| Internship Project Title | TCS iON RIO- 45: Create a CAPTCHA Service to Secure a Simple Web-based Application |
| --- | --- |
| Name of the Company | TCS iON |
| Name of the Industry Mentor | Niteen Gokhale |
| Name of the Institute | PrepInsta Technologies Pvt. Ltd. |

| Start Date | End Date | | Total Effort (hrs.) | | Project Environment | Tools used |
| --- | --- | --- | --- | --- | --- | --- |
| 19/06/2023 | 30/06/2023 | | 45 | | Eclipse IDE, windows | Java, HTML, CSS, JavaScript |
| Milestone # |  | Milestone: | |  | | |

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* Acknowledgements :

I owe a huge debt of gratitude to TCS iON for all of their help with the project, including their direction, continual oversight, and provision of the necessary information. I want to show my gratitude to my parents and my academic mentor for their great support and encouragement in getting this assignment done. I want to express my sincere appreciation and thanks to my industry mentor for taking the time to pay me such close attention.

* Objective :

To create a safe online application CAPTCHA service.

The program will be protected from automated bots by the CAPTCHA system, which also makes sure that only human users can access its features and capabilities.

* Introduction / Description of Internship :

The development and deployment of a CAPTCHA system to increase the security of a web-based application is the main emphasis of this internship opportunity.

I have gained useful knowledge in web application security throughout the internship and have learned about the difficulties in preventing automated assaults. I have the chance to use my programming and problem-solving abilities to create novel CAPTCHA methods that can successfully distinguish between humans and bots.

* Internship Activities :

Understanding the CAPTCHA's goal and creating a CAPTCHA service to deliver a CAPTCHA image and check user-entered CAPTCHA text are the major activities.

Got the chance to work on a real-world online application and improve its security by creating and putting in place a strong CAPTCHA system. I now have first-hand knowledge of testing methodologies, user interface integration, and online application security.

Activities Included:

1) Analysis and Research

2) Generation of CAPTCHA

3) Validation Method

4) Security Upgrades

5) Evaluation and Testing

6) Reporting and Documentation

* Approach / Methodology

Firstly we designed a login page.

Using java, we are implementing the CAPTCHA logic.

* Outcome / Conclusion

Created a login page with CAPTCHA functionality.

In conclusion, the internship's goal of developing a CAPTCHA system to increase the security of the web-based application was effectively attained. The project's results not only enhanced the application's security posture but also gave the intern invaluable experience in web application security, algorithm design, user interface integration, and testing procedures. The findings of the internship make a contribution to the field of online application security and emphasize the importance of putting in place effective CAPTCHA systems to prevent automated bot attacks.

* Enhancement Scope

A variety of colors can be used to create the CAPTCHA image.The characters in the input text box may be concealed or displayed as special characters while accepting input.