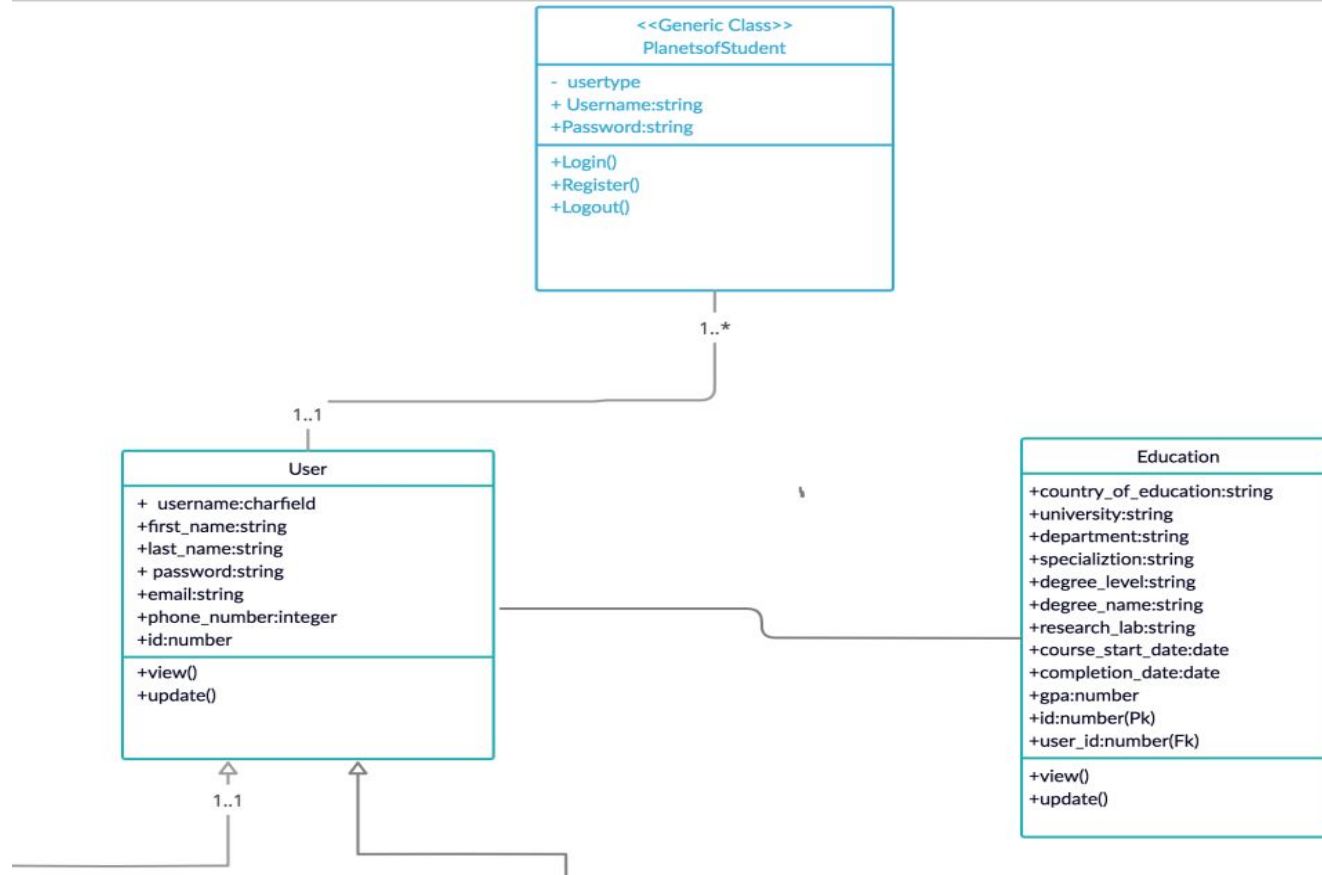
How Agile methodology Works

Agile software development process

Set requirements → Design → Development → Testing

Feedback ← Delivery ← Review ← Deployment

Software components

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Class Diagram

<<Generic Class>>
PlanetsofStudent

- usertype
+ Username:string
+Password:string

+Login()
+Register()
+Logout()

1..*

1..1

User

+ username:charfield
+first_name:string
+last_name:string
+ password:string
+email:string
+phone_number:integer
+id:number

+view()
+update()

1..1

Education

+country_of_education:string
+university:string
+department:string
+specializtion:string
+degree_level:string
+degree_name:string
+research_lab:string
+course_start_date:date
+completion_date:date
+gpa:number
+id:number(Pk)
+user_id:number(Fk)

+view()
+update()

```
+Login()
+Register()
+Logout()
```

1..*

1..1

User

+ username:charfield
+first_name:string
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+completion_date:date
+gpa:number
+id:number(Pk)
+user_id:number(Fk)

+view()
+update()

1..1

```
                    +last_name:string                          +specializtion:string
                    + password:string                          +degree_level:string
                    +email:string                              +degree_name:string
                    +phone_number:integer                      +research_lab:string
                    +id:number                                 +course_start_date:date
                                                               +completion_date:date
                    +view()                                    +gpa:number
                    +update()                                  +id:number(Pk)
                                                               +user_id:number(Fk)

                                                               +view()
                                                               +update()
```

```
                    ProfessorProfile                           studentProfile

+degree_offered:string                          +recent_research:string
+scholarship_provided:boolean                   +research_abstract:string
+minimum_qualification_required:string          +scholarship_needed:boolean
+latest_research_description:string             +id:number(Pk)
+minimum_gpa_required:number                    +user_id:number(Fk)
+accepting_international_students:boolean
+home_page_link:url,string
+preferred_country:string                       +view()
+user_id:number(Fk)                             +update()
+id:number(Pk)                                  +searchprofessor()


+view()
+update()
```

1..1

1..*

- There are classes namely PlanetofStudent, User, Education, StudentProfile and ProfessorProfile and Education.
- Methods for this class are Login(), Register() and Logout(). User class has variables namely first_name, last_name, password, email, phone_number and id. view() and update() are methods of User class.
- user_id. view(), update() and searchprofessor() are three methods in this class. + symbol before attribute name and method name indicates that it is publicly accessible. - symbol depicts that method or attribute is a private modifier.

Use Case Diagram
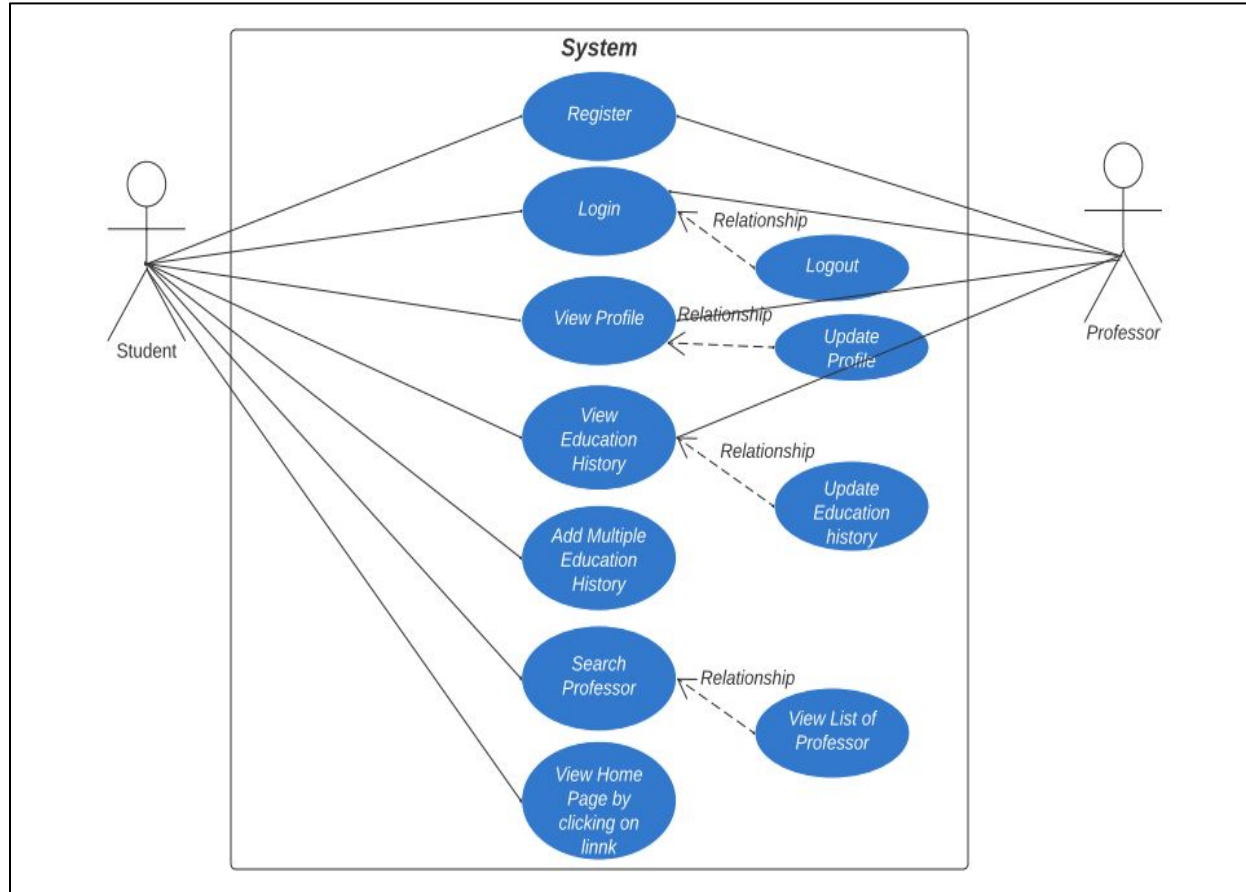
- Use case diagram is also UML diagram which depicts data model for software development.
- Register, login, view profile, view education history, view multiple education history, add multiple education history, search professor, view home page by clicking on link are the use cases of software development system.

Agile Methodology Tool : Excel Template

Sprint 1 : Product Backlog

Sprint start	15-02-2022
Sprint time in days	10
Velocity	80

Enter your current velocity from the last sprint in Storypoints here. The velocity describes the number of storypoints you completed dring your last sprint.

Sprint I	Backlog Item ID	StoryPoints	Story	Assigned to	Status	Completed on	Sprint day	Help column
1	1	4	Conceptualisation - Exploring research students and professor	Saket	Done	16-02-2022	1	y
1	2	3	Discuss problems with group members faced this problem as end use	Akanksha	Done	18-02-2022	3	y
	3	10	Information required by professor from students	Kolin	Done	20-02-2022	5	y
1	4	10	Information required by student from professors	Sharmin	Done	23-02-2022	8	y
1	5	10	Design login and onboarding UI	Rayhan	Done	25-02-2022	10	y
1	7	3	Testing login page	Kolin	Done	28-02-2022	13	y
sprints		40						

Always filter the current sprint according to the sprint ID.

Describe your backlog item, estimate the associated storypoints and assign it to a responsible person.

Enter the date when a story was completed here.

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Sprint 1 : Deliverable

1. Business concept , defined stakeholders like universities ,Students , research labs, professors.
2. Tested login page
3. Professor , students registration form based on required details.

Sprint 1 : Burndown Chart
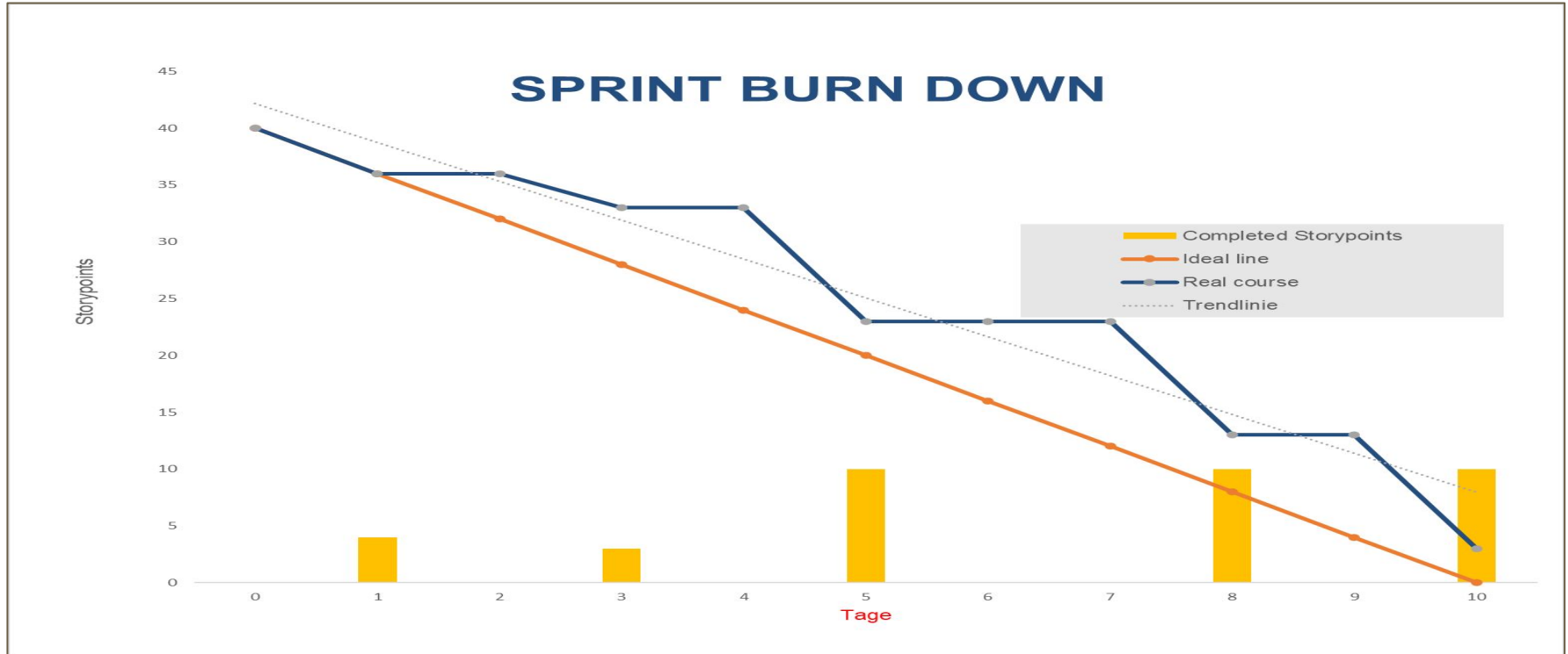
Sprint 2 : Product Backlog

3-01-2022
10
40

Enter your current velocity from the last sprint in Storypoints here. The velocity describes the number of storypoints you completed during your last sprint.

	Story	Assigned to	Status	Completed on	Sprint day	Help column
6	Design form for students What information students want to sha	Kolin	Done	02-03-2022	1	y
3	They should be able to enter their academic credential	Saket	Done	04-03-2022	3	y
5	create student registration page	Akanksha	Done	04-03-2022	4	y
3	they should be able to write about their research work at acade	Sharmin	Done	06-03-2022	6	y
8	Be available to find scholarships	Rayhan	Done	10-03-2022	10	y
8	be able to explore International education	Kolin	Done	10-03-2022	12	y
6	testing for accuracy	Sharmin	Done	12-03-2022	12	y
8	What information professors want to share	Rayhan	Done	14-03-2022	14	y
3	Be able to select if offering scholarship , be able to select level	Saket	Done	15-03-2022	15	y

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to the sprint ID.

Describe your backlog item, estimate the associated storypoints and assign it to a responsible person.

Enter the date when a story was completed here.

Sprint 2 : Deliverable

1. Registration form for student as shown during live demonstration.
2. Registration form for professors as shown during live demonstration.
3. Requirement gathering for Selection criteria for selection of best match.

Sprint 2 : Burndown Chart
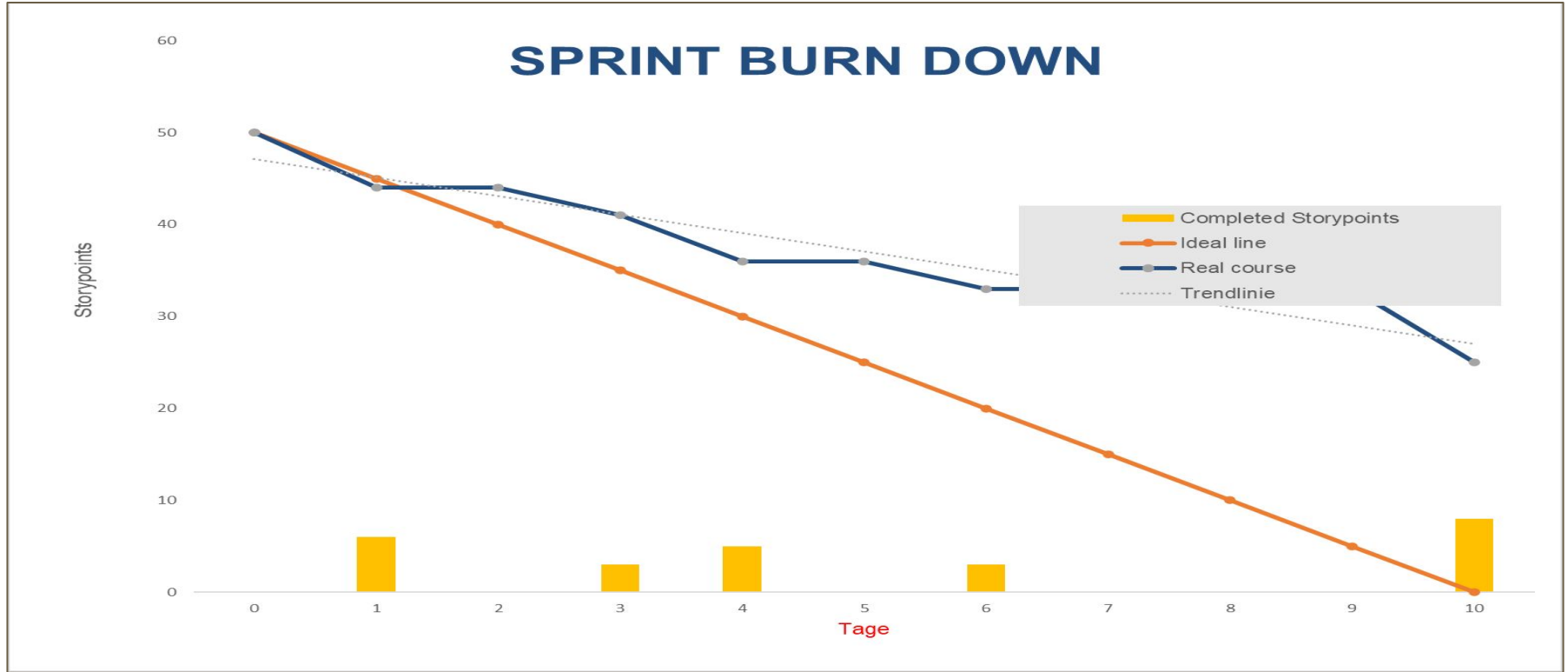
Sprint 3 : Product Backlog

Sprint start	15-03-2022	
Sprint time in days	10	
Velocity	60	

Enter your current velocity from the last sprint in Storypoints here. The velocity describes the number of storypoints you completed during your last sprint.

Sprint ID	Backlog Item ID	StoryPoints	Story	Assigned to	Status	Completed on	Sprint day	Help column
3	1	4	able to enter their university , country and research lab , accepting internat	Sharmin	Done	16-03-2022	1	y
3	2	8	test whether all fields are working properly or not professor reg	Saket	Done	18-03-2022	3	y
3	3	3	students and will be able to search based on following information	Rayhan	Done	20-03-2022	5	y
3	4	8	student will be able to search based on Level of study , start date , country	Kolin	Done	21-03-2022	6	y
3	5	13	student will be able to search based on scholarship offered , domestic or ir	Akanksha	Done	24-03-2022	9	y
3	6	5	student should be able to search professor having similar intere	Sharmin	Done	25-03-2022	10	y
3	7	8	professor should be able to look for student with having similar i	kolin	Done	26-03-2022	11	y
3	8	13	test accuracy for professor registration page	Akanksha	Done	27-03-2022	12	y
Storypoints		62						

Always filter the current sprint according to the sprint ID.

Describe your backlog item, estimate the associated storypoints and assign it to a responsible person.

Enter the date when a story was completed here.

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Sprint 3 : Burndown Chart

USER INTERFACE

http://ec2-52-204-164-193.compute-1.amazonaws.com/
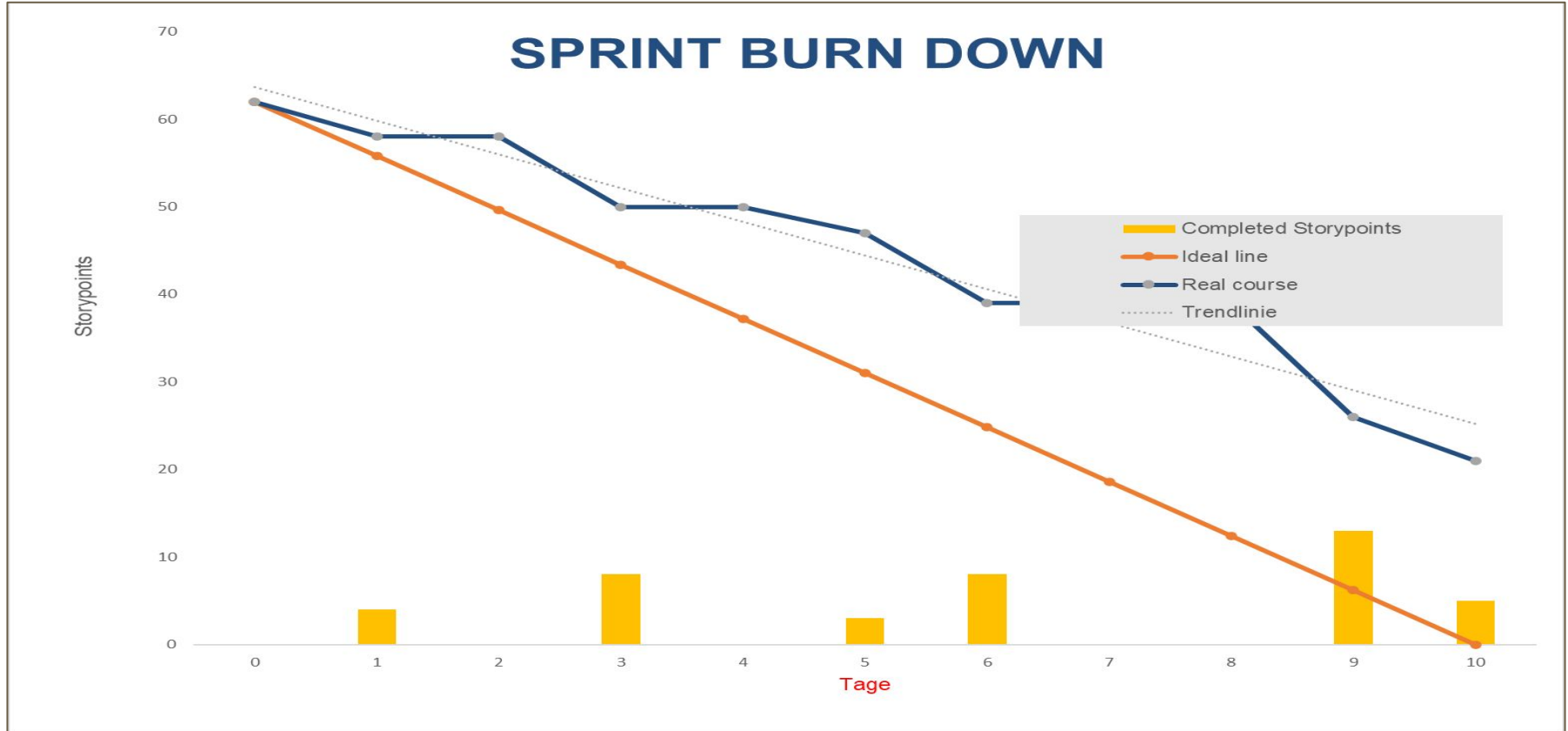
Advantages

- Daily Standup meeting is there so it is good for team.
- There is continuous testing and deployment so team do not need to wait for the end.
- Developers and testers works as team so there is good collaboration between team members.
- Everyone has an opportunity to share their ideas, challenges they are facing and contribute productively.

Challenges while developing website

- Facing difficulty while developing interactive website.
- Facing problems in learning new technology in short time. In our project, we are facing problems in learning Django framework.
- Implementing matching algorithm to match professors according to student's research interest using natural language processing(NLP) method in terms of integrating with the software.
- Collecting research based master and PhD student data as well as professor data.
- Setting up common virtual environment for development is difficult.

Challenges while applying agile methodology

- Adapting agile methodology.
- Scheduling meeting is challenging part.
- Initially, it is difficult to estimate story points for task.

Lessons Learned

- We decided to discuss lessons learned at the end of each sprint.
- Lessons Learned after sprint 1:
- Setting up common virtual environment for development is worth efforts.
- We should write down important points during discussion.

- Lessons Learned after sprint 2:
- Website should be concise and unnecessary data should be avoided.
- Customer convenience should be main focus, not data gathering.

Lessons Learned

❏   Lessons Learned after sprint 3:

❖   We should assign more time and more story points in adapting new technology modules and tools such as Natural Language Toolkit(NLTK).

❖   We should assign more time to test new technology modules and new technology should be justified for end users in terms of effectiveness.

Software Tools Used

Programming Language : Python

Communication : Zoom for sprint meetings, Whatsapp for daily communications

Project Management Tool : Customized Agile development Excel Template

Modeling Tools : LucidChart

Future work

1. As we gather more data we can improve the matching criteria and improve models.
2. We can increase databases of universities, department.
3. Include search pages for students and professors.

Thank You

Any Questions?