

# Work Flow Analysis and Performance based Rewarding System

Monish Paliseti<sup>1</sup>, Priyanka Bala<sup>2</sup>, Yashwant Sai<sup>3</sup>, Meghanath Reddy<sup>4</sup>, Dr.Venkata Ramana.M<sup>5</sup>

<sup>1,2,3,4,5</sup> Department of Computer Science and Engineering, GITAM University, Visakhapatnam, Andhra Pradesh, India.

Date of Submission: 05-04-2023

Date of Acceptance: 15-04-2023

**ABSTRACT** -- The Work Flow Analysis is a system or application used to manage projects in a company, check status of each employee, assign different tasks or works to employees, showing progress, etc. The current Project is an upgrade of the existing system with a new functionality of rewarding. This feature is added so that the members can be rewarded for completion of tasks based on the difficulty of the task. This rewarding is solely competitive based, i.e., the employees who perform well or complete most number of tasks are given rewards. So for this purpose, each team member has some points associated (initially 0 points), and gradually keeps on increasing by completing various tasks. Finally, the ones with the most number of points will be rewarded. The rewarding feature increases work efficiency of employees and reduces time taken to complete the project.

**Indexed Terms:** Work Flow Analysis, Rewarding, Tasks, Points.

## I. INTRODUCTION

The process of planning, organising, leading, monitoring, and regulating project resources inside an organisation is referred to as work flow analysis. In order to benefit the business and the client, management has a considerably wider scope for the efficient use of resources and tracking of progress. In order to monitor stakeholder requirements and overall project progress in complex project contexts, effective project governance rules are required. Due to inconsistent management practices, efforts are duplicated, which eventually has an impact on both the project's goals and the organization's overall goals.

Finding a software application that is compatible with business project management standards and practices is a challenge. This type of

software will boost a project's success, because project management is all about making projects and companies successful. Companies concentrate more on facilitating quick access to information, developing efficient business procedures with clients, and fostering teamwork as the basis for innovation. Most businesses rely on information technology to boost operational effectiveness and productivity.

Data Visualization comes into picture, when you want to get overview of huge amounts of data that is present in the database of a system. It helps all types of users to analyse the data and also to make predictions on the future trend.

**Keywords:** Project Management; Project Monitoring; Project Collaboration, Project Governance, Data Visualization

## II. LITERATURE SURVEY

[1]. In the research paper titled "Web Based Project Management System" by Anne-Mai Adamssoo, proposed a proper software for developing and managing projects, mainly in web development based companies, is discussed. Manually recording the status of the employees and receiving inputs from them is quite hectic process, so there is a need of separate web based project management system which helps in handling projects easily. The project is built on the web or internet but not as standalone, so that any employee can access it from any remote place. Methodology adapted is integrating TRAC application, for making it possible to meet the project goals. The only limitation is, this project is confined to only software based projects, but not with other domains.

[2]. In the research paper titled "Project Management System" by Sanket Kale, Aniket Shewale, Premsagar J. Sarang, Prasad S. Pawar and Safia Sadruddin, proposed a methodology for managing the final year projects in a college. This

project has automated the process of assigning project guides and Project Co-ordinators to the final year students and also giving the final year students tasks/works related to their project. Also it has included a way, so that co-ordinator can assign marks to the students. The project also consisted of Progress Chart, which is implemented using WBS(Work Breakdown Structures). The methodology followed, is usage of hashmap for storing the details.

[3]. In the research paper titled "Online Task Management System" by GRISHMA HEDAOO, PRIYANKA THOKE, RAKSHA TABHANE, SHUBHAM MESHRAM, SWAPNIL KUMBHALKAR and PROF. MUKESH BARAPATRE, illustrated project that provides an online platform to carry out regular departmental task and communicate task details to a specific user. Utilizing an Online Task Management system entails locating, obtaining, allocating and monitoring all resources. The methodologies adapted here are, usage of Data Program and Client - Server Architecture.

[4]. In the research paper titled "Web Based Project Collaboration, Monitoring and Management System" by S. T. Nandasara and Pradeepa S Senewiratna G A D, discussed building a project management system for all kinds of software projects, not sticking to just one domain. It mentioned, how the success of a project is highly relying on project managers, team leaders, collaborations, developers, designers, clients.etc. This project covers all aspects of project management process like document management, resource management. The methodology adapted here is Evolutionary Prototyping methodology.

### III. EXISTING SYSTEM

Although there are several team management and task management systems on the market, we have found that one aspect, the idea of paying employees for finished work, is lacking. We noticed that it is unable to record the prizes that must be offered to team members or employees. Existing system is keeping track of the progress of the employees, tasks, status of project .etc. But it does not have the feature of rewarding the employees based on their performances during the course of the project. Some of the existing systems do not have separate dashboards for different entities, like team member, team leader, manager. The present systems are lacking better data representation and availability. We noticed that these types of systems consume time when the

user wants to go through the data.

### IV. PROPOSED SYSTEM

With the help of the suggested system, we can manage a project, keep track of each team member's work, and pay them according to how well they do, how much work is required, and how quickly they complete it. In this system, each member starts off with 0 points, and over time, points and awards are added based on how well they perform. Once a task has been completed, the member is given credit for the various points assigned to it based on its importance and difficulty. We can easily manage the work details as well as access data easily, like addition of Progress bar, Pie charts and Bar graph which helps the users to easily understand the progress of the project and reflect on their performance and improve themselves. The project employees can see the leaderboard which consists of all the other employees and their points, this helps in increasing competitiveness.

#### 4.1 Team Leader Module:

1. Login: The Team Leader Logins into the system, by giving the credentials.
2. Create Project: Team Leader can create projects.
3. End Project: Team Leader can end projects.
4. Add Tasks: Team Leader can add tasks and modify tasks.
5. View Task Status: Team Leader can view the status of the task in progress.
6. Approve Tasks: Team Leader can approve tasks.
7. Add Team Members: Team leaders can add members.
8. Reject Tasks: Team Leader can now reject tasks.
9. Progress Bar: Team Leader can now view the progress of the project that the team is working on with the help of progress bar.

#### 4.2 Team Member Module:

1. Login: The Team Member Logins into the system, by giving the credentials.
2. Team Assigned: Team Members can check which team they are assigned to.
3. Send Task For Approval: Team Members send the completed task for approval.
4. Pie Charts: Added Two Pie Charts for the team member dashboard, which provides high order description of:
  - a. The progress of the tasks (i.e., How many tasks are completed or pending or rejected)
  - b. The performance of the team member, along with their calculated efficiency.
5. Leaderboard: Each team member of any team

can now view a leaderboard , which shows all the team member profiles of all teams , along with their points from highest to lowest .

6. Change Password: While at the time of logging in, if a team member forgets password,he/she can change password , by providing OTP verification, where the OTP is sent to his/her registered mobile number. This feature is only available for team members only.

**4.3 Admin Module:**

1. Login: The Admin Logins into the system , by giving the credentials.

2. View Dashboard: The Admin can view the dashboard.

3. Create Team Leader: Admin can create new Team Leaders.

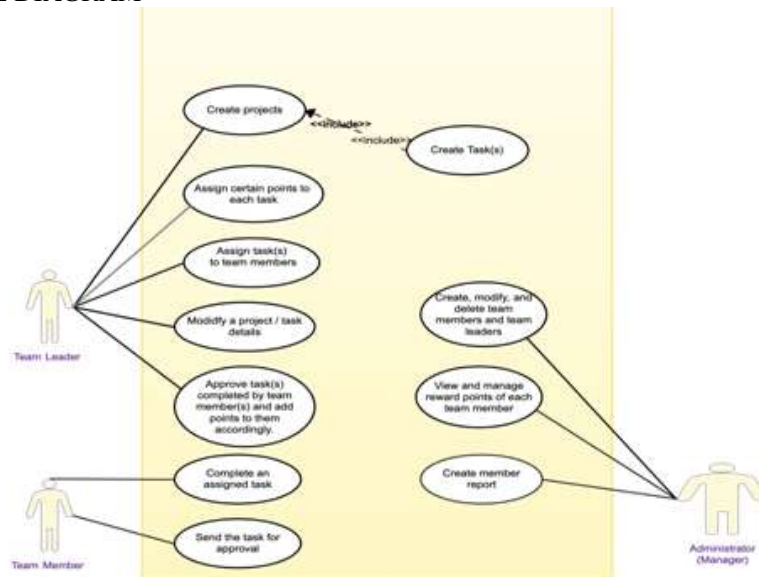
4. Update Team Leader: Admin can make changes to Team Leaders information.

5. Update Team Member: Admin can make changes to Team Members information.

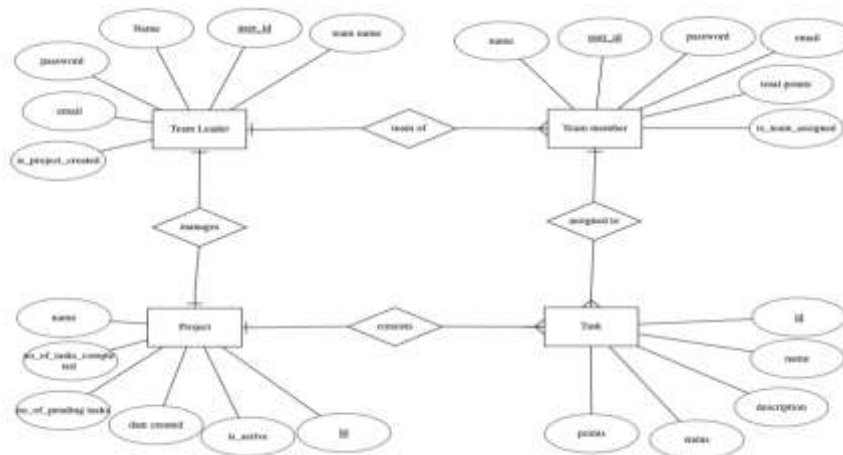
6. Bar Graph: A Bar Graph was added in the Manager dashboard , which shows the progress of all teams available,with the value of progress on Y-axis , and each bar defining each team. The graph will also get updated , if new teams are added.

**V. SYSTEM DESIGN**

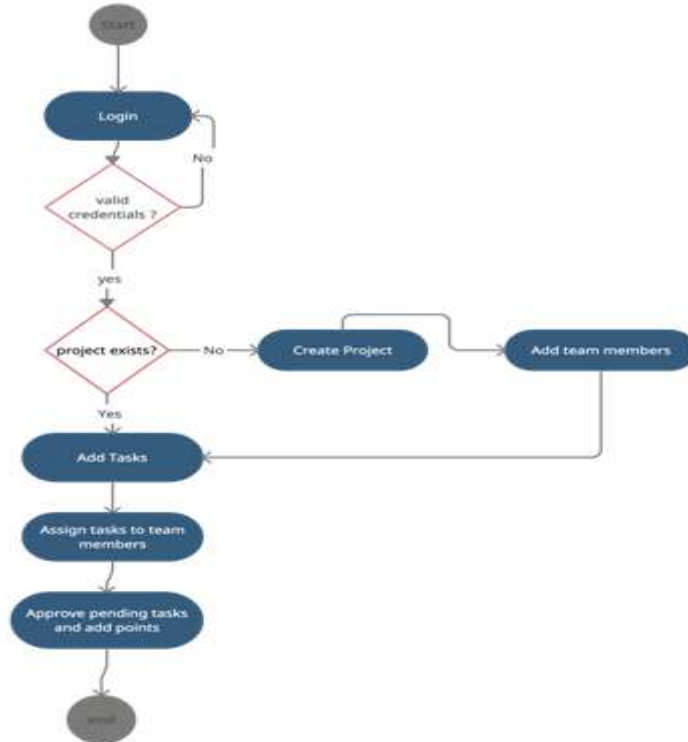
1. USE CASE DIAGRAM



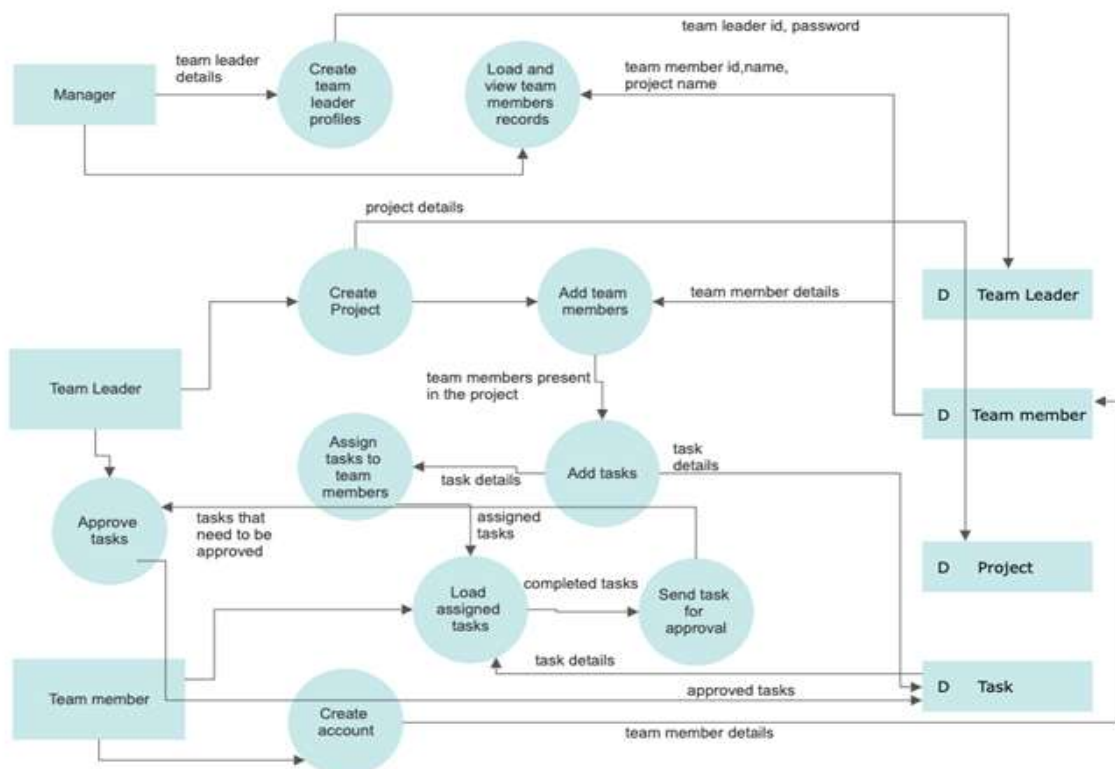
2. ER DIAGRAM



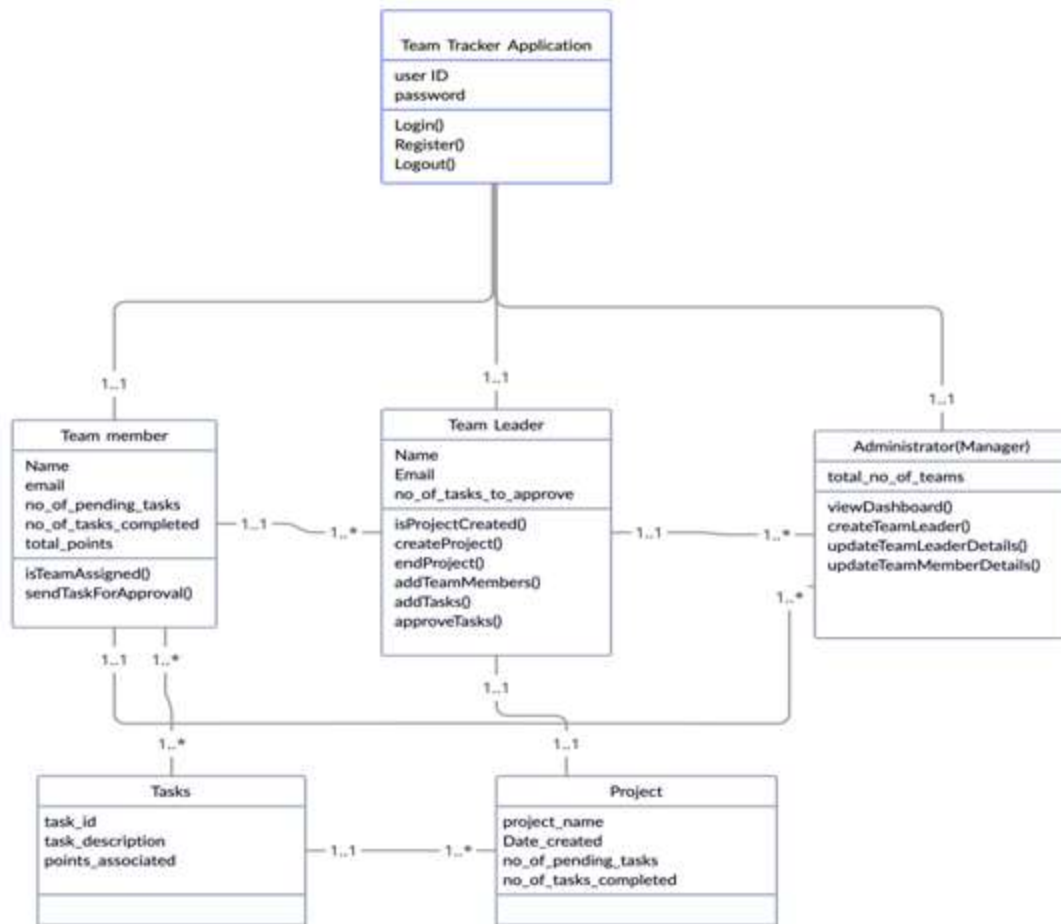
3. ACTIVITY DIAGRAM FOR TEAM LEADER



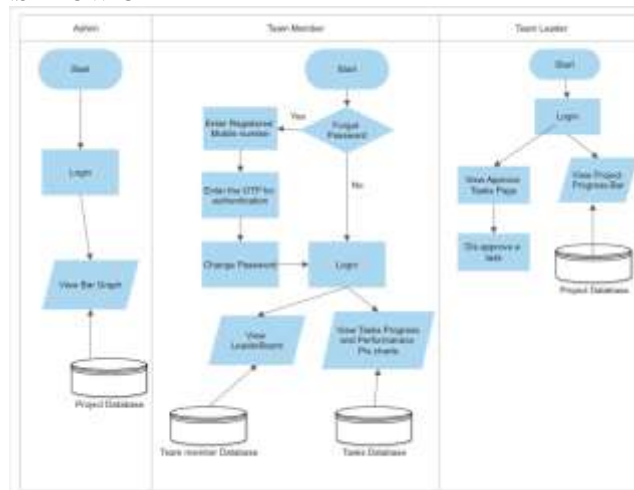
4. DATAFLOW DIAGRAM(LEVEL 2)



5. CLASS DIAGRAM



DATA VISUALIZATIONS FLOW CHART



Every user role , needs to log in first i.e.. admin , team leader , team member. Admin can view the bar graph of progresses of all teams present , where the data is coming from the

Projects database. Team member can change his/her password by OTP authentication , views the leaderboard containing all other team members along with their points in highest to lowest order

where the data is taken from team member database and views tasks progress and performance pie charts where data is taken from tasks database. Team leader can disapprove a task , which was sent for approval by team member and can also view project progress bar ,where the data comes from project database.

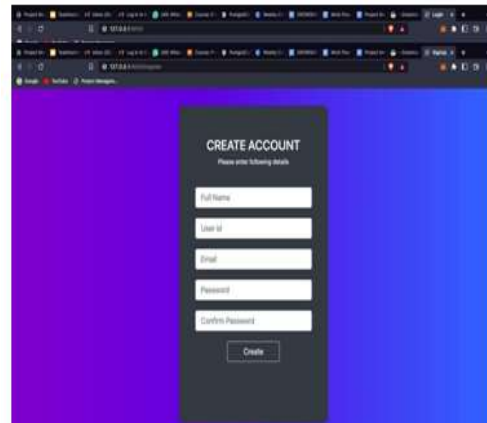
## VI. TECHNOLOGIES USED

- Python :The Programming Language used to code our whole project.
- Django : Python Backend Framework to create a server for our application
- Virtual Studio Code : It is the IDE (Intelligent Development Environment) we used to write and edit code.
- HTML : Markup language used to define structure for our web pages.
- CSS : We used this to add different styles to our web pages.
- JavaScript: Used javascript to write some scripts that renders data dynamically.
- PostgreSQL : The Relational database we used to store the information.
- Terminal : Application we used to start the server.
- Browser : Application we used to run and view our project.
- ChartJs: It is a Python Package to display charts
- Twilio - API : The API service we used to send sms messages to mobile numbers.
- Heroku : A cloud PAAS service to host web applications.

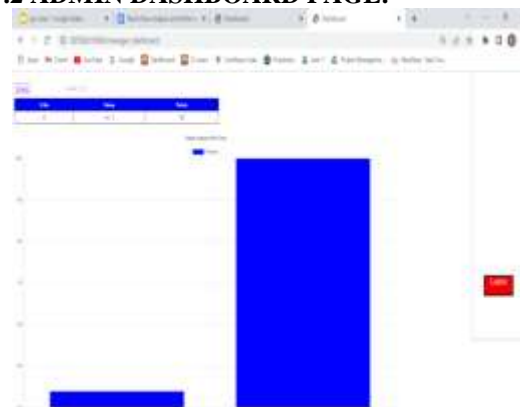
## VII. RESULTS

### 7.1 LOGIN AND REGISTER PAGE:

Initially The Login Page would appear , when we open our application. No matter of what may be the user i.e.. team leader , team member and admin needs to login through the same common page. Team member can register his/her account into the application

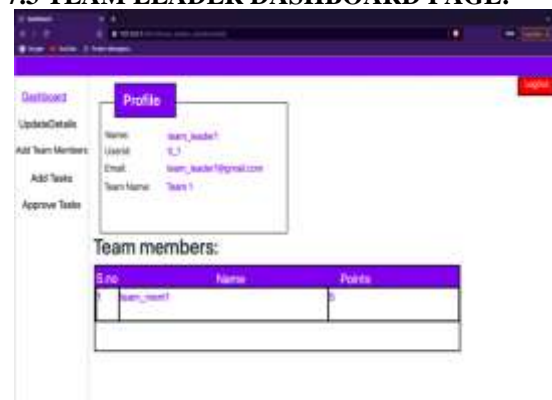


### 7.2 ADMIN DASHBOARD PAGE:



Admin can view all the team details , create a new team leader , view team leader and team member details and all teams progresses through bar graph.

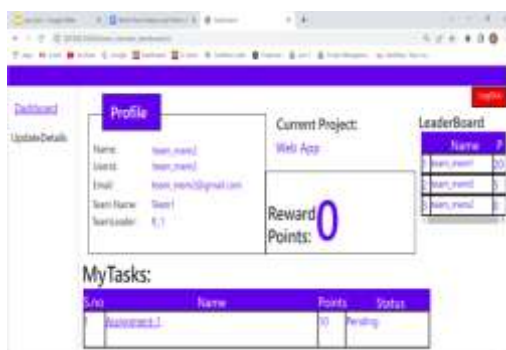
### 7.3 TEAM LEADER DASHBOARD PAGE:



Teamleader can view team mates of his/her team , see the project progress , see the pending and completed tasks of the project , update his/her details , see his /her profile , view project details and end a project , add a team member into the team , assign tasks to team members and approve/disapprove the tasks submitted by the team

mates.

#### 7.4 TEAM MEMBER DASHBOARD PAGE:



Team member can view his/her profile , update his/her details , view tasks which are pending or needs to be approved or completed , see the total points , view the tasks and details of them, send task for approval , see project details and view leaderboard.

### VIII. CONCLUSION AND FUTURE SCOPE

The Work Flow Analysis and Performance based Rewarding System is a extremely useful application that is widely applicable. It is superior to the conventional system in many ways. By including a rewarding feature, you can increase employee motivation and help them get respect from other team members. Utilizing this tool helps the organisation manage its tasks with less effort and wasted time. The productivity of the company also increases as a result.

Data visualisation features are added , these help in reducing the time taken for the employees , team leaders and managers in knowing the progress of the project.

#### Future Scope:

Some of the future modifications would be adding features concerned with security and protection. Some of them would be storing the passwords in hash encrypted formats , also providing change in password functionality with email authentication. Other feature that would be good to add is , providing a way where team member can redeem the points for gift cards , coupons ...etc.

### IX. REFERENCES

- [1]. S. T. Nandasara, Pradeepa S Senewiratna G A D , “Web Based Project

Collaboration, Monitoring and Management System”, Institute of Electrical and Electronics Engineers (IEEE), DOI: 10.1109/ICTER.2014.7083888 (2014)

- [2]. Anne-Mai Aadamsoo, “WEB BASED PROJECT MANAGEMENT SYSTEM”, Connecting Repositories (core.ac.uk) , 2010
- [3]. Sanket Kale, Aniket Shewale, Premsagar J. Sarang, Prasad S.Pawar, Safia Sadruddin, “PROJECT MANAGEMENT SYSTEM”, International journal of Engineering development and research (IJEDR), Volume:5,Issue:2,ISSN:2321-9939 (2017)
- [4]. Victoria Bellotti, Brinda Dalal, Nathaniel Good, Peter Flynn , Daniel G. Bobrow and Nicolas Ducheneaut , “What a To-Do: Studies of Task Management Towards the Design of a Personal Task List Manager ”, Association for Computing Machinery (ACM) , Volume:6,Number:1,DOI: 10.1145/985692.985785 (2004)
- [5]. GRISHMA HEDAOO , PRIYANKA THOKE , RAKSHA TABHANE , SHUBHAM MESHRAM, SWAPNIL KUMBHALKAR, PROF. MUKESH BARAPATRE, “Online Task Management System ”,Iconic Research And Engineering Journals (IRE) , Volume: 2 ,Issue:5,ISSN:2456-8880, (2018)