

ATTENDANCE AUTOMATION SYSTEM

CS - 692 Computer Science II

- Guided by, Professor Henry Wong

Team Member Roles



Ashish Pulluri : Full Stack Developer/Architect

- Developed various pages of the application
- Integrated machine learning algorithm to application's functionality for face recognition
- Developed the functionality for sending automatic emails based on student image recognition
- Optimized application code to improve modularity



Preetham Bonthula : Backend Developer

- Designed backend system architecture
- Generated SQL scripts for various database tables
- Authored technical paper and organized Wiki Page



Hemanth Uppuluri : Frontend Developer/Product Owner

- Developed several dynamic web pages for the application
- Developed and designed various page layouts
- Documented test cases and product backlog
- Worked on transforming to a user-friendly application



Sashwat Madaan : Scrum Master/ Technical Advisor

- Reviewed code and assisted with debugging the application
- Kept team on track by organizing triweekly scrum meetings and closely monitoring the progress.
- Maintains GitHub by constantly updating the repository



Shiva Shankar : Backend Developer / Testing Assist

- Developed logic for login authentications
- Worked explicitly on reducing code redundancy
- Co-authored Technical paper



Varun Reddy : Primary Quality Analyst/ Architect assist

- Created multiple unit test cases, to ease the load on developers.
- Supported team with Frontend and Backend development.
- Designed various test cases on multiple platforms expanding horizons.
- Co-authored technical paper

Agenda

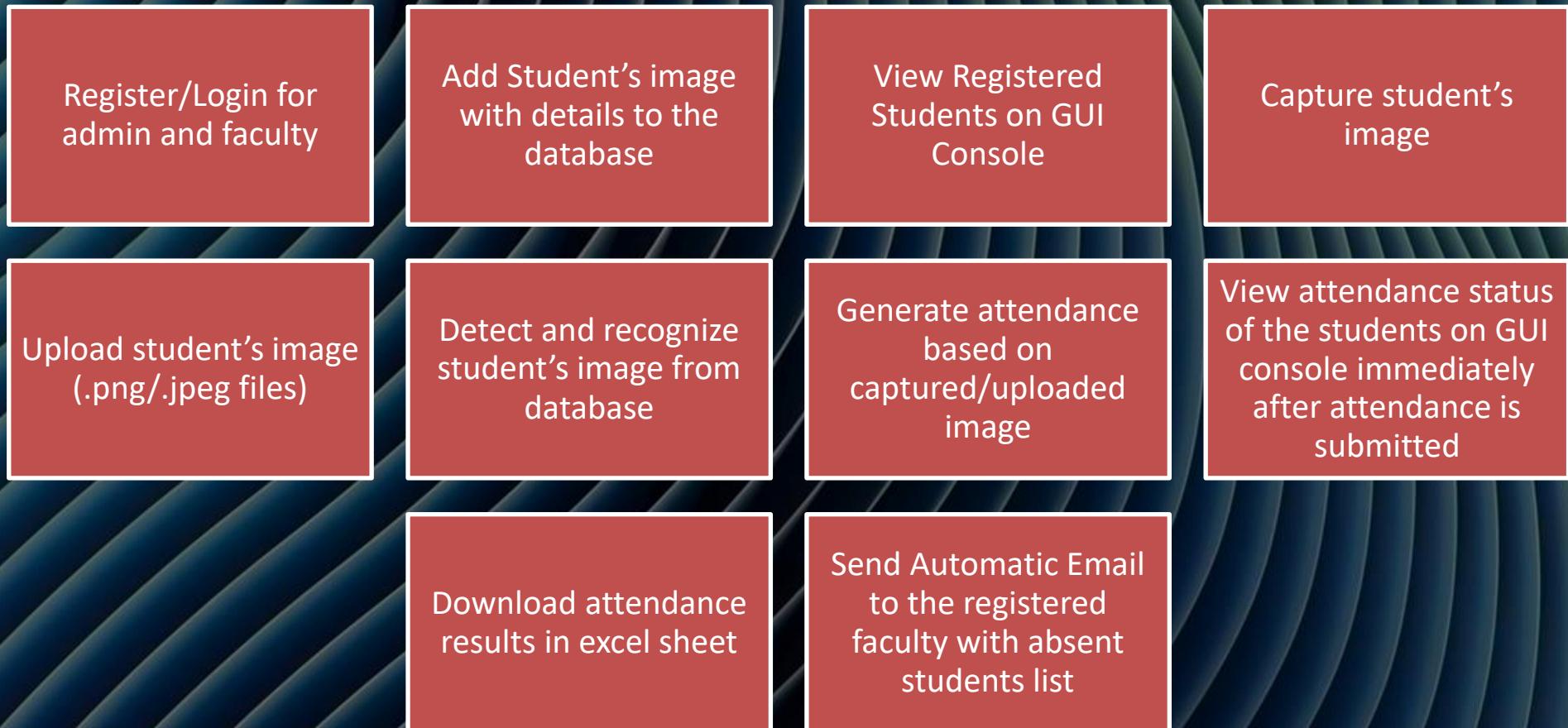
- Project Description
- Personas
- Technologies Used
- System Architecture
- Sprint 1-7 Recap
- Sprint 8 – Completed tasks & stories
- Sprint 8 Screenshots
- Sprint 8 Test Cases
- Sprint 8 Burndown Chart
- Retrospective
- Future Scope
- Project Links
- Project Demo

Project Description

- Main purpose of this application is to replace conventional manual attendance method with human interference which consumes lot of time and effort to maintain student attendance.
- Our application has been designed to use advanced face detection technique by machine learning algorithm to automate whole process of managing attendance in educational institute
- Our application uses camera to capture one's image compares it with the image stored in database followed by marking attendance.
- Instructor will receive an email with a list of students who were absent for a particular class and school admin can immediately view attendance details after each class.
- Lastly, our application reduces manual errors by consolidating student attendance which can be revisited and download reports when required making it easier for instructors and admin to manage student attendance.



Attendance Automation System Requirements



Persona

About Professor Riya,

- Raya is a 35 years old Professor at Physics teacher at Pace University I manually take the attendance for all my classes and don't keep a track of and accidentally one of the student was marked absent, he came back to me saying he was present for the class I couldn't verify it as I don't keep a track of it.

What can we do ?

- Raya can register all the students to the Attendance Automation System and track with separate login details for the faculty and emails after every class.



Persona

About Student Steve,

- Steve is a 25 years old Student pursuing masters at Pace University, he attends several classes a day with ample number of students each class and manual attendance would take significant amount of time, he feels there should be an automated attendance system to save class time.

What can we do ?

- Steve can simply do a one-time registration with school admin and be present in front of camera while professor is capturing image of students to mark his attendance which avoids him to wait for professor to call out each student's name and mark attendance.



Persona

About University Administrator Jonathan,

- Jonathan is a 35-year-old university administrator who keeps track of student's attendance details at Pace University, he find it difficult to call out every professor after each class to submit attendance details to maintain a track of student attendance data.

What can we do ?

- Jonathan can make a one-time effort of registering all the university students to the Attendance Automation System tool which will automatically mark the attendance of all the students present in each professor's class and keeps a track of all the classes and students without any need to contact each professor after every class.



TECHNOLOGIES USED



PYTHON
(BACKEND BUSINESS
LOGIC)



PYQT-5 GUI TOOLKIT
(FRONTEND)



HTML
(FRONTEND)



CSS
(FRONTEND)



MySQL
(DATABASE)

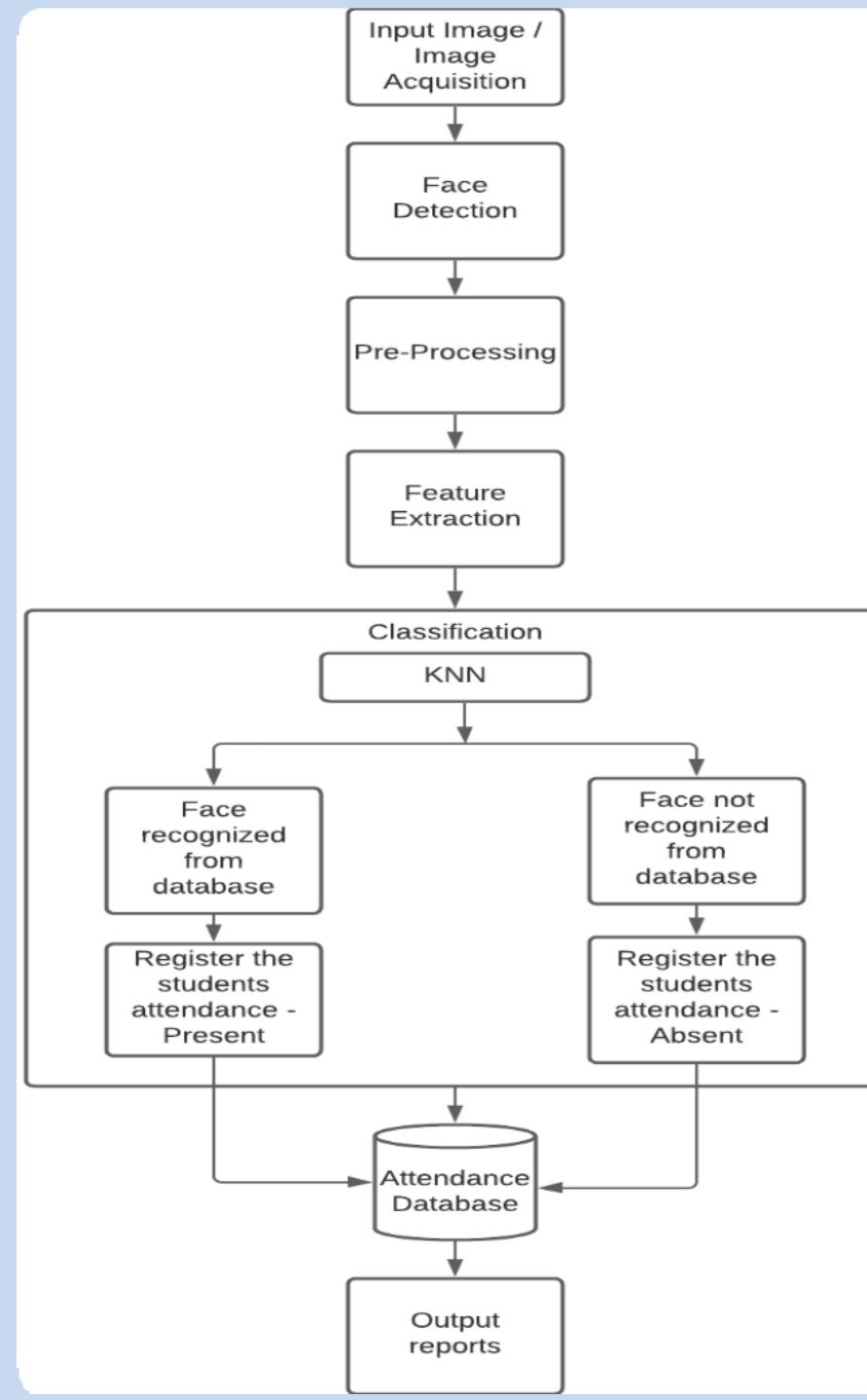


```
for object to mirror
    mirror_mod.mirror_object

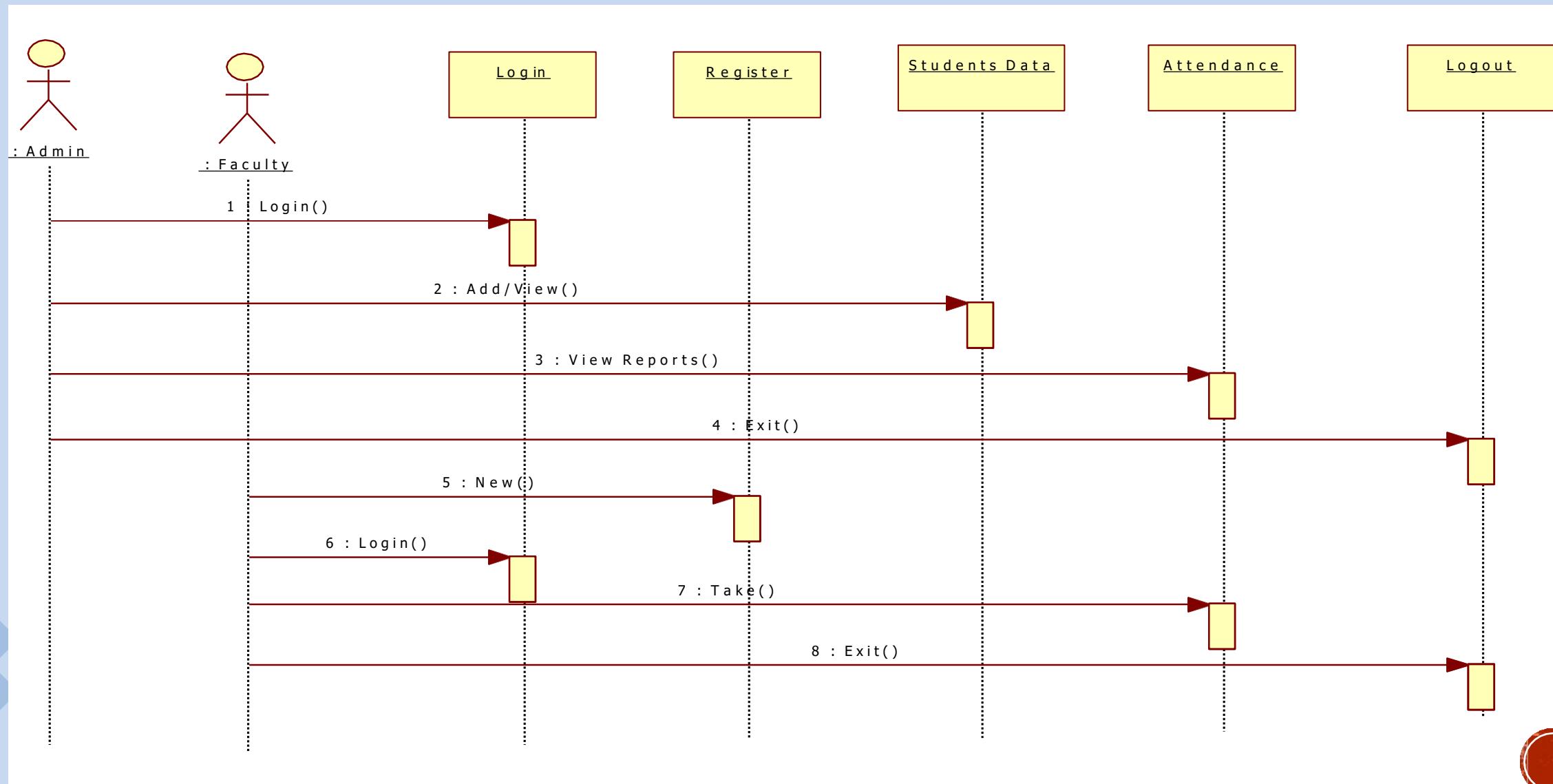
operation == "MIRROR_X":
mirror_mod.use_x = True
mirror_mod.use_y = False
mirror_mod.use_z = False
operation == "MIRROR_Y":
mirror_mod.use_x = False
mirror_mod.use_y = True
mirror_mod.use_z = False
operation == "MIRROR_Z":
mirror_mod.use_x = False
mirror_mod.use_y = False
mirror_mod.use_z = True

selection at the end -add
    ob.select= 1
    mirr_ob.select=1
    context.scene.objects.active
    ("Selected" + str(modifier))
    mirror_ob.select = 0
    bpy.context.selected_objects
    data.objects[one.name].sele
    print("please select exactly one object")
- OPERATOR CLASSES -
types.Operator:
    X mirror to the selected object.mirror_mirror_x"
    "mirror X"
```

Flow Chart



Sequence Diagram



Algorithm Used for face recognition

- KNN Machine Learning algorithm is as part of Python's face recognition library which is used to integrate face detection in our application
- KNN is one amongst the best algorithms that may be used for image classification.
- It consists of two main phases namely the training phase and the testing phase.

Generating Training Data: The subsequent steps are followed to get training data

- Captures images from your webcam video stream

- Extracts all Faces from the image frame

- Stores the Face information into NumPy arrays

- Read and show video stream, capture images

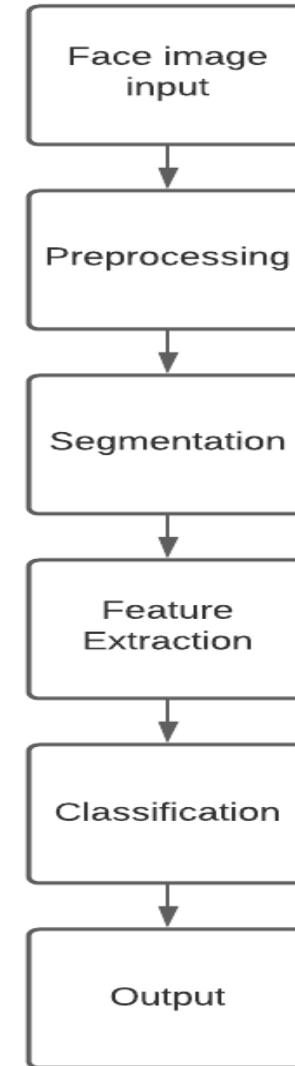
- Detect Faces and show bounding box

- Flatten the biggest face image (gray scale) and save in a numpy array

- Repeat the above for multiple people to get training data.

Algorithm used for Face Recognition

- *Building the Face Classifier*
- *Recognize Faces using the classification algorithm — KNN.*
- *load the training data (NumPy arrays of all the persons)*
 - *X - values are stored within the NumPy arrays*
 - *Y - values are assigned for every person*
- *Read a video stream using OpenCV*
- *Extract faces out of it*
- *Use KNN to search out the prediction of face*
- *Map the anticipated id to call of the user*
- *Display the predictions on the screen - bounding box and name*



Sprints 1-7 Recap:

Type	Description	Priority	Status	Story Points
US-1	As an admin/faculty I want to access the options available for login/register into the application so that we can choose if our school admin or faculty wants to login with necessary credentials	Highest	Completed	8
US-2	As an admin I want a secure login account page to provide the credentials and login to my account	Highest	Completed	8
Task	Brainstorm for a significant business application idea	Highest	Completed	N/A
Task	Establish team roles	High	Completed	N/A
Task	Setup development tools and software's (Python, PyCharm, MySQL, GitHub)	Medium	Completed	N/A
Task	Establish weekly meetings	Medium	Completed	N/A
Task	Design/Search for icons to be used for admin/faculty to be used on homepage	High	Completed	N/A
Task	Create Deliverable 1 Presentation Slides	Medium	Completed	N/A

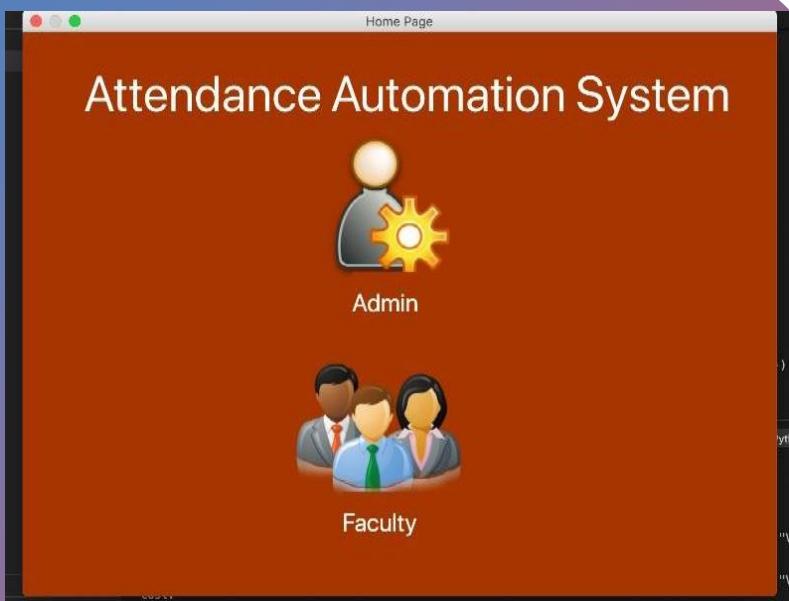
Sprint 1 Artifacts

- Number of User Stories completed - 2
- Number of Tasks Completed – 6
- Artifacts Completed = 100%
- Velocity = 16



Sprint 1 Deliverables

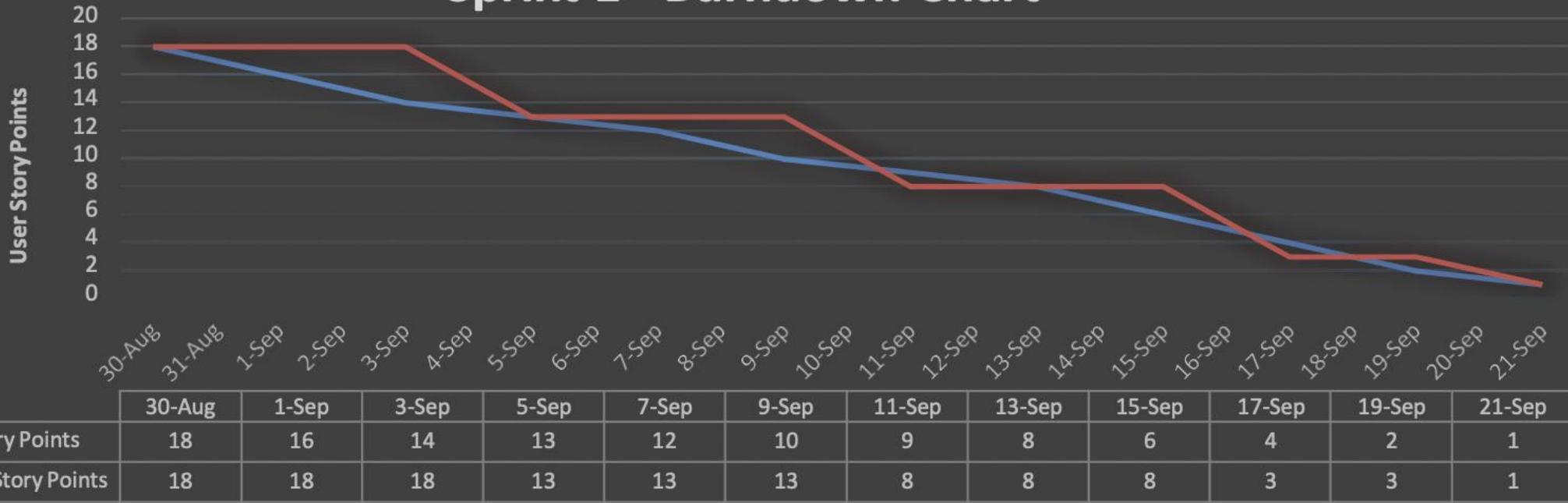
- We have completed designing the front-end skeleton for Admin login page
- We completed first draft of our Attendance Automation System Home Page showing options for Admin/Faculty to login/Register after selecting their role



Sprint 1 TEST CASES:

Key	Scenario	Test Case	Expected Result	Actual Result
US – 1	Main Dashboard	Able to see and hover Admin and Faculty page buttons	-User should be able to click on the Admin or Faculty based on the utility	Pass
US – 1	Main Dashboard	Admin/Faculty Should be able to redirect to the homepage of Faculty or Admin accordingly	-User should be able to view homepage according to their role	Pass
US – 2	Admin Login page	- Admin should be able to redirect to admin login page once clicked on admin on home page	-Admin login page should be displayed	Pass

Sprint 1 - Burndown Chart

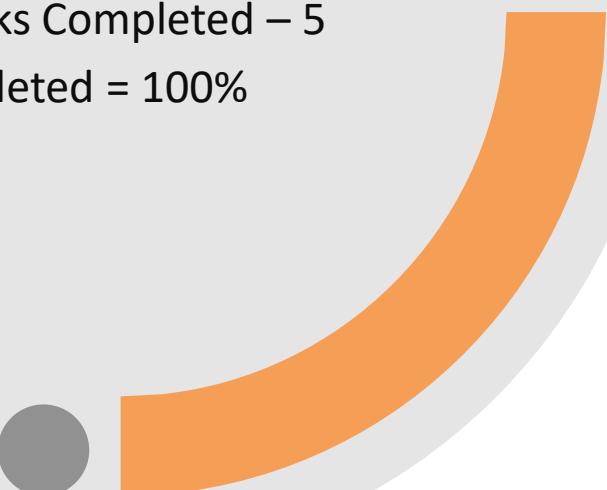


Sprint 1 Burndown Chart

Type	Description	Priority	Status	Story Points
US-3	As an admin, once successfully logged in I should be able to view options to add student/ view registered students or check reports	Highest	Completed	8
US-4	As an admin I want to access the student registration page to add/register the students into the database to maintain the student's registration details	High	Completed	8
Task	Design/Search for icons to be used on admin options page and student registration page	Highest	Completed	N/A
Task	Setup MySQL Database	High	Completed	N/A
Task	Add login authentication for admin account	Highest	Completed	N/A
Task	Research Python PyQt GUI toolkit framework	High	Completed	N/A
Task	Create Deliverable 2 Presentation Slides	Medium	Completed	N/A

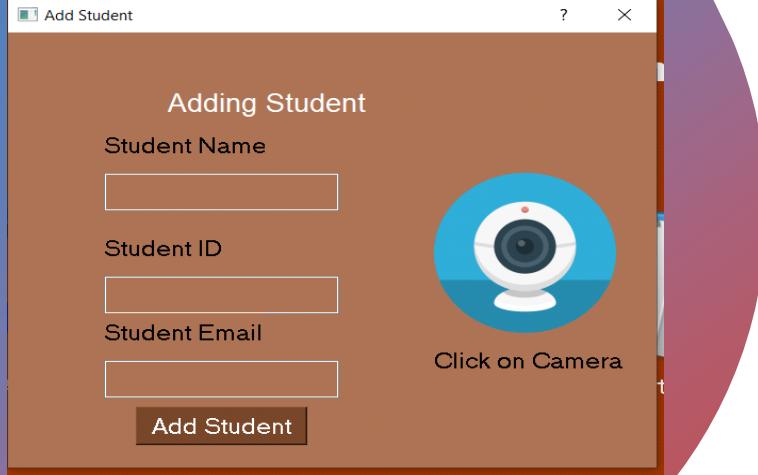
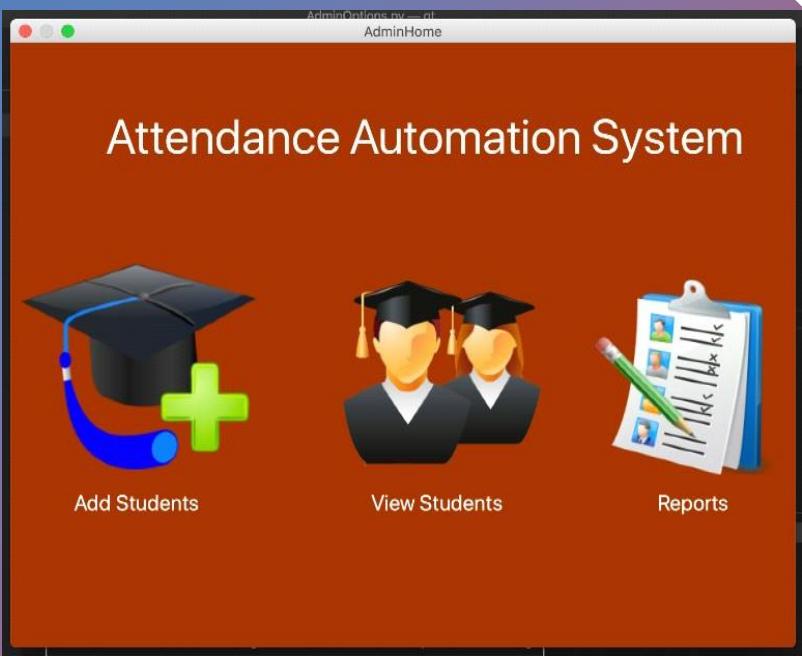
Sprint 2 Artifacts

- Number of User Stories Completed – 2
- Number of Tasks Completed – 5
- Artifacts Completed = 100%
- Velocity = 16



Sprint 2 Deliverables

- We added login authentication for admin to access admin options providing options to add/view students or access reports
- We completed designing Student registration page which can be accessed once admin logins and clicks on add students



Sprint 2 TEST CASES:

Key	Scenario	Test Case	Expected Result	Actual Result
US - 3	Admin Login	- Admin should be able to provide username and password to login to admin account	- Admin options page should be displayed if valid credentials are provided	Pass
US - 3		- If wrong credentials are provided, then invalid credentials message should be displayed	- Displayed message to provide valid credentials message and deny access to account	Pass
US – 4	Admin options page	- Click on add student to access student registration page	- Student registration page should be displayed providing options for student registration details	Pass

Sprint 2 - Burndown Chart



Sprint 2 Burndown Chart

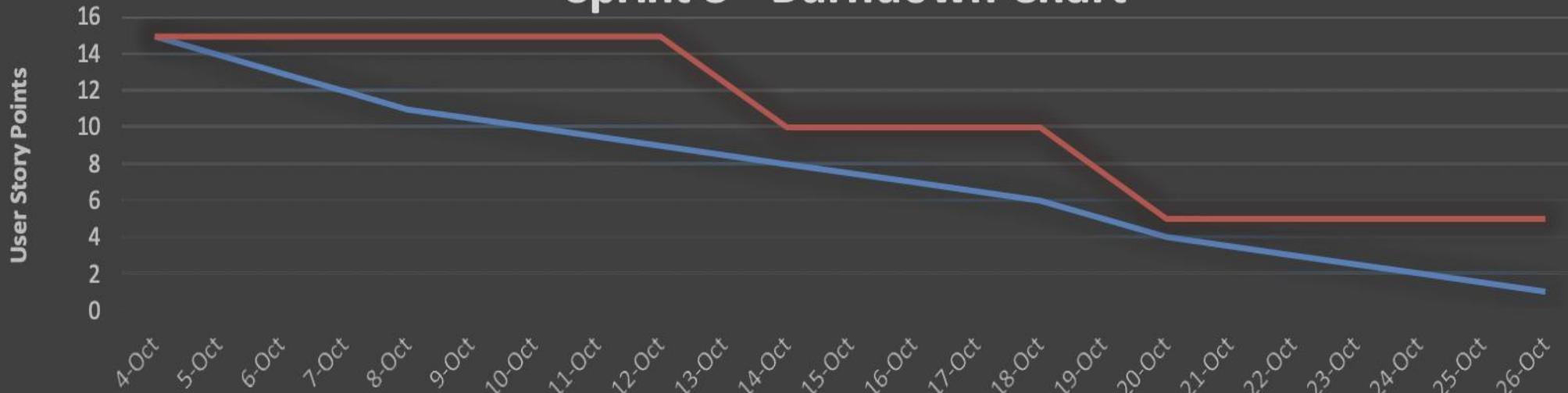
Type	Description	Priority	Status	Story Points
US-3	As an admin, I want to design a Database where we store all the user data (Admin, Faculty and Student private data)	Highest	Completed	8
US-10	As a faculty, I want to register as a faculty providing required personal details.	High	Moved to Sprint 4	8
Task	Create database tables required to store all user data	High	Completed	N/A
Task	Create IEEE Style technical paper (Deliverable 3)	Highest	Completed	N/A

Sprint 3 Artifacts

- Number of User Stories Completed – 1
- Number of Tasks Completed - 2
- Artifacts Completed =75%
- Velocity = 8



Sprint 3 - Burndown Chart



Sprint 3 Burndown Chart

Type	Description	Priority	Status	Story Points
US-6	As a faculty, I would like to access the login page to the application using username and password given during the faculty registration	Highest	Completed	4
US-8	As an admin, I should be able to add and view registered student's information in database provided during student registration	Highest	Completed	8
US-10	As a faculty, I want to access the registration page as a faculty providing required personal details.	High	Completed	4
Task	Integrate OpenCV library to be able to access system camera to capture image	Highest	Completed	N/A
Task	Design/Search icons to be used and integrate them for student and faculty registration pages	High	Completed	N/A
Task	Create Deliverable 4 Presentation Slides	High	Completed	N/A

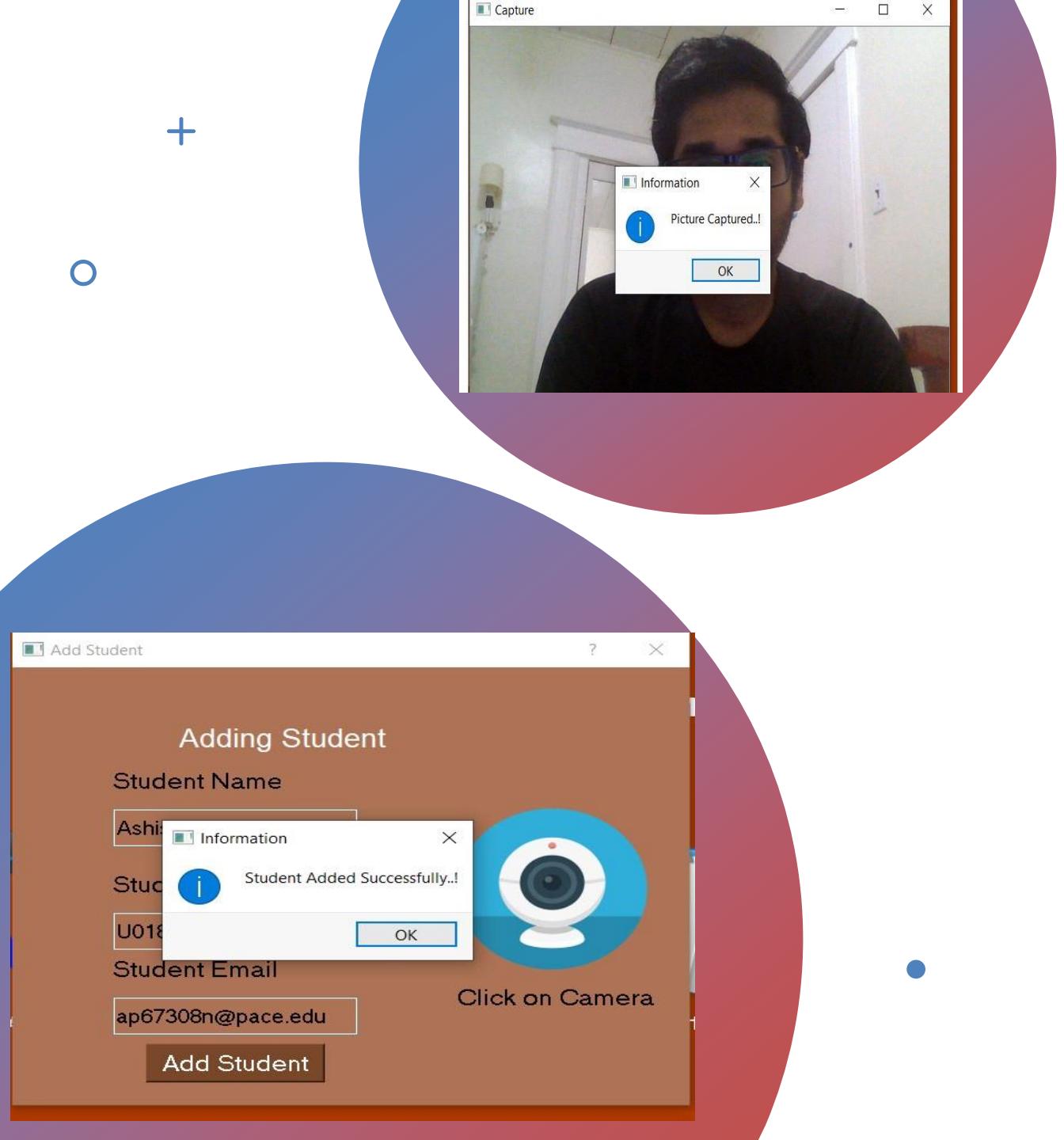
Sprint 4 Artifacts

- Number of User Stories Completed – 3
- Number of Tasks Completed – 3
- Artifacts Completed =100%
- Velocity = 16



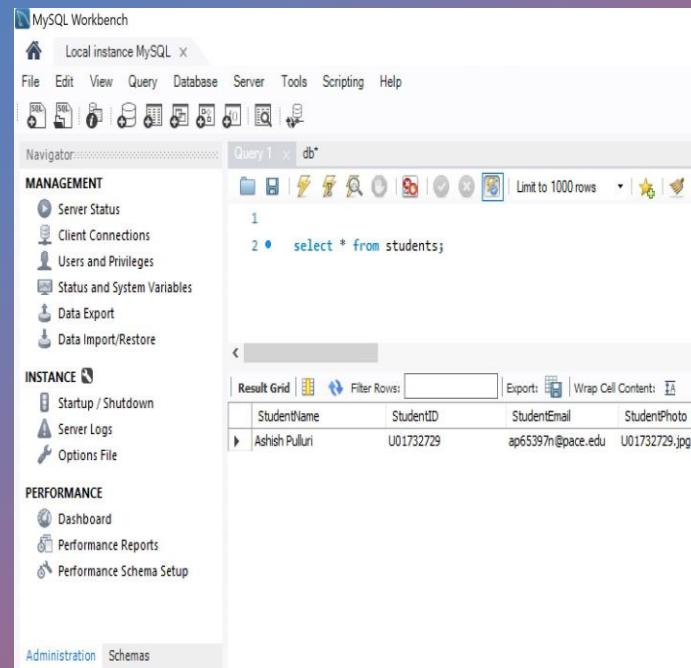
Sprint 4 Deliverables

- We have integrated python's OpenCV library to be able to access system camera to capture and store the image submitted during the registration of the student
- We have completed adding capability to capture image and adding student to the database provided with necessary details



Sprint 4 Deliverables

- Database showing student details provided during the student registration
- We have also completed designing the faculty login page
- Following by the faculty registration page during sprint 4



Sprint 4 TEST CASES:

Key	Scenario	Test Case	Expected Result	Actual Result
US – 8	Student registration page	Enter student name, student id, student email, capture image	Student should be added successfully to the database in student's table	Pass
US – 8	Student registration page	<ul style="list-style-type: none"> - If null details are entered into the form <ul style="list-style-type: none"> - If student image is not captured - Click on camera to invoke system camera - If all details are entered and image is captured 	<ul style="list-style-type: none"> - Display error message to provide all the details - Display error message to capture student image <ul style="list-style-type: none"> - System camera should be invoked - Display alert student is added successfully 	Pass
US – 10	Faculty Registration Page	Click on register now icon to redirect to faculty registration page	<ul style="list-style-type: none"> - Faculty registration page should be displayed 	Pass
US – 6	Faculty login page	User should be able to click on faculty icon on home page to open faculty login page with option to register if new user	Faculty login page should be displayed	Pass

Sprint 4 - Burndown Chart



Sprint 4 Burndown Chart

Type	Description	Priority	Status	Story Points
US-7	As a Faculty, I want to register as a faculty to be able to have a secure login to my account	Highest	Completed	4
US-9	As a Faculty, I want to have a secure login using username and password to access my account to take attendance/view reports	Highest	Completed	4
US-11	As a faculty, I want to access options available to capture attendance/browse an image to upload for attendance or view reports	High	Completed	8
Task	Develop attendance options page and faculty options page	Highest	Completed	N/A
Task	Design/Search icons to be used and integrate them for faculty options page and attendance options page	High	Completed	N/A
Task	Update Technical Paper for Sprint 5	Medium	Completed	N/A
Task	Create Deliverable 5 Presentation Slides	High	Completed	N/A

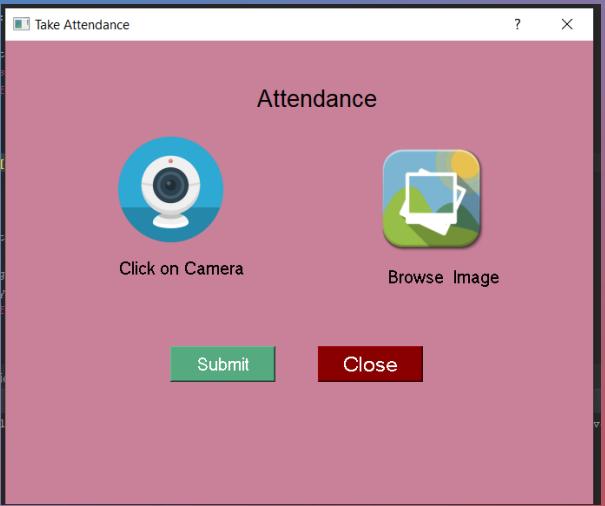
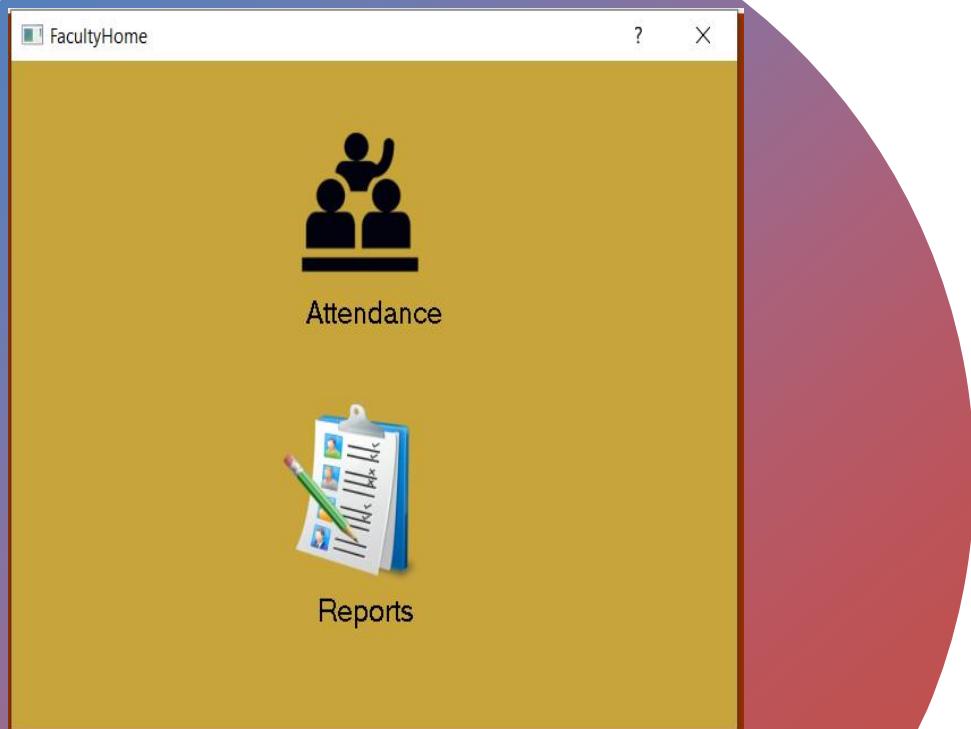
Sprint 5 Artifacts

- Number of User Stories Completed - 3
- Number of Tasks Completed – 3
- Artifacts Completed =100%
- Velocity = 16



Sprint 5 Deliverables

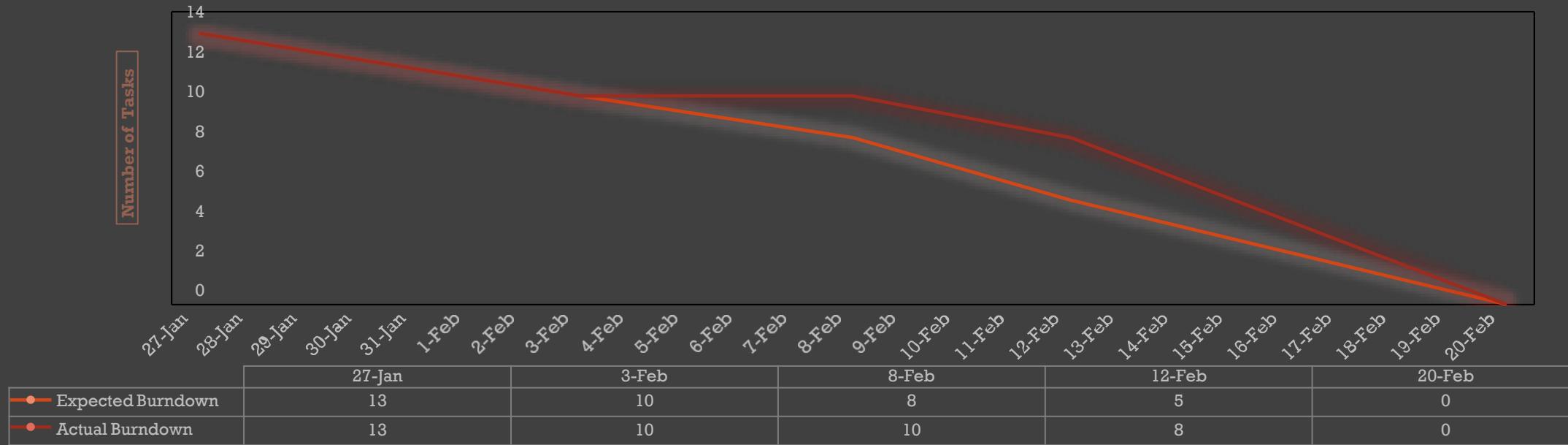
- We have added registration and login authentication for faculty and faculty can now login to their account using the credentials provided during the registration
- We have also completed designing the faculty home page and attendance options page
- We added capability to store the students image captured /uploaded by faculty which can be used by machine learning algorithm to perform face recognition to recognize the students



Sprint 5 TEST CASES:

Key	Scenario	Test Case	Expected Result	Actual Result
US- 7	Faculty Registration	Enter all the required fields name, email id, password, phone number	- User should be able to successfully register and display successfully registered message	Pass
US - 7		Fields should not be empty and All the fields need to be provided to successfully register	Display fields cannot be empty if any field is not entered successfully	Pass
US - 9	Faculty Login	Sign in using the valid username and password provided During registration	- User should be able to successfully login with their credentials	Pass
US - 11	Faculty options Page	Immediately after login faculty should be able to see options to capture attendance/ browse image to upload options	- Display capture attendance/ browse image to upload options to faculty after the sign in	Pass
US - 11		Should be able to click on capture attendance icon to open the system camera	- System camera should be invoked and able to capture the image	Pass
US - 11		Should be able to click on image upload to browse an image available in the system	Display files available to upload an image available in the user's system	Pass

Sprint 5 - Burndown Chart



Sprint 5 Burndown Chart

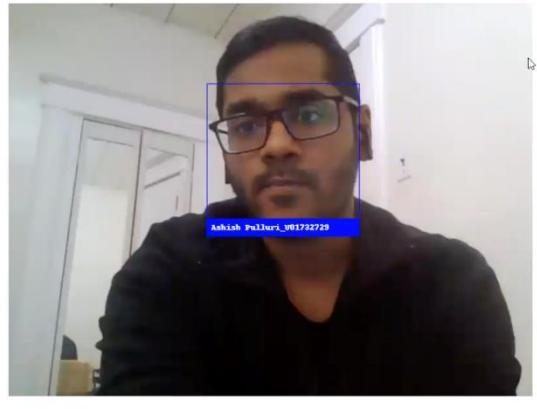
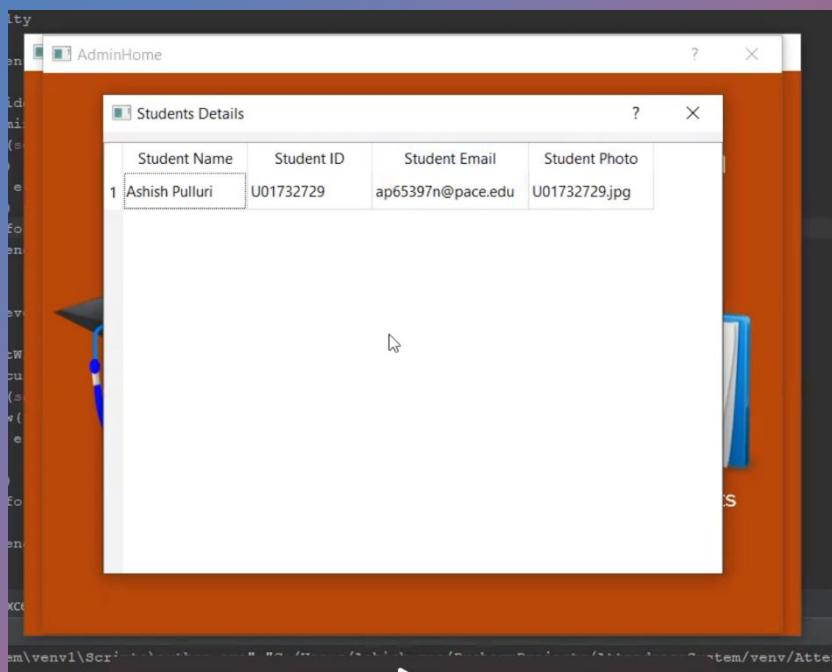
Sprint 6 Artifacts

- Number of User Stories Completed – 2
- Number of Tasks Completed – 3
- Artifacts Completed =83%
- Velocity = 21

Type	Description	Priority	Status	Story Points
US-12	As a Faculty/Admin, I want the application to detect the students face and display the name of the student present for attendance	Highest	Completed	8
US - 15	As a Faculty/ Admin, I want to view attendance reports generated after the student attendance is updated on the GUI Console	High	Moved to Sprint 7	5
US-13	As an Admin, I should be able to access and view registered students on GUI console after login	Highest	Completed	8
Task	Research about integrating KNN Machine learning algorithm and python's face recognition library	Highest	Completed	N/A
Task	Update Technical Paper for sprint 6	High	Completed	N/A
Task	Create Deliverable 6 Presentation Slides	High	Completed	N/A

Sprint 6 Deliverables

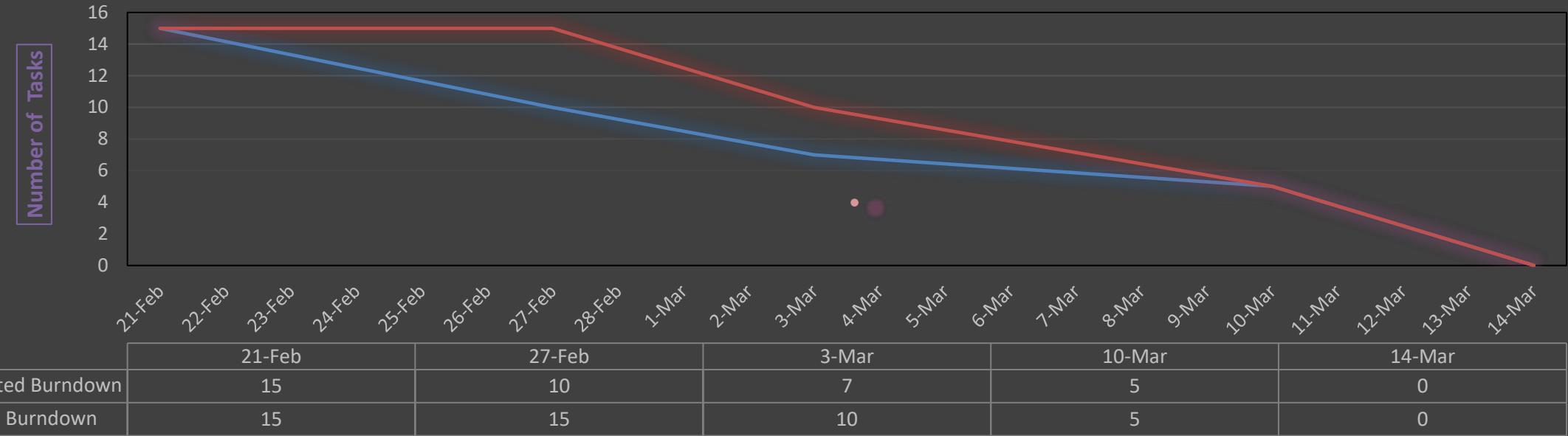
- We added a new capability by integrating KNN Machine learning algorithm to our application which will be able to detect the student face registered in the database and display the student's Name and ID
- We added capability to store the students image captured /uploaded by faculty which can be used by machine learning algorithm to perform face recognition to recognize the students



Sprint 6 TEST CASES:

Key	Scenario	Test Case	Expected Result	Actual Result
US – 12	Faculty options Page	Should be able to click on capture attendance icon to open the system camera	-System camera should be invoked and should be able to take a photo	Pass
US – 13	Display registered students on GUI console	Admin should be able to click on view students in the GUI console to view all the registered students	GUI Console should display all the registered student details including name, student ID, email and student image number	Pass
US – 12	Detect registered student face	Faculty should be able to capture/upload image and click submit to successfully submit attendance	Display attendance successfully captured message	Pass
US – 12	Detect registered student face	KNN Machine learning algorithm should be able to detect the student face from the registered student's data stored in the database	Faculty should be immediately able to see the student's image who are present with their names recognized from the database.	Pass

Sprint 6 - Burndown Chart



Sprint 6 Burndown Chart

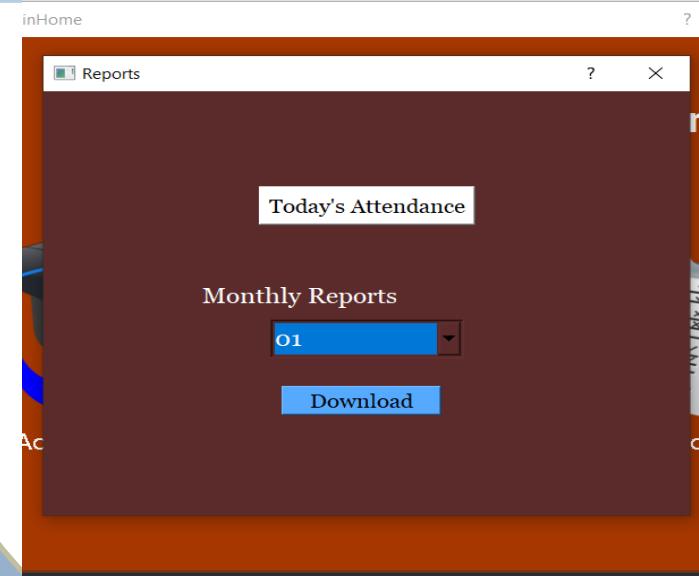
Sprint 7 Artifacts

- Number of User Stories Completed – 3
- Number of Tasks Completed – 3
- Artifacts Completed =100%
- Velocity = 15

Type	Description	Priority	Status	Story Points
US - 14	As a Faculty/Admin, I want to access the options available to either view the current day attendance/ Download consolidated attendance for entire month	Highest	Completed	5
US - 15	As a Faculty/ Admin, I want to view attendance reports generated after the student attendance is updated on the GUI Console	Highest	Completed	5
US - 16	As a Admin/Faculty, I want to download attendance reports once the attendance is captured and submitted	Highest	Completed	5
Task	Update Technical Paper for sprint 7	High	Completed	N/A
Task	Create Deliverable 7 Presentation Slides	High	Completed	N/A

Sprint 7 Deliverables

- Admin/Faculty can now access reports option page to view today's attendance/Download consolidated attendance for the current month or previous months
- The Admin/Faculty can now view the attendance report in the GUI Console immediately once attendance is captured & submitted by faculty by accessing the report options page(bottom-left)
- A new capability to download the attendance result in excel format has been added by using OpenPyXI python library which can be used to read/write data to the excel sheets
- The admin and faculty can download the attendance reports generated immediately after attendance is submitted.(bottom-right)



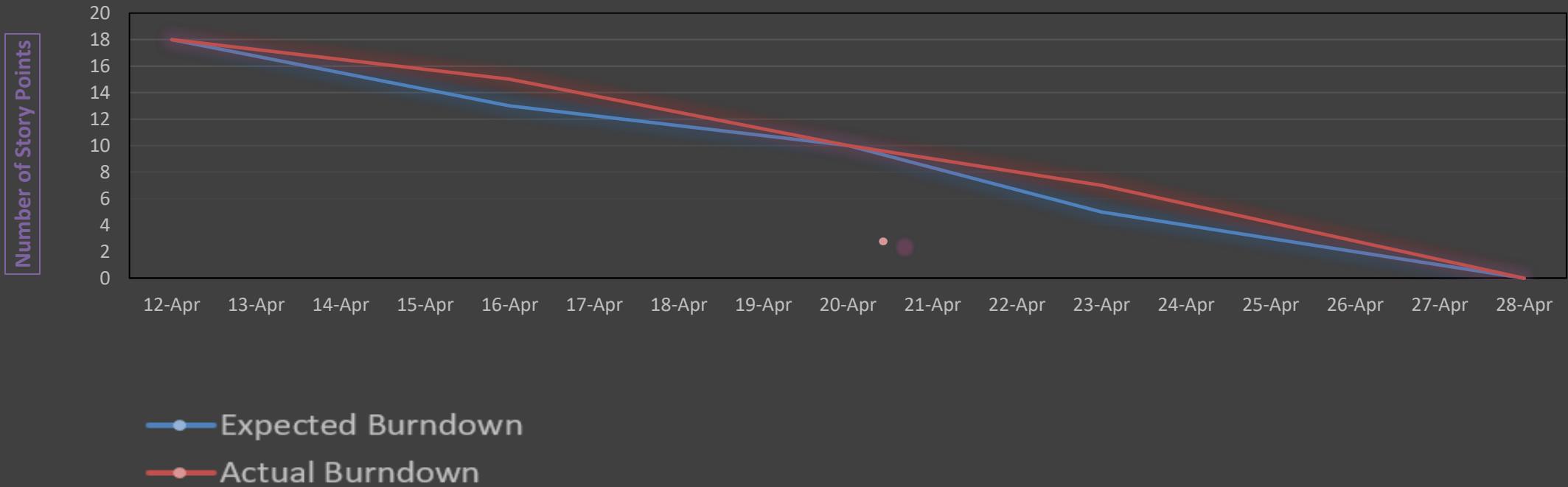
Date	Student ID	StudentName	Attendance
1 2021-04-12	U01732729	Ashish Pulluri	Present

The screenshot shows an Excel spreadsheet with data in columns A, B, and C. Row 1 contains headers: Date, StudentID, and StudentName. Row 2 contains data: 12-04-2021, U01732729, and Ashish Pulluri. A dialog box titled 'Information' says 'Downloaded and save in Reports.xlsx' with an 'OK' button. The Excel ribbon is visible at the top.

Sprint 7 TEST CASES:

Story Number	Scenario	Test Case	Expected Result	Actual Result
US – 14	Access attendance reports	Admin should be able to click on reports in admin options page to access reports page to view/download reports	Attendance reports page should be displayed to the admin	Pass
US – 14	Access attendance reports	Faculty should be able to click on reports in faculty options page to access reports page to view/download reports	Attendance reports page should be displayed to faculty	Pass
US – 15	View attendance reports	Admin/Faculty should be able to click on today's attendance to view attendance report generated today on GUI Console	Admin/Faculty should be able to view student's attendance report captured today with list of students who are present and absent	Pass
US - 15	View attendance reports	Attendance report on GUI Console should display complete student details with attendance	Date, student id, student name and attendance status should be displayed	Pass
US – 16	Download attendance reports	Admin/Faculty should be able to click on download to successfully download data in excel sheet	Downloaded and saved in reports.xlsx message should be displayed	Pass
US – 16	Download attendance reports	Admin/Faculty should be able to access the student's attendance reports in excel format	Admin/Faculty should be able to download excel sheet with consolidated attendance data	Pass
US - 16	Download attendance reports	Downloaded excel sheet should display complete student details with attendance status	Date, Student ID, Student name and attendance status present/absent should be displayed	Pass

Sprint 7 - Burndown Chart



Sprint 7 Burndown Chart

Sprint 8

Sprint 8 Artifacts

Type	Description	Priority	Status	Story Points
US - 17	As a Faculty, I want to receive the email to my registered email id with the list of students who are absent for the class immediately once attendance is captured and submitted	Highest	Completed	8
US - 18	Complete Redesign of attendance automation system	Highest	Completed	5
US - 19	As a Faculty/Admin, I want the application to be available as a executable file so that it is easier to deploy and start using the app	High	Completed	5
Task	Integrate smtplib python library and configure the base email address to be used for app to send attendance emails to faculty	Highest	Completed	N/A
Task	Completely redesign the attendance automation system with more user-friendly design colors and icons for all the modules	High	Completed	N/A
Task	Convert the main.py python file to executable file(.exe) using pyinstaller	High	Completed	N/A
Task	Update technical paper for sprint 8	Medium	Completed	1
Task	Update wikipage on GitHub	Medium	Completed	2
Task	Update User Manual	Medium	Completed	2
Task	Prepare presentation slides for sprint 8	Medium	Completed	2
Task	Improvement Action Item(Sprint 7 Feedback)	High	Completed	2



Sprint 8 Statistics

Number of User Stories Completed - 3

Number of Tasks Completed – 8

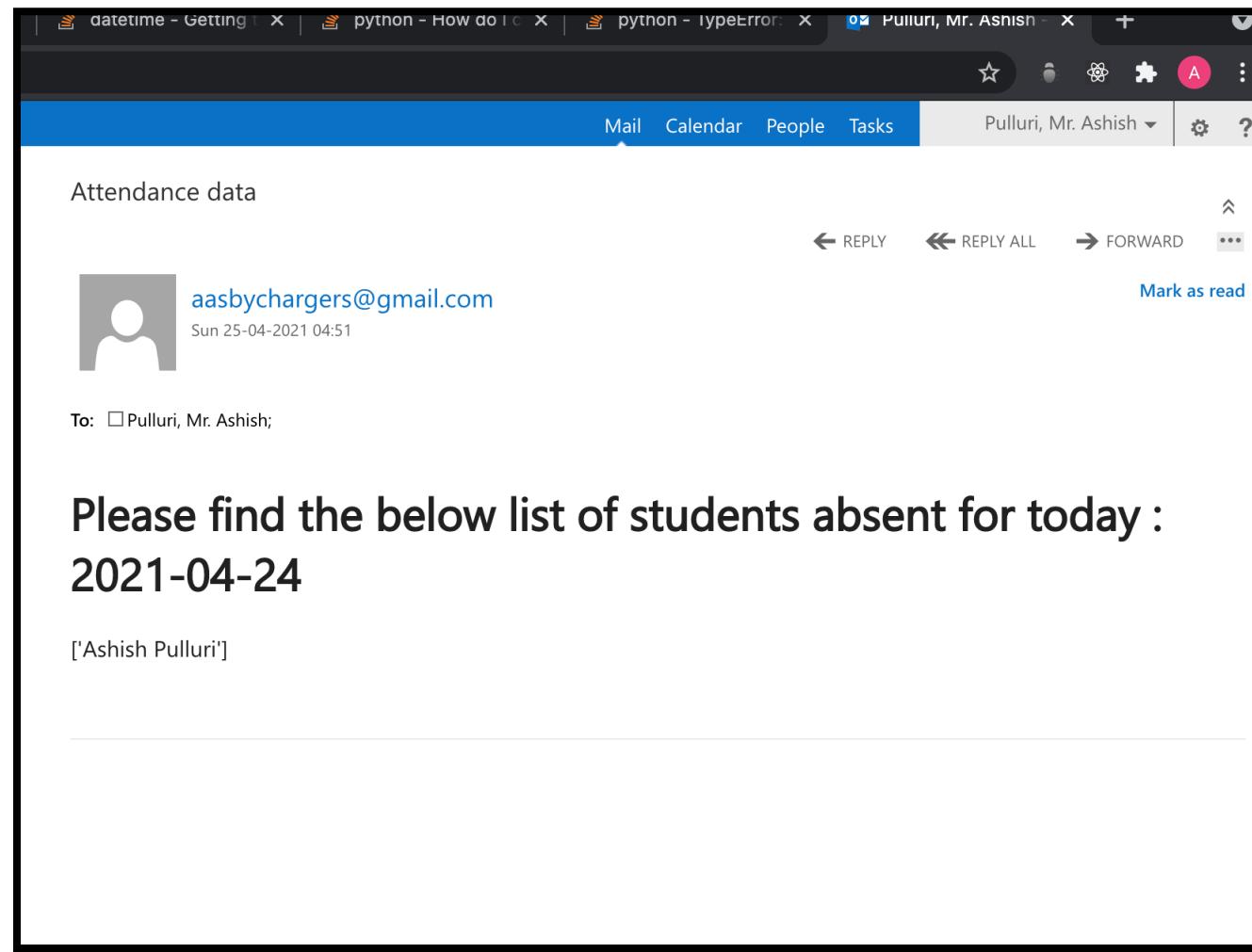
Velocity = 18

Artifacts Completed = 100%

Committed and Completed Artifacts

ID	User Story	Acceptance Criteria	Story Priority	Story Points
US - 17	As a Faculty, I want to receive the email to my registered email id with the list of students who are absent for the class immediately once attendance is captured and submitted	Given that the Faculty is on the attendance options Page, when the faculty captures the image and submits the attendance an email should be automatically sent to the registered email id with the list of students who are absent for the class	Highest	8
US - 18	As a Faculty/ Admin, I want the application to be very user friendly	Given that the application is launched by either faculty/admin the application should be displayed with more user-friendly design colors and icons for all the pages and modules of the application	Highest	5
US-19	As a Faculty/Admin, I want the application to be available as a executable file so that it is easier to deploy and start using the app	Given that the faculty/admin when try to use the application can click on the executable file to launch the application instead of running the python script through IDE	High	5

Issue Type	Summary	Task Priority
Task	Integrate smtplib python library and configure the base email address to be used to send attendance emails to faculty	Highest
Task	Completely redesign the attendance automation system with more user-friendly design colors	High
Task	Update the application icons for all modules of the application	High
Task	Convert the main.py python file to executable file(.exe) using pyinstaller	High
Task	Update technical paper for sprint 8	Medium
Task	Update wikipage on GitHub	Medium
Task	Update User Manual	Medium
Task	Prepare presentation slides for sprint 8	Medium
Task	Improvement Action Item(Sprint 7 Feedback)	High



SPRINT 8 - Deliverable 1

- **Email Attendance result data if student is absent**
- - We added a new capability to send emails using python's smtplib library which can be used to send emails automatically once faculty captures and submits the attendance image

SPRINT 8 - Deliverable 2

Email Attendance result data if all students are present

- If all the students are present while attendance is captured and once machine learning algorithm detects all the students registered and if no student is absent the following email would be sent to the registered faculty

The screenshot shows an email inbox with the following details:

- Search mail and people** search bar.
- INBOX** and **CONVERSATIONS BY DATE** buttons.
- All Unread To me Flagged** filter buttons.
- aasbychargers@gmail.cc** subject: **Absent Attendance Data 2021-04-27**.
Message content: **No Student is absent for today**.
Sent at **20:29**.
- aasbychargers@gmail.com** subject: **Absent Attendance Data 2021-04-27**.
Message content: **Please find the below list of students absent for tod...**
Sent at **20:26**.
- aasbychargers@gmail.com** subject: **Absent Attendance Data 2021-04-27**.
Message content: **Please find the attachment with list of students abs...**
Sent at **20:10**.
- aasbychargers@gmail.com** subject: **Absent Attendance Data 2021-04-27**.

Absent Attendance Data 2021-04-27

aasbychargers@gmail.com
Tue 27-04-2021 20:29

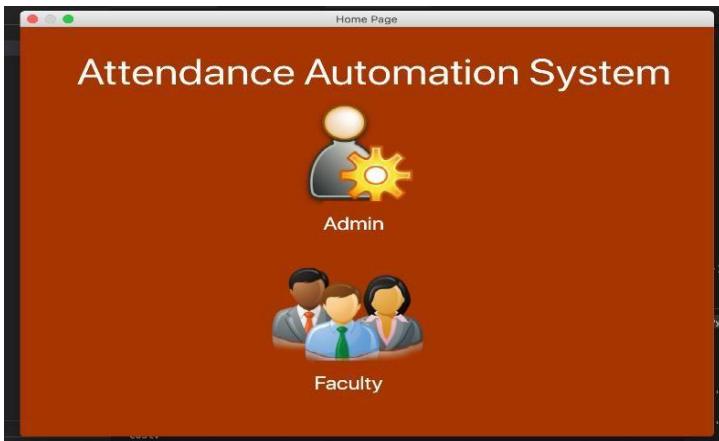
To: Pulluri, Mr. Ashish;

No Student is absent for today

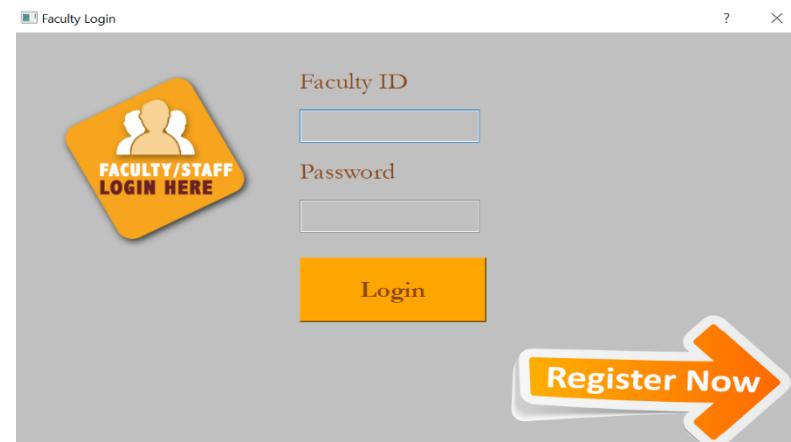
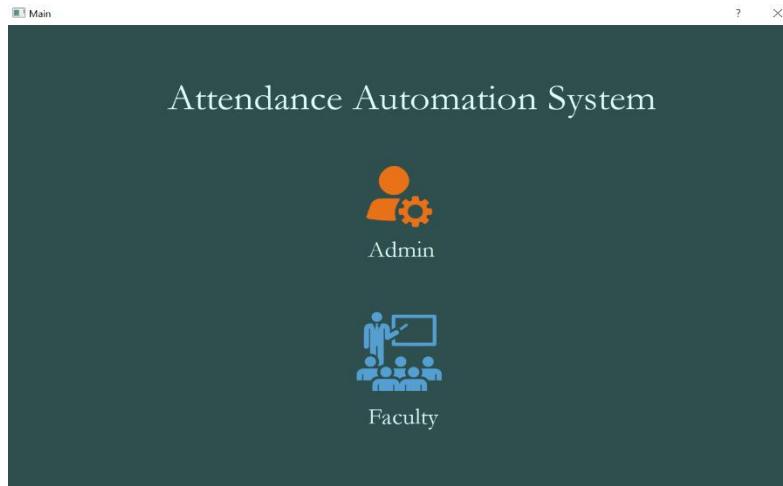


SPRINT 8 – Deliverables

Before



After

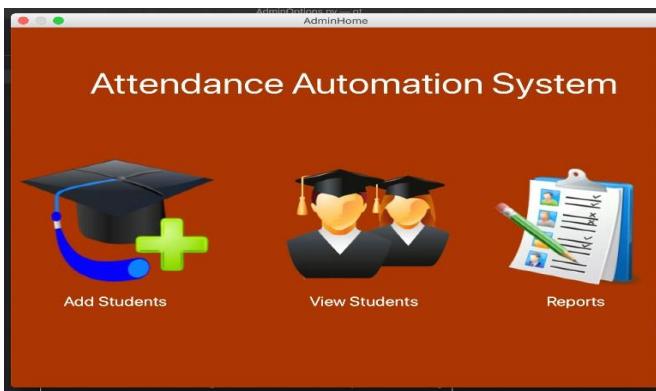
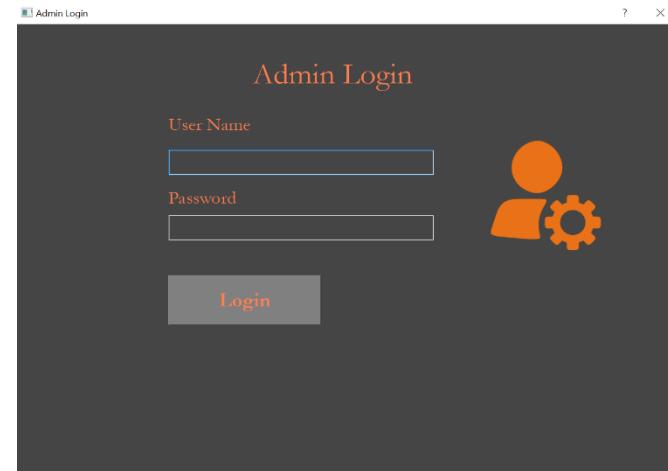


SPRINT 8 – Deliverables

Before



After



SPRINT 8 – Deliverables

Before

Add Student

Adding Student

Student Name

Student ID

Student Email

Click on Camera 

Add Student

After

Add Student

Student Registration

Student Name

Student ID

Add Student

Click on Camera 

FacultyHome

Attendance 

Reports 

FacultyHome

Attendance

Reports 



SPRINT 8 – Deliverables

Before

Faculty Registration

Name

Faculty ID

Password

Email

Mobile No.

Register



After

Dialog

Faculty Registration

Name

Faculty ID

Password

Email

Mobile No.

Register



Take Attendance

Attendance

Click on Camera 

Browse Image 

Submit **Close**

Take Attendance

Capture Attendance

Click on the Camera 

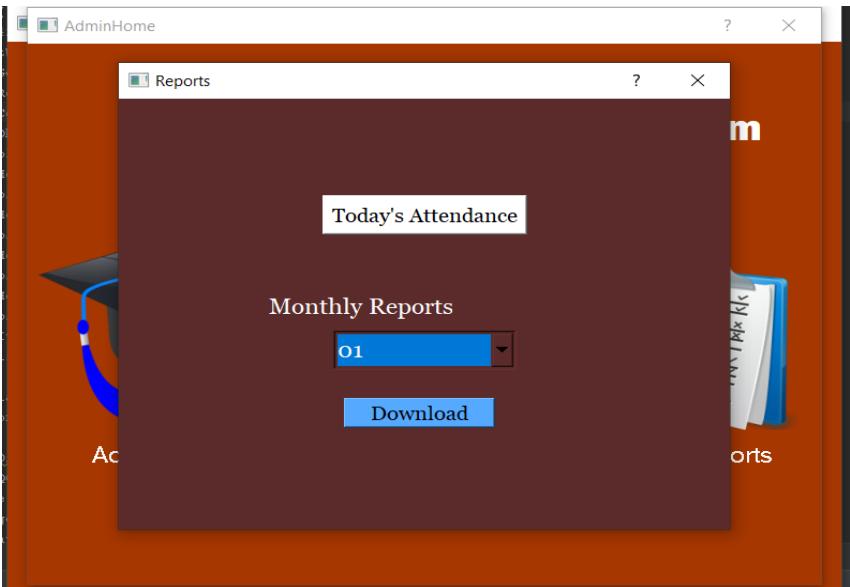
Browse an image 

Submit **Send an email**



SPRINT 8 – Deliverable

Before



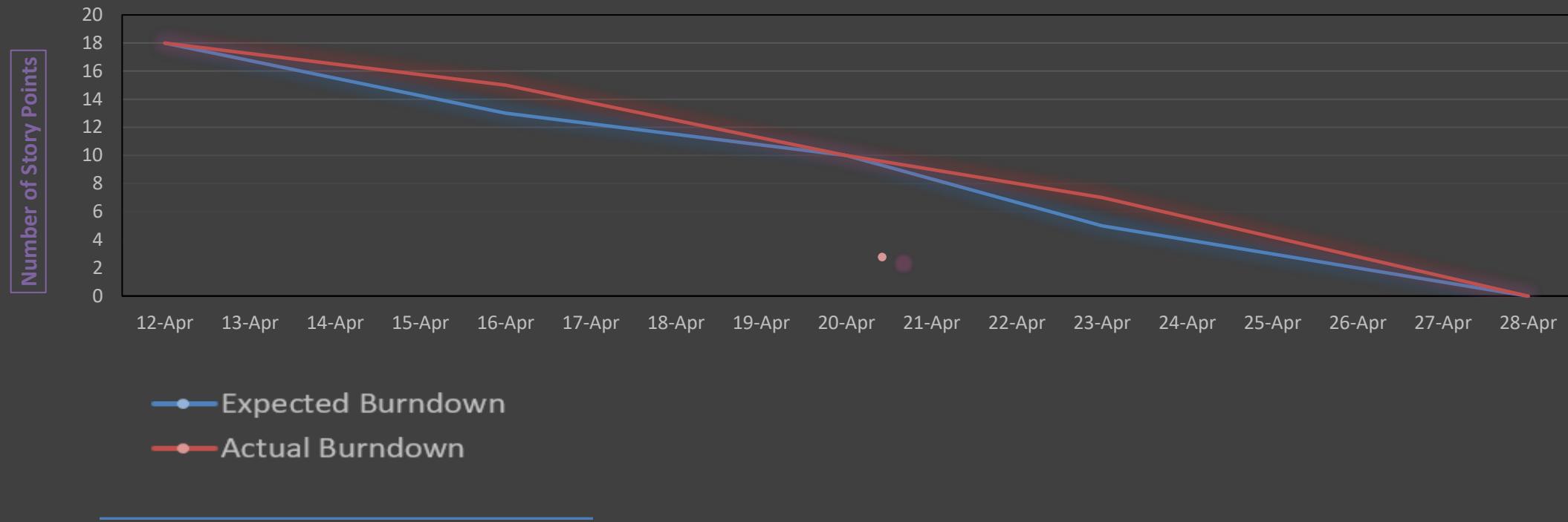
After



Sprint 8 TEST CASES:

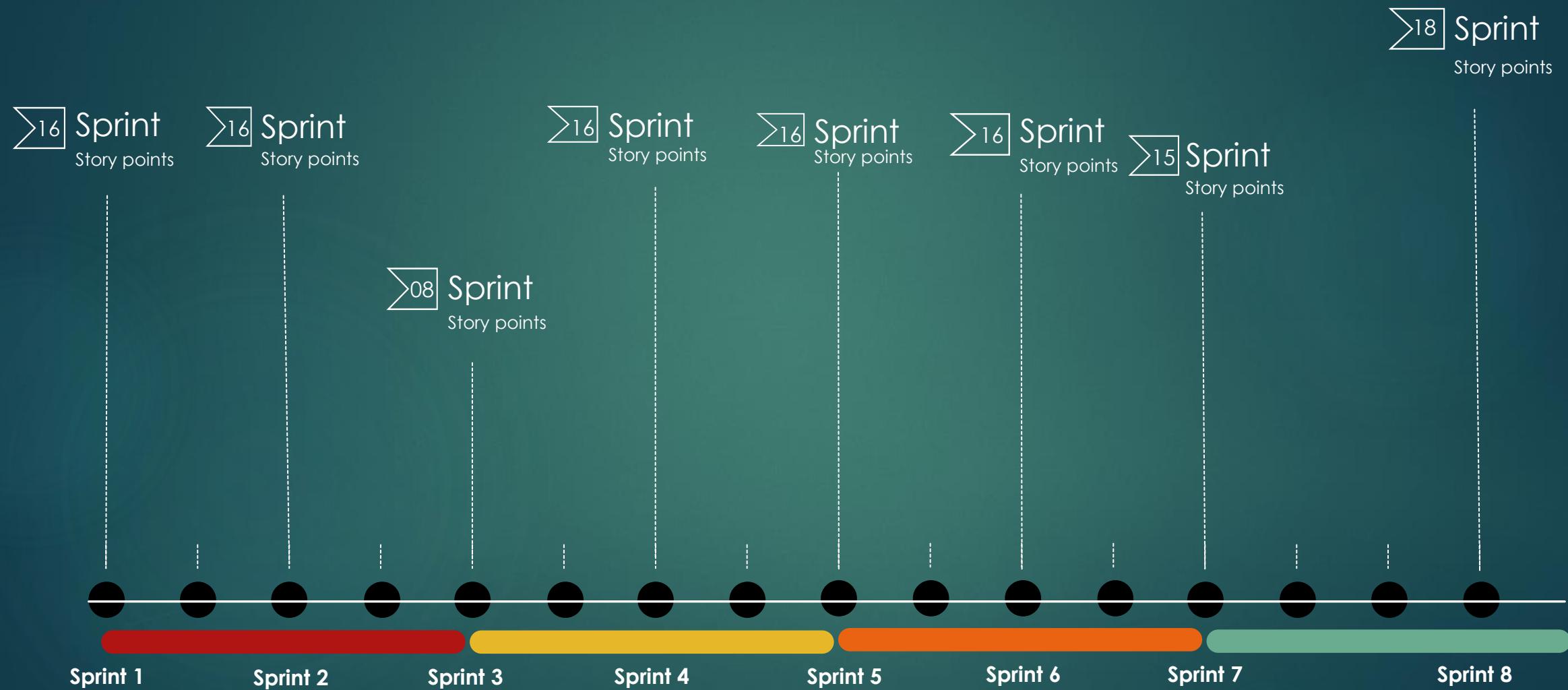
Story Number	Scenario	Test Case	Expected Result	Actual Result
US – 17	Email to registered faculty	Once faculty clicks on send an email success message should be displayed	Attendance submitted and email sent message should be displayed	Pass
US – 17	Email to registered faculty	When clicked on send email an email with absent list should be sent to registered faculty id	Absent list for the present date should be received by faculty	Pass
US – 18	Redesign UI interface	Redesigned applications icons should be displayed for all pages of application	All the pages of applications are updated with user friendly colors and icons	Pass
US - 19	Create exe file	Converted exe file should be able to start the application	Application is launched when user clicks on main.exe file	Pass

Sprint 8 - Burndown Chart



Sprint 8 Burndown Chart

Story Points Timeline



Sprint Retrospective

What went well	What needs to be improved	Action items
Successfully completed planned user stories and tasks in time	Implemented feedback provided during sprint 7	Implementing scrum principles that we have learned so far to improve our future projects
Knowledge sharing and group discussions went well	The collaboration was great during the paired coding sessions	We plan to learn and take scrum master intermediate course to build on agile methodologies which helps us in our future career goals





Future Scope?

- Migrating and managing entire tool on cloud platform.
- Hosting Attendance Automation System tool on an entirely separate setup build for the application.
- Integrating Automation Attendance System tool to a mobile application and enhancing to cater future needs.

Project Links

- Technical Paper Link :

<https://github.com/ashishpulluri/AttendanceAutomationSystem/blob/main/Deliverable-8-TechPaper.docx>

- Git Hub Link :

https://github.com/ashishpulluri/AttendanceAutomationSystem/blob/main/TechnicalPaper_Final_Sprint8_Chargers.pdf

Thank You

The golden rule for every businessman is this: Put yourself in your customer's place."

- Orison Swett Marden



Project Demo

