Summer Fellowship Report

On

UI/UX Development of YAKSH Website

Submitted by

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Under the guidance of

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Acknowledgment

It was a wonderful experience working as FOSSEE fellow from May 2018 to July 2018, at IIT Bombay. Interacting with people from all corners of the country gave me great exposure. I could discover my true potential as a professional. I believe, this exposure and lessons that I have learnt here will never come short for my career growth.
My task would not have been accomplished successfully without the contribution and collaboration of others. My sincere gratitude:

- To The Prof. Kannan M. Moudgalya, Department of Chemical Engineering, IIT Bombay), the PI of FOSSEE, for providing us the opportunity to do an internship within the organization.
- To The Prof. Prabhu Ramchandran, Deparatment of Aerospace Engineering, IIT Bombay our internship guide for his encouragement and guidance.
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- To the Project mentor Mr. Prathamesh Salunke for believing in my capability to complete the task in time. His open-mindedness and out-of-box thinking encouraged me to look for better ideas for solutions.
- To the Project guides Mr. P. Aditya and Mr. Mahesh Gudi for their continuious support throughout the internship. Without their help I couldn't have easily corrected my mistakes and learnt things. Their valauble time spent on teaching me things is unforgettable. And also to Graphic Designer, Mr. Kushal for his help and suggestions for website designing.
- To all our fellow colleagues, with whom I have completed the fellowship. We experienced great things together.

To all of you, I extend my deepest gratitude.

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Chapter 1

Introduction

Yaksh is an Online Test Interface for creating various courses and conducting online programming quizzes. It supports various programming languages like :- C, C++, Python and simple Bash. User can solve any questions by using these languages. Yaksh uses "test cases" to test the the implementations of the students. It also supports simple multiple choice questions and file uploads so that user can easily submit his code.

1.1 Vision

Making sure that every user has more lively and better experience while learning or testing their skills through YAKSH

1. Creating a new look i.e., UI and improving UX of the website on the Student's side.

2. (Personal goal) If time permits, improving UX and Changing UI accordingly on the Moderator's side too.

1.2 Approach

1. Detect Issues:

    - Is the user facing any inconvenience while performing any task on any page on the website?

2. Put forth ideas for solution

    - How can the issue be solved?
    - Is there a better way?
    - What more can be offered? (Add ons)

3. Look for better Tools

    - Upgrade to Bootstrap 4, jquery 3.3.1

- Using simple animations by animate.css and wow.js
- Writing custom css classes i.e., yakshcustom.css

4. Implement
    - Fork YAKSH website code from GitHub and implement the ideas

Chapter 2

Detected issues and relevant Solutions

These are the changes that are made to the YAKSH website on the Student's side, considering the issues and keeping in mind the goal to solve them.
(NOTE: I refers to the issue and C refers to the change)

2.1 Common elements on most of the pages

1. **Top Navigation Bar:**

   - **Login page:**
     I: No nav-bar
     C: Added ABOUT US, CONTACT links along with YAKSH logo that redirects to home page always.
   - **Registration page:**
     I: No nav-bar, home redirecting link is somewhere at the bottom of the page.
     C: Added Login Instead link along with YAKSH logo that redirects to home page always.
   - **Exam page:**
     I: No issue C: Improved alignment of nav-items
   - **Error pages and Confirmation/ Redirecting pages:**
     I: No nav-bar. User finds difficulty in going back to home page
     C: Added YAKSH Logo that redirects to home page.
   - **Other pages:**
     I: Too many user activities links on nav-bar, Seperate home link is missing.
     C: My profile, Change Password and Logout options are added under username dropdown, Added home link that redirects to Student's dashboard page.

2. **Footer:**

   - **Login Page:**
     I: No issue C: Added Fork us, FOSSEE website links along with Email id
   - **Other pages:**
     I: Missing contact mail id for queries
     C: Added the same

3. **Sidebar:**

   - **Videos page:**
     I: No proper mobile view, togglable icons
     C: Made side-bar mobile-responsive. It is collapsed by default in mobile view and on click, it expands. Changed togglable icons
   - **Exam page:**
     I: Missing info regarding what type of questions are present in exam. Syllabus links can redirect user to another page and can divert the user from quiz. Becomes an issue if the user doesn't understand how to get back to quiz page
     C: Added info regarding: List of Type of questions with question numbers refering to the type. Removed syllabus from sidebar

2.2 Page wise issues and solutions

1. **Login Page:**
   I: Missing website statistics
   C: Include: Stats like x number of students in x number of institutions across x states are using YAKSH, 'About Us' information from YAKSH-GitHub Docs, Change position of Sign up button

2. **Courses Dashboard Page**
   I: No proper display of categorised courses list,Missing syllabus/overview of course –Student cannot view syllabus unless he/she enrolls, Missing START course button –Student doesn't know he/she has to click on course name to start course
   C: Respective list of courses can be viewed under particular category,Change ENROLL button to START/RESUME course button once user has enrolled, Include DETAILS button to view course details page. Under details expansion include all the course related info on course details page like: What you'll learn, Instructor, Requirements and Side label containing extra info like: Start and end dates, Level, Perks

3. **Course Modules Page**
   I: Students cannot understand the lessons/quizes link and module link.
   C: Put all the module units status and answer paper link in collapse with a caret icon. Include Start/Resume button for each module.

4. **Quiz Page**
   I: Question and its related information like marks, question type is not properly arranged.
   C: Properly align all the question related information. Qusetion number and question can be to the left, type of question and marks can be to the right.

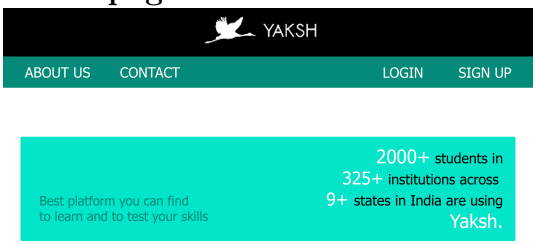
Chapter 3

Proposed Designs

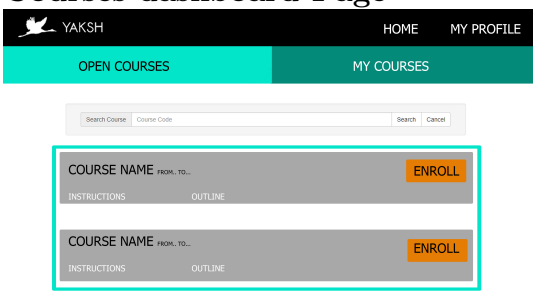
It is always a good practice to develop designs before going for implementation. These designs were made in photoshop which were presented for approval of YAKSH Team.

1. **Design 1:**

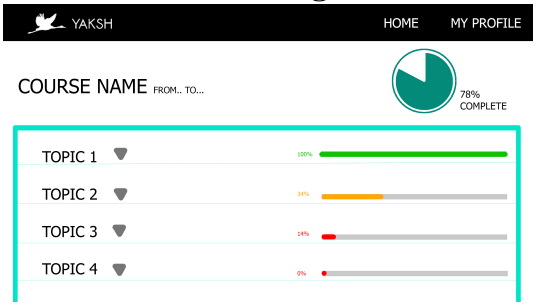
   - **Home page**



   - **Courses dashboard Page**

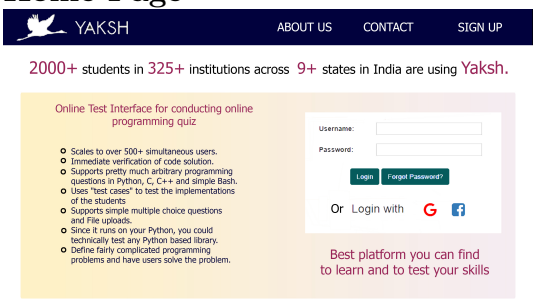


   - **Course Modules Page**

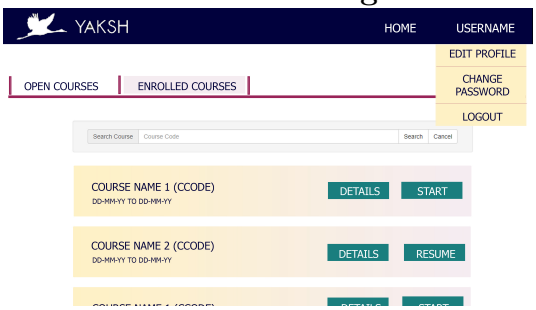


2. **Design 2:**

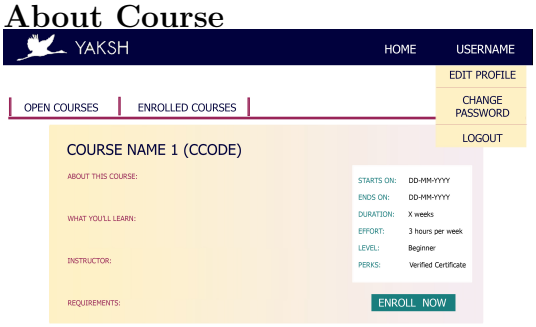
- **Home Page**



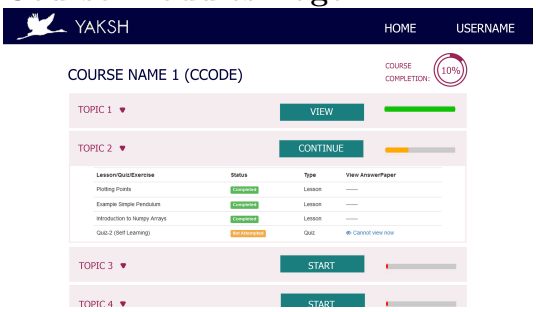
- **Courses Dashboard Page**



- **About Course**



- **Course Modules Page**



Chapter 4

Implementation

4.1 Used Tech Stack:

- Version Upgrades:
  Bootstrap v3 to v4
  jquery v1 to v3
- Additional files:
  popper.js (required by some of Bootstrap v4 classes)
  animate.css (for animations)
  wow.js (for making animations dynamic)
- Custom css written exclusively for YAKSH:
  yakshcustom.css
  Classes starting with prefix yaksh indicate classes belonging to this custom css.

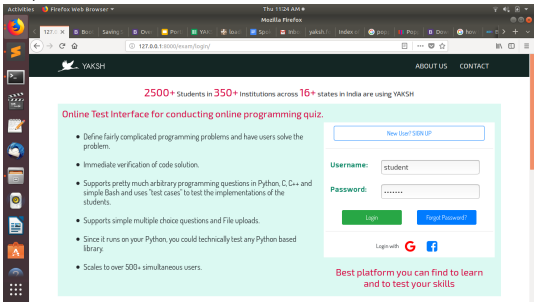
The previous YAKSH templates were written using Bootstrap v3. The new design of the website is implemented by changing almost 80 percentage of the code using html tags, css classes and django template tags. Use of JS and inline-css is mostly avoided.
All new nav-bars, sidebars, labels, footers are explicitly coded. Custom css classes from yakshcustom.css are used. Properly aligned elements helps the users avoid confusion and have better experience while using YAKSH.

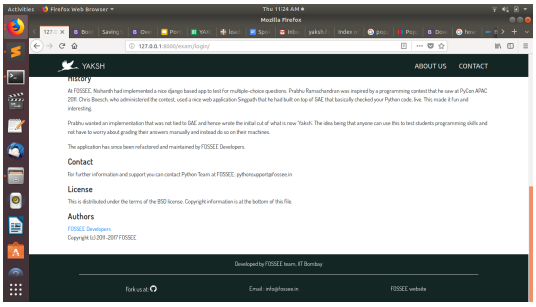
Mobile-view

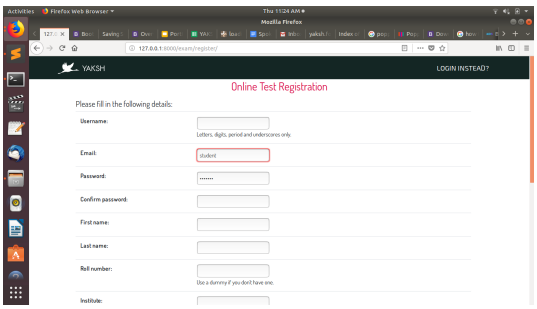
- The side navigation bars are collapsable in mobile-view making it convinient for the user to hide nav-bar and view other page elements on the entire screen.
- All the tables are horizontally scrollable in mobile-view

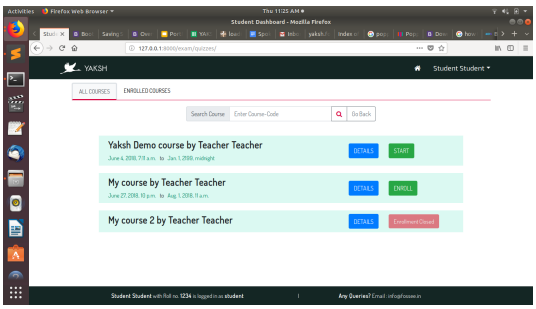
4.2 Final Product

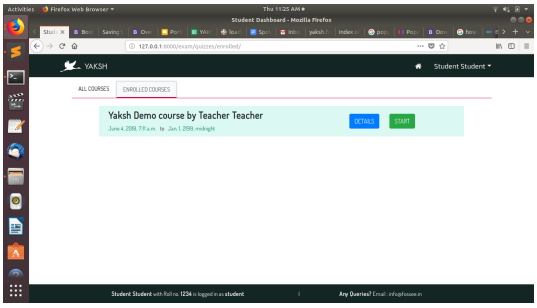
The following are the screenshots of the YAKSH website(student's side) with new UI/UX

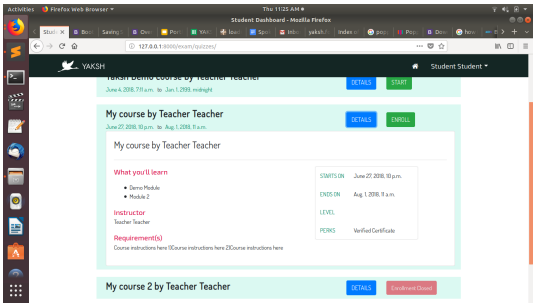


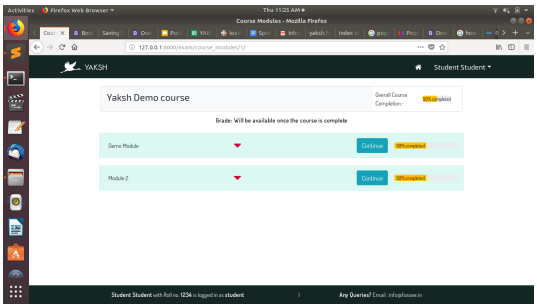


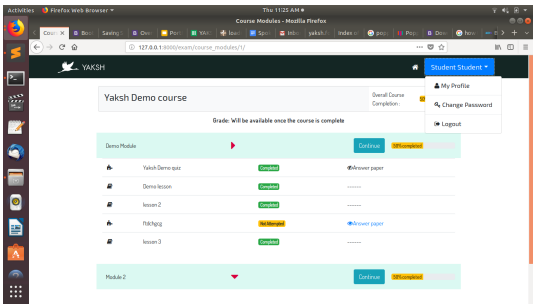


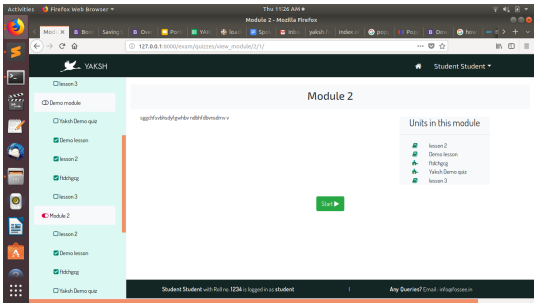


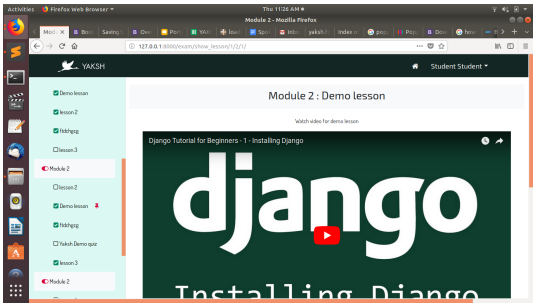


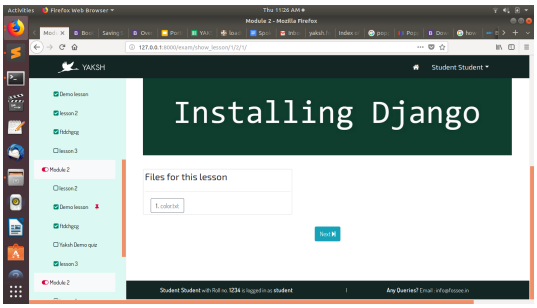


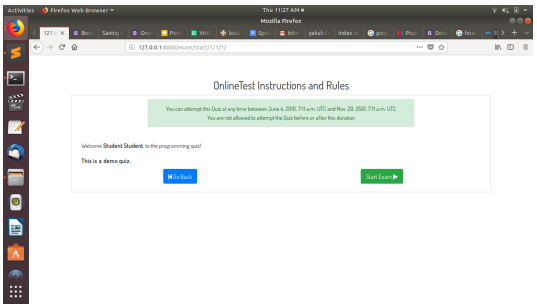


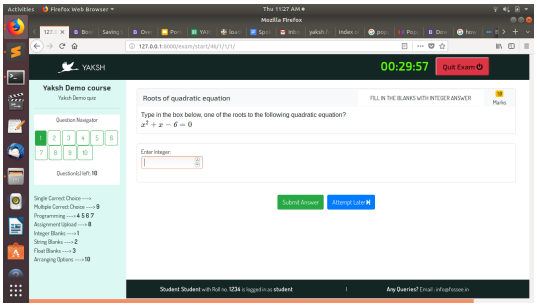


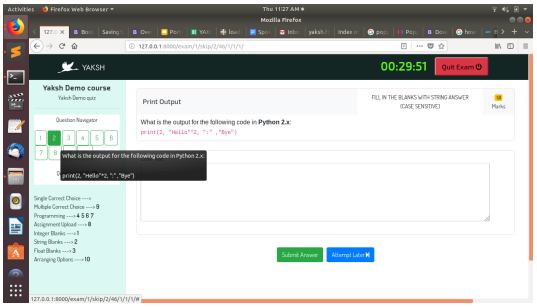

YAKSH
Module 2
Units in this module
Start

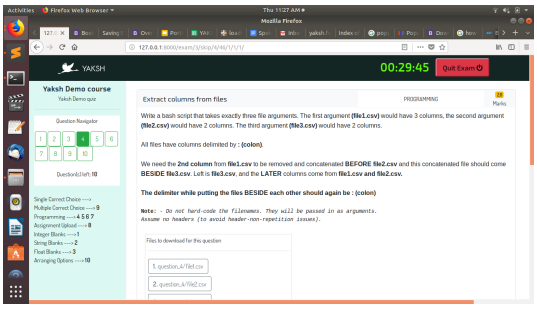

YAKSH
Module 2 : Demo lesson
Django Tutorial for Beginners - 1 - Installing Django
django
Installing Django

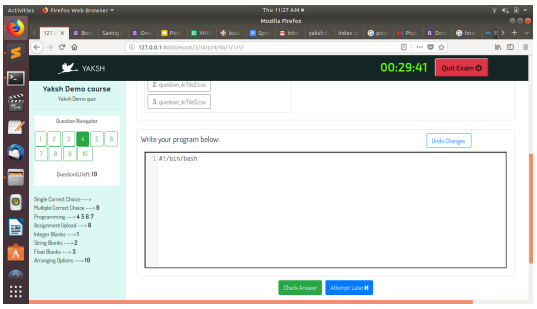

YAKSH
Installing Django
Files for this lesson
Next

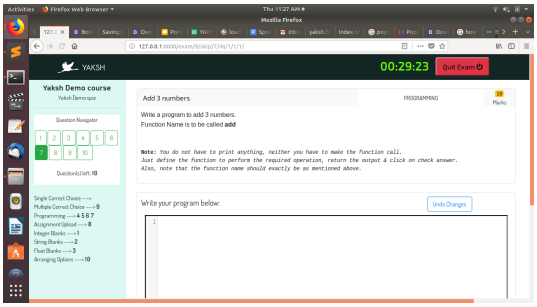

OnlineTest Instructions and Rules
Go Back
Start Exam

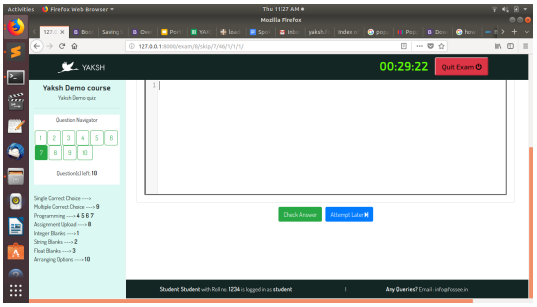

YAKSH
00:29:57
Quit Exam
Yaksh Demo course
Roots of quadratic equation
Submit Answer
Attempt Later

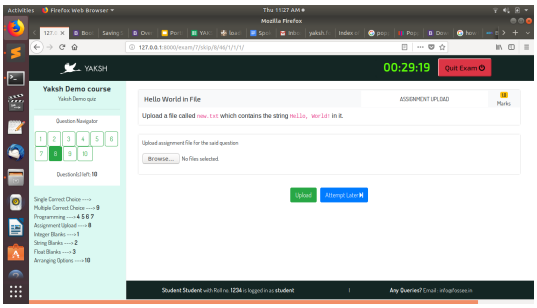

YAKSH
00:29:51
Quit Exam
Yaksh Demo course
Print Output
Submit Answer
Attempt Later

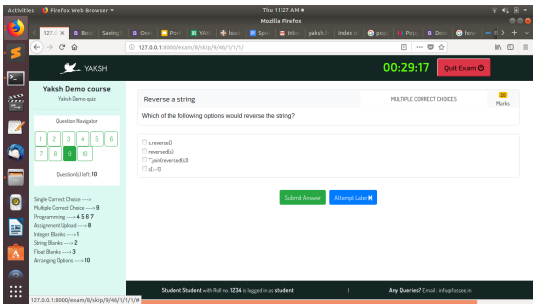

YAKSH
00:29:45
Quit Exam
Yaksh Demo course
Extract columns from files

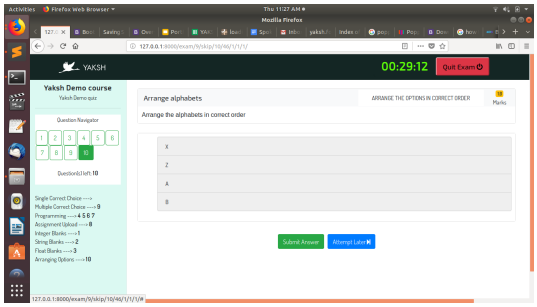

YAKSH
00:29:41
Quit Exam
Yaksh Demo course
Write your program below:
Undo Changes
Check Answer
Attempt Later


YAKSH
00:29:23
Quit Exam
Yaksh Demo course
Add 3 numbers
PROGRAMMING
Write a program to add 3 numbers.
Function Name is to be called add
Note: You do not have to print anything, neither you have to make the function call.
Just define the function to perform the required operation, return the output & click on check answer.
Also, note that the function name should exactly be as mentioned above.
Write your program below:
Undo Changes


YAKSH
00:29:22
Quit Exam
Yaksh Demo course
Check Answer
Attempt Later


YAKSH
00:29:19
Quit Exam
Yaksh Demo course
Hello World in File
ASSIGNMENT UPLOAD
Upload a file called new.txt which contains the string Hello, World! in it.
Browse...
No Files selected.
Upload
Attempt Later


YAKSH
00:29:17
Quit Exam
Yaksh Demo course
Reverse a string
MULTIPLE CORRECT CHOICES
Which of the following options would reverse the string?
Submit Answer
Attempt Later


YAKSH
00:29:12
Quit Exam
Yaksh Demo course
Arrange alphabets
ARRANGE THE OPTIONS IN CORRECT ORDER
Arrange the alphabets in correct order
Submit Answer
Attempt Later

Chapter 5

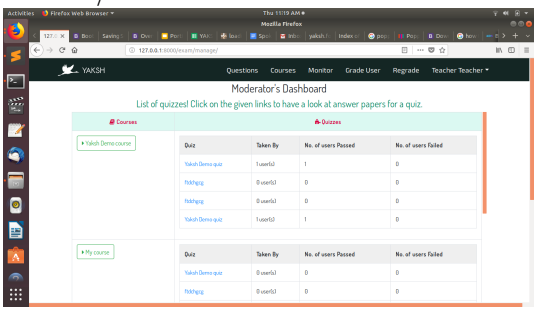
Additional Work

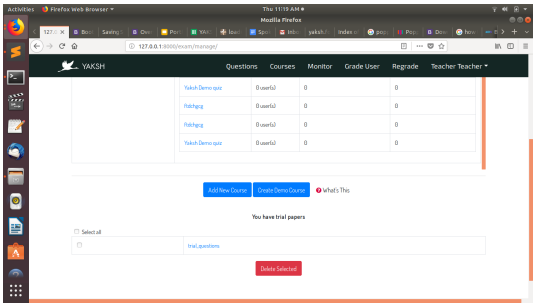
Upon successful completion of improving UI and UX of YAKSH website, I decided to change the moderator's side UI too. Top and side navigation bars, footers are explicitly coded. Remaining code is only modified with new html tags and css classes (Bootstrap and custom).
Long tables are now made to fit in fixed height and are verticaly scrollable. User need not scroll the entire page to reach to other buttons/ elements on the page.

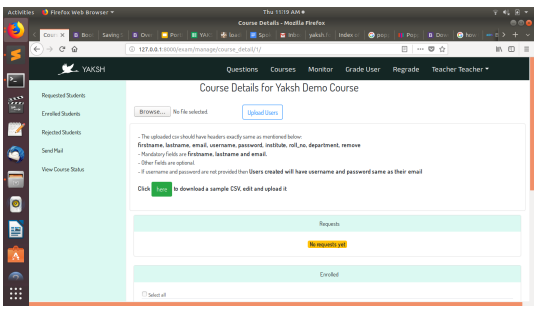
Mobile-view

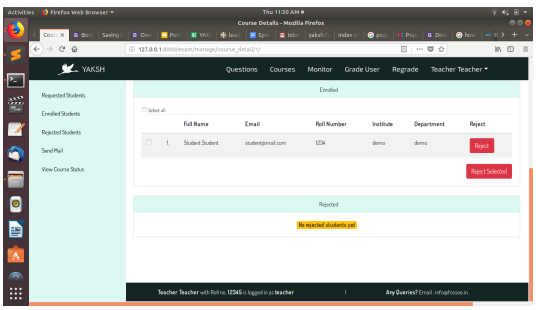
- The side navigation bars are collapsable in mobile-view making it convinient for the user to hide nav-bar and view other page elements on the entire screen.
- All the tables are horizontally scrollable in mobile-view.

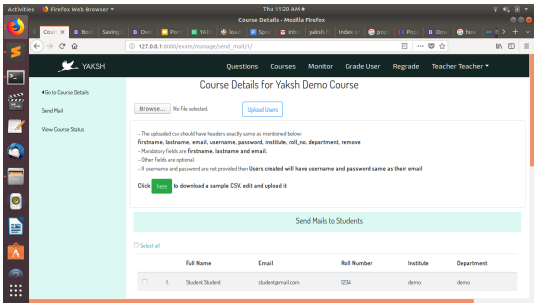
The following are the screenshots of the YAKSH website(Moderator's side) with new UI/UX

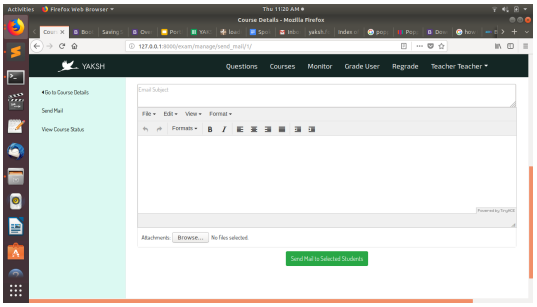


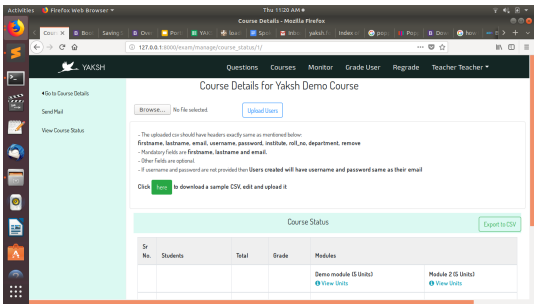


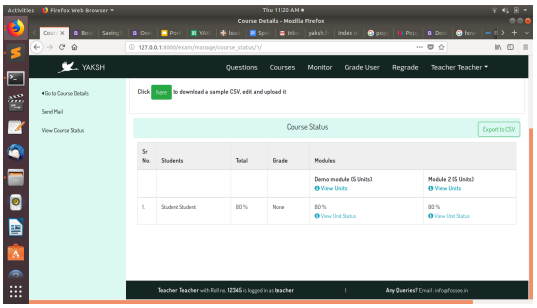


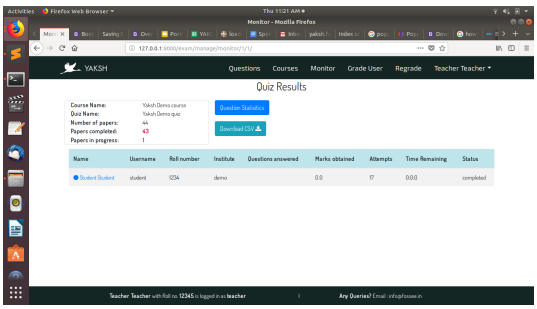


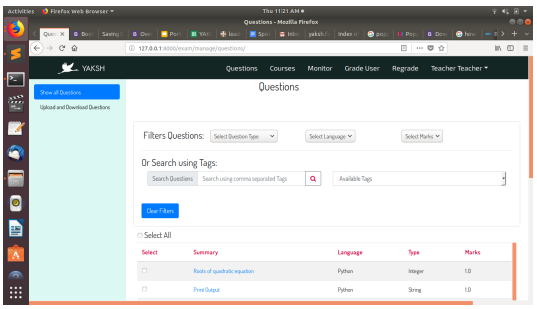

YAKSH
Questions Courses Monitor Grade User Regrade Teacher Teacher
Course Details for Yaksh Demo Course
Upload Users
Send Mails to Students

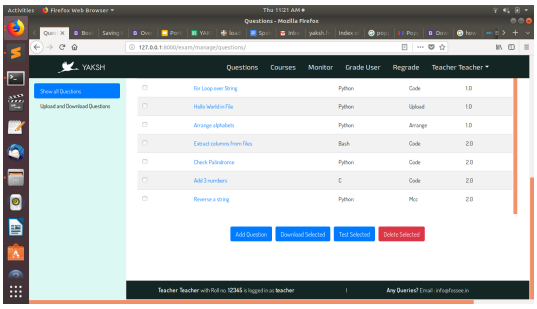

YAKSH
Questions Courses Monitor Grade User Regrade Teacher Teacher
Send Mail to Selected Students

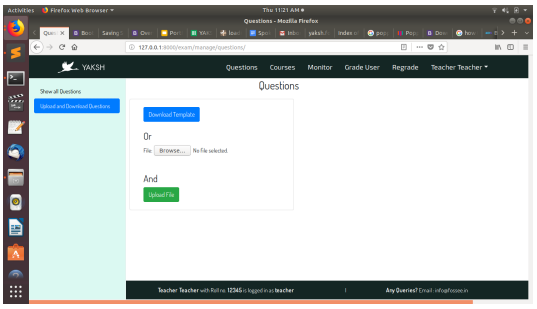

YAKSH
Questions Courses Monitor Grade User Regrade Teacher Teacher
Course Details for Yaksh Demo Course
Upload Users
Course Status
Export to CSV

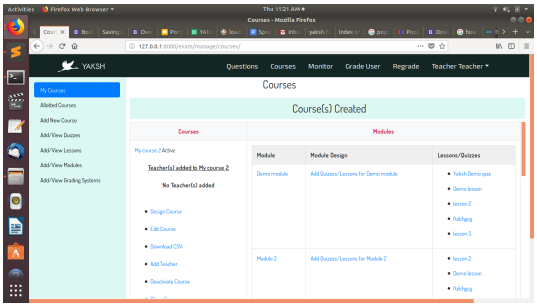

YAKSH
Questions Courses Monitor Grade User Regrade Teacher Teacher
Course Status
Export to CSV

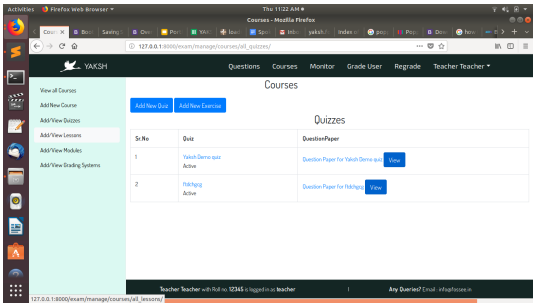

YAKSH
Questions Courses Monitor Grade User Regrade Teacher Teacher
Quiz Results
Question Statistics
Download CSV

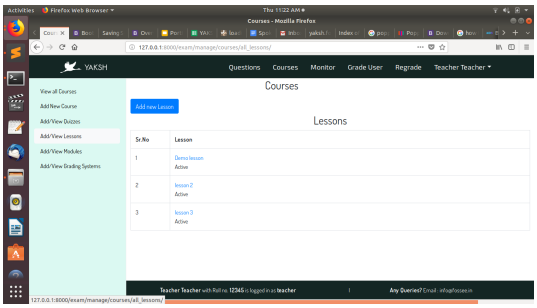

YAKSH
Questions Courses Monitor Grade User Regrade Teacher Teacher
Questions
Filters Questions:
Or Search using Tags:
Clear Filters
Select All


YAKSH
Questions Courses Monitor Grade User Regrade Teacher Teacher
Add Question
Download Selected
Test Selected
Delete Selected


YAKSH
Questions Courses Monitor Grade User Regrade Teacher Teacher
Questions
Download Template
Or
And
Upload File


YAKSH
Questions
Courses
Monitor
Grade User
Regrade
Teacher Teacher
Courses
Course(s) Created


YAKSH
Courses
Quizzes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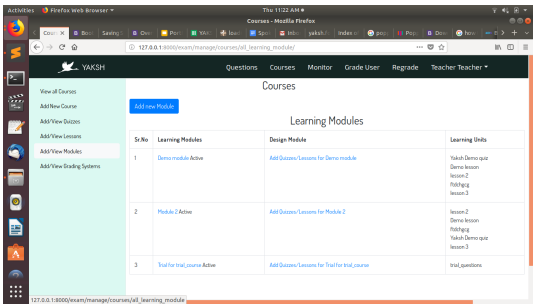
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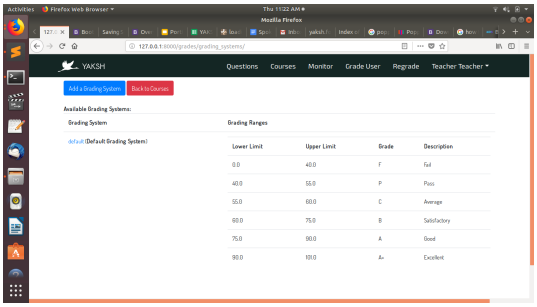
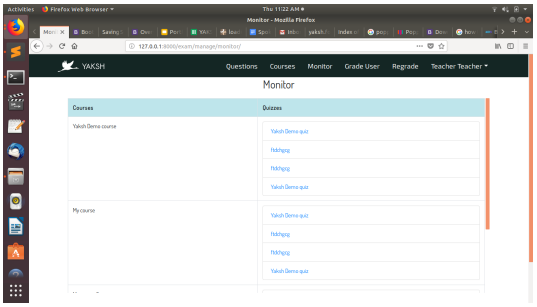
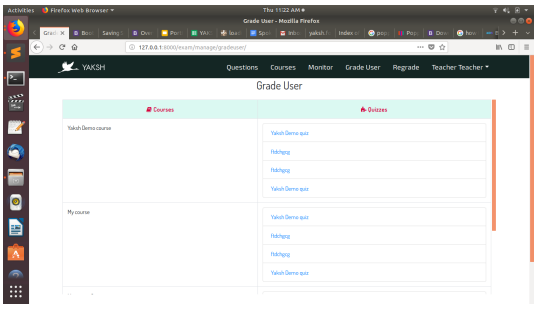
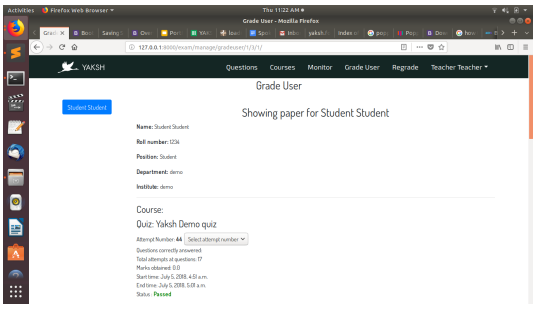
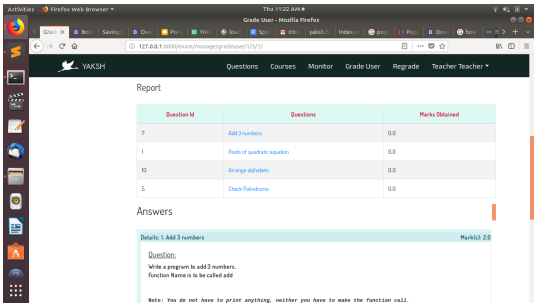
Learning Modules

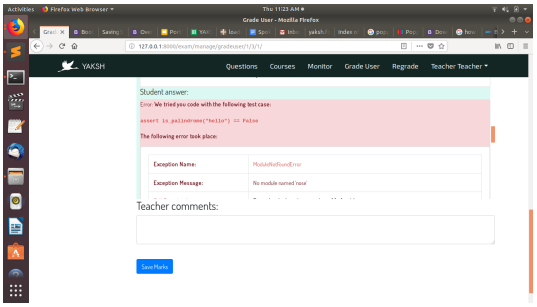

YAKSH
Grading Systems

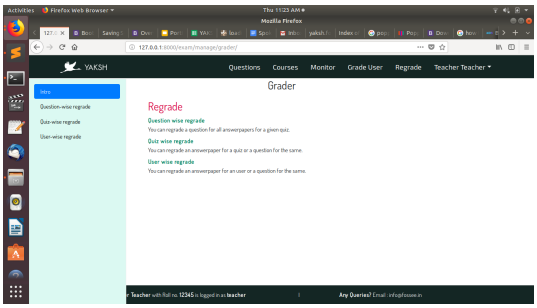

YAKSH
Monitor

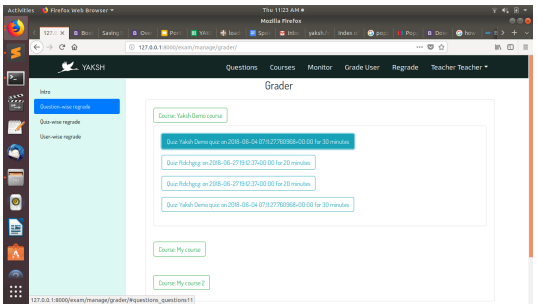

YAKSH
Grade User

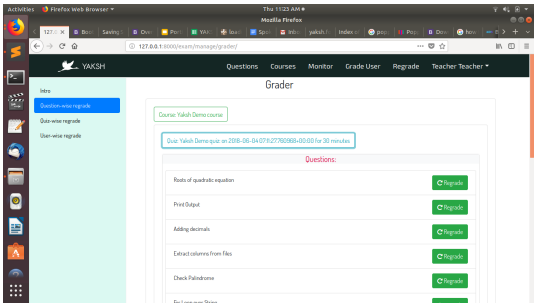

YAKSH
Grade User
Showing paper for Student Student

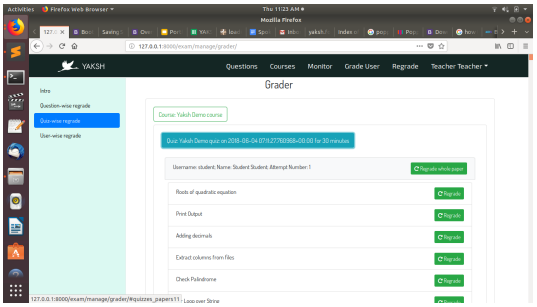

YAKSH
Questions
Courses
Monitor
Grade User
Regrade
Teacher Teacher
Report
Question Id
Questions
Marks Obtained
Answers
Question:
Write a program to add 3 numbers.
function Name is to be called add

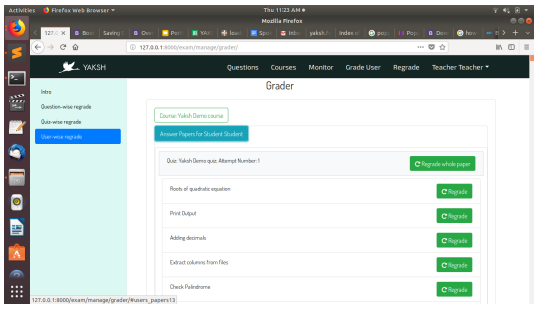

YAKSH
Questions
Courses
Monitor
Grade User
Regrade
Teacher Teacher
Student answer:
Exception Name:
Exception Message:
Teacher comments:
Save Marks


YAKSH
Questions
Courses
Monitor
Grader
Regrade
Question wise regrade
Quiz wise regrade
User wise regrade


YAKSH
Questions
Courses
Monitor
Grade User
Regrade
Teacher Teacher
Grader
Course: Yaksh Demo course
Course: My course
Course: My course 2


YAKSH
Questions
Courses
Monitor
Grade User
Regrade
Teacher Teacher
Grader
Course: Yaksh Demo course
Questions:
Regrade


YAKSH
Questions
Courses
Monitor
Grade User
Regrade
Teacher Teacher
Grader
Course: Yaksh Demo course
Regrade whole paper
Regrade


YAKSH
Questions
Courses
Monitor
Grade User
Regrade
Teacher Teacher
Grader
Course: Yaksh Demo course
Answer Papers for Student Student
Regrade whole paper
Regrade

Reference

- For Bootstrap Documentation- https://getbootstrap.com/docs/4.1/
- For adding animations- https://github.com/matthieua/WOW