# EDUCARE
# FINAL PROJECT DOCUMENTATION


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**CHANGES MADE IN OUR PROJECT DELIVERABLES:**

1. **Project Estimation Document**: We made a few changed in the User Profile page description and justification to accommodate the features of editing and deleting posts. Earlier, we had thought about deleting a post in some other way that was cumbersome. Also, the 'Edit' feature was less defined then. Changes have also been made to the justifications of Post Edit page to accommodate the above changes. The Networking module details have been changed to make its description more clear and defined.
2. **Risk Management Plan Document:** This document has been edited to bear justifications for choosing the probability, potential delay and potential cost of each risk mentioned in the document.
3. **Project Management Plan:** This document has been completely revamped to properly define the activities, milestones and deliverables in our application. The Gantt chart and team member activities have been changed accordingly.

**WORK DONE ON OUR PROJECT DELIVERABLES:**

1. **Project Estimation Document:** We sat together to brainstorm the various use cases of the application to come up with the list of screens, reports and custom modules. We had a discussion featuring one team member acting as the customer and was questioned on the requirements from a customer's point of you. This helped us in coming up with a rough structure of the application and also helped us in deciding and justifying the complexity for each of its components. From the number of object points, it was not very difficult to bring up the total schedule estimation. In case of conflict in ideas, we had a vote where the opinion of the majority won.
2. **Risk Management Plan Document:** We sat down together to brainstorm on the list of risks that may be applicable for our application. Once we listed down the probable risks we had to categorize them into Core Risks, Show stoppers and Other Risks. It was a challenge to decide on the mitigation, contingency and transition indicators but we sat together, discussed and selected the best justifications brought up during our discussions. Decisions on probability, potential cost and delay was also another big challenge where we had to go through all the thoughts and justifications with all team members and decide on the best matching justifications. In case of conflict in ideas, we had a vote where the opinion of the majority won.
3. **Project Management Plan:** We sat down together and using the project estimation document, we tried to decide activities for each screen, report and custom module and came up with the possible set of activities. We considered major finished screens as milestones and parts of our application that we considered to be major features as deliverables. We worked on the Gantt chart together, using our discussions based on the decided activities, milestones and deliverables. From Gantt chart, we decided on the allocation of team members and assigned activities based on each team members' technical expertise. Tools were selected based on their features and our proficiency in using them. We arranged ourselves in activities we are best familiar with and decided to hire remaining members based on remaining activities.

# PROJECT ESTIMATION

## PROJECT DESCRIPTION:

The project consists of a website portal called Educare. The users of the website are usually students, professors and organizations. The users (students, professors, organizations) are required to sign up to use the application. While signing up, they are asked to fill out various details that constitute the profile (including contact information). Once the profile is set up, the user's home page is displayed, which contains the user profile information (that can be edited any time).
The application can be used for the following purposes:

1. Students seeking advisors according to research interest
2. Students seeking research work opportunities
3. Students seeking scholarship/funding
4. Professors seeking students for RA/TA/Hourly positions
5. Professors seeking students for voluntary research work
6. Organizations seeking people (students, professors) for research work

Account settings can be customized according to the user's wish. The user can submit a post where it would be required to fill a form having keywords related to research interest, purpose of the post, position interested in (RA/TA/Hourly position in case of students) and other information. The information would get stored in a central repository. Existing posts can also be edited. If users want to search for potential posts that might interest them, they can go to the 'Potential Matches' page where they can use the available filters and text boxes to search for relevant posts. There is also a 'notifications and messages' page where the user gets all the notifications and messages from other users (students, professors, organizations) resulting in probable collaborations. The main logic of the website revolves around two modules: the network that takes care of all communication through posts and messages, and a search engine which enables the user to narrow down the list of posts according to interest. There are pages like 'About Us', 'Contact Us' and 'Help/FAQ' included to help the users in times of need.

# OBJECT POINT ANALYSIS:

## SCREENS:

| Sr. No | Screen Name | Description | Complexity | Justification | Object Points |
|---|---|---|---|---|---|
| 1. | Registration Page | This page allows new users to register and create their profile. | Simple | Involves collection and storage of data entered by new user. Hence the complexity is Simple. | 1 |
| 2. | Login Page | This page is for existing users to log into their account using their username and password. | Simple | Involves authentication of user credentials and navigation to their respective profile. Hence the complexity is Simple. | 1 |
| 3. | User Profile Page | This page is for viewing the logged in user's profile information. Also, the user can edit his/her profile information. | Moderate | Involves retrieval and display of user information from the Database. The editing of information happens in the same page in real-time. It also contains all the posts that a user has posted till date. To edit any existing post, the user has to click on 'Edit' button next to each post. To delete any existing post, the user can click on 'Delete' button next to each post. The complexity of the page is Moderate. | 2 |
| 4. | Account Settings Page | This page manages all settings (deactivation, change of theme, font customization etc.) | Simple | Involves customizing the user profile according to the settings. Hence the complexity is Simple. | 1 |

| | | | | | |
|---|---|---|---|---|---|
| 5. | Help/FAQ Page | This page gives a list of common questions and answers for the users. | Simple | Involves display of 'Help' page containing help topics. Hence the complexity is Simple. | 1 |
| 6. | About Us Page | This page gives information about the motive of the webpage and some additional information. | Simple | This involves display of Text. Hence the complexity is Simple. | 1 |
| 7. | Contact Us Page | This page gives contact information for support on issues in using the website. | Simple | This involves display of text and few hyperlinks. Hence the complexity is Simple. | 1 |
| 8. | New Post Page | This page will allow the user to post their requests (For Example: Students can post regarding research project interests, funding opportunities; professors/ organizations can post regarding project proposals, people to work with, etc.) | Moderate | This involves making the new posts available to other relevant users (with similar intentions or research interests). It also involves deleting the new post being typed but not sent. The new post or a deleted post gets immediately reflected in the repository. The complexity is Moderate. | 2 |
| 9. | Post Edit Page | This page allows the users to change/edit their posts and update post information. | Moderate | This page gets displayed when the user clicks on 'Edit' button next to a post in the User Profile page. This involves changing the post in the repository and ensuring that the reflected copy is available to everyone instantly. The complexity is Moderate | 2 |
| **Total Object Points for Number of Screens: (1)** | | | | | **12** |

## REPORTS:

| Sr. No | Report Name | Description | Complexity | Justification | Object Points |
|---|---|---|---|---|---|
| 1. | Potential Matches Page | This page gives a list of all possible posts (by students, professors, organizations) that the user might be interested in. The matching is done based on the filters that the user sets and the interests specified in the posts. | Complex | This involves employing a search algorithm for finding matches and introducing filters to help with sorting of data. Hence the complexity is Complex. | 8 |
| 2. | Notifications and Messages Page | This page gives a list of all possible notifications. Those may include response from other users regarding the user's post(s), meeting requests or other messages from potential collaborators. The user will be able to reply back to the sender of the message. | Complex | This involves display of response(s) to the user's posts and the facility of replying back to the messages. Hence the complexity is Complex. | 8 |
| **Total Object Points for Number of Reports: (2)** | | | | | **16** |

## CUSTOM MODULES:

| Sr. No | Custom Module Name | Description | Object Points |
|---|---|---|---|
| 1. | Networking Module | The application involves a lot of communication between the collaborators. Network module would be used for new notifications, sending and retrieving messages from the repository and enabling real-time updates (new posts, deletion of posts and editing of posts) so that all the users would be able to see information in real-time. | 10 |
| 2. | Search Module | The application involves search of potential matches for users according to their given Research Interests along with various filters to filter the content for the user. Hence Search Module is designed to take care of search results and matching the results with respective users. | 10 |
| **Total Object Points for Number of Custom Modules: (3)** | | | **20** |
| **Total Object Points: (1)+(2)+(3)** | | | **48** |

Total Object Points – 48

We are thinking of having **intermediate programmers** to work on the project.

Assuming 1 programmer can manage 8 object points in a month, the full completion of design will take **6 man months.**

Considering that the design phase takes 6 man months (20% of the project time), the full completion of the project (100%) will take **30 months for 6 intermediate programmers.**

# RISK MANAGEMENT PLAN

## Risk 1: Risk of Schedule Slippage

### Risk Discovery and Assessment:

| | |
|---|---|
| **Short Name:** | Schedule Slippage |
| **Probability:** | 70-80% (Risk probability for schedule slippage is high in this range because of unforeseen circumstances. For e.g. accident of a key employee that may occur, which might cause the project to slip). |
| **Potential Delay:** | High (Since tasks are mostly interdependent, if this risk materializes, it will lead to High delays in the project completion). |
| **Description:** | The initial schedule made may not be accurate and it may lead to certain deadlines not being met and hence it might cause delay in the schedule (schedule slippage). |
| **Potential Cost:** | High (If the project slips, it takes a lot of extra resources (man-hours, money) to keep the project on track. Hence, the cost associated with these kinds of overheads due to slippage is High). |
| **Selected Risk Materialization Indicator (TI):** | Deadlines keep missing constantly |

### Risk Planning:

| | |
|---|---|
| **Class of Risk:** | Core Risk |
| **Action Required:** | Risk Mitigation |
| **Justification /Action Steps:** | • Keep buffer in schedule to ensure deadlines are met.<br>• Keep track of schedule.<br>• Outsource a few components to ensure that the schedule is followed. |

# Risk 2: Risk of Change in Requirements

## Risk Discovery and Assessment:

| | |
|---|---|
| **Short Name:** | Change In Requirements |
| **Probability:** | 60-70% (Requirements change and these may be due to a number of different reasons like recent market change, recession etc. Hence the probability of this risk occurring is High in the given range). |
| **Potential Delay:** | High (Changes in requirements can introduce overheads in schedule and development which inadvertently lead to High Delays). |
| **Description:** | Requirements are directly impacted by factors like technological changes, environment changes and several other changes. This might lead to changes in requirements. |
| **Potential Cost:** | High (The overheads in schedule and development brought about by changes in requirements can cause the entire work to be redone. The costs associated with this are usually High). |
| **Selected Risk Materialization Indicator (TI):** | Requirement volatility, less stakeholder satisfaction with the decided functionality implementation |

## Risk Planning:

| | |
|---|---|
| **Class of Risk:** | Core Risk |
| **Action Required:** | Risk Mitigation |
| **Justification /Action Steps:** | • Incremental development<br>• Defining Requirements per version or release. |

# Risk 3: Risk of Employee Turnover

## Risk Discovery and Assessment:

| | |
|---|---|
| **Short Name:** | Employee Turnover |
| **Probability:** | 30-40% (The probability is kept in the medium range because despite a company's best efforts, employees can leave for any reason including personal growth, personal reasons like family relocation, etc.). |
| **Potential Delay:** | Medium (If a key person leaves the company, the delay introduced in the project will be medium because an understudy will be maintained to offset the delay). |
| **Description:** | The employees working on the system are bound to get dissatisfied with tasks and opportunities they are exposed to and this may very well cause an employee turnover. |
| **Potential Cost:** | Medium (If a key person leaves, cost introduced in the project will be medium because an understudy will be maintained to offset the cost). |
| **Selected Risk Materialization Indicator (TI):** | Employees unhappy with the allotted tasks, growth and learning opportunities. |

## Risk Planning:

| | |
|---|---|
| **Class of Risk:** | Core Risk |
| **Action Required:** | Risk Mitigation |
| **Justification /Action Steps:** | • Keep track of employee turnover and look for patterns (employee turnover is usually high after pay increment) to be prepared.<br>• Keep employees happy.<br>• Keep trained backup for key people (or for people working on critical components).<br>• Keep buffer in schedule to accommodate the turnovers. |

# Risk 4: Risk of Specification Breakdown

## Risk Discovery and Assessment:

| | |
|---|---|
| **Short Name:** | Specification Breakdown |
| **Probability:** | 30-40% (The probability is kept medium in this range because the chances of stakeholders eliciting their requirements and developers misinterpreting them is not a common occurrence and can only happen occasionally). |
| **Potential Delay:** | Medium (If any misinterpretation do occur, the delay introduced in reworking is assumed to be in the medium range). |
| **Description:** | At the initial stages of the system, it is possible that the requirements gathered could be misinterpreted and hence cause dissatisfaction among stakeholders with the developed components. This leads to a specification breakdown. |
| **Potential Cost:** | Medium (If any misinterpretation do occur the cost introduced in reworking it is assumed to be in the medium range). |
| **Selected Risk Materialization Indicator (TI):** | Rejection of incremental components by the stakeholders or dissatisfaction among them. |

## Risk Planning:

| | |
|---|---|
| **Class of Risk:** | Core Risk |
| **Action Required:** | Risk Mitigation |
| **Justification /Action Steps:** | • Break the specification down to the last data level.<br>• Discuss with stakeholders and reach an agreement during the initial 15-20% of the project schedule. |

# Risk 5: Risk of Poor Productivity

## Risk Discovery and Assessment:

| | |
|---|---|
| **Short Name:** | Poor Productivity |
| **Probability:** | 50% (Productivity depends on a lot of different factors; employee morale, employee state of mind, even the office space design. Therefore the probability is evenly distributed here). |
| **Potential Delay:** | Medium (If productivity is affected, the delay introduced will be medium because some amount of rework and overhead will be introduced). |
| **Description:** | Due to less motivation among the team members, there may be a possibility that the total productivity of the system stays low which will cause a potential risk to the system being developed. |
| **Potential Cost:** | High (If productivity is affected, the costs will be high because the requisite quality not having been met, considerable resources will be spent and reworking will have to be done). |
| **Selected Risk Materialization Indicator (TI):** | • Low morale and dejection in team.<br>• Developer under-performance.<br>• Deadlines not being met. |

## Risk Planning:

| | |
|---|---|
| **Class of Risk:** | Core Risk |
| **Action Required:** | Risk Mitigation |
| **Justification /Action Steps:** | • Daily meeting for 5-10 minutes discussing the goals of the day and problems faced by the team members.<br>• Try to find and solve any problems faced by the team. |

# Risk 6: Risk of Natural Calamities

## Risk Discovery and Assessment:

| | |
|---|---|
| **Short Name:** | Natural Calamities |
| **Probability:** | 2-5% (The probability of risk to the system due to natural calamities is considerably low and hence we assume it to be in the range of 2-5%). |
| **Potential Delay:** | Low (The probability of a natural calamity is low but it cannot be ignored. Hence, we consider the delay to be low). |
| **Description:** | It may be possible for natural calamities like floods, earthquakes etc. to take place which will be a potential risk. |
| **Potential Cost:** | Medium (Natural disasters may cause physical damages which involves some cost and hence we consider potential cost to be medium). |
| **Selected Risk Materialization Indicator (TI):** | NA |

## Risk Planning:

| | |
|---|---|
| **Class of Risk:** | Other Risk |
| **Action Required:** | Ignored |
| **Justification /Action Steps:** | Cannot be predicted or contained accurately.<br>Hence it can be ignored. |

# Risk 7: Risk of a similar product in the market

## Risk Discovery and Assessment:

| | |
|---|---|
| **Short Name:** | Similar product |
| **Probability:** | 5% (The impact on our system due to development of a similar system is low since we are considering the market to be extensive. Having similar applications in the market should not affect us much. The probability of this risk materializing depends on the current market trends and company portfolio and interests Hence we consider the probability as 5%). |
| **Potential Delay:** | Low (Development of similar products in market does not necessarily delay any ongoing development process and hence it is considered to be low). |
| **Description:** | It may be possible for a similar product or system being brought up which may cause a potential risk to the system. This is a **SHOW STOPPER**. |
| **Potential Cost:** | High (Cost involves improving our system to be better than/similar to such products in the market and hence we consider it to be High). |
| **Selected Risk Materialization Indicator (TI):** | NA |

## Risk Planning:

| | |
|---|---|
| **Class of Risk:** | Other Risk |
| **Action Required:** | Ignored |
| **Justification /Action Steps:** | There is a low probability of this happening and it is a show stopper. Hence it has to be ignored. |

# Risk 8: Risk of Data Integrity

## Risk Discovery and Assessment:

| | |
|---|---|
| **Short Name:** | Data Integrity |
| **Probability:** | 30-50% (Since this application involves a lot of user communication, it may be possible for users to provide inaccurate information to each other. We consider the probability of such communications to be close to half and hence assume its range as 30-50%). |
| **Potential Delay:** | Low (Our application data is created by users. We are not responsible for any data integrity issues and hence we consider the potential delay due to this risk to be as low). |
| **Description:** | It may happen that irrelevant data is propagated among the users which may challenge the data integrity of the system. |
| **Potential Cost:** | Low (This risk does not affect the development of the system and thus has very less impact on cost factor. Hence we consider cost to be low). |
| **Selected Risk Materialization Indicator (TI):** | Complaints about information irrelevancy. |

## Risk Planning:

| | |
|---|---|
| **Class of Risk:** | Other Risk |
| **Action Required:** | Mitigation |
| **Justification /Action Steps:** | Display a Disclaimer Notice to the user on each page as follows:<br><br>Disclaimer: The Information provided in this website are provided by the users and EDUCARE is not liable for any discrepancy in the information. |

# Risk 9: Risk of Failure of Environment

## Risk Discovery and Assessment:

| | |
|---|---|
| **Short Name:** | Failure of Environment |
| **Probability:** | 50-60% (It is common for environmental failures to occur and most of the time they cause a risk in development of the system and hence we consider the probability of this risk to be 50-60%). |
| **Potential Delay:** | High (Risk caused due to environment failures bound to cause a lot of delay in development including the time to bring up the environment. Hence, we have considered potential delay high). |
| **Description:** | It is very common to have environmental problems causing the system to fail due to problems in code, tools or any other factor. |
| **Potential Cost:** | High (Environment failures mostly involves repair/replacements of tools involved and hence it has a big impact on cost. So we consider potential cost as High). |
| **Selected Risk Materialization Indicator (TI):** | • Improper settings placed for environment<br>• Abuse of environment |

## Risk Planning:

| | |
|---|---|
| **Class of Risk:** | Other Risk |
| **Action Required:** | Containment |
| **Justification /Action Steps:** | • Have alternate environments/software tools ready for use.<br>• Use source control tools to regularly backup code.<br>• Keep a team ready to work on the environment and try to bring it up during emergency. |

# Risk 10: Risk of Bad User Interface

## Risk Discovery and Assessment:

| | |
|---|---|
| **Short Name:** | Bad User Interface |
| **Probability:** | 20-30% (Bad UI would affect our application but will not to a great extent. We will be using the help of experts for designing the UI and hence we consider a lower range of probability i.e. 20-30%). |
| **Potential Delay:** | Medium (Risks due to Bad Interfaces have an impact on the user involvement, hence causing some delay in development of the system. So we consider the potential delay to be medium). |
| **Description:** | Sometimes the UI may not be suitable to the users for efficient use of the system making it a bad UI design. |
| **Potential Cost:** | Low (Making changes to User interface does not have high impact on cost factor and hence we consider potential cost to be low). |
| **Selected Risk Materialization Indicator (TI):** | • Decrease in usage of application<br>• Bad feedback given by Users |

## Risk Planning:

| | |
|---|---|
| **Class of Risk:** | Other Risk |
| **Action Required:** | Mitigation |
| **Justification /Action Steps:** | • Iterative development and regular review<br>• Bring in HCI expert |

# Risk 11: Risk of Platform

## Risk Discovery and Assessment:

| | |
|---|---|
| **Short Name:** | Platform |
| **Probability:** | 30-40% (With new platforms coming out every day and with rapid updates in the operating system, it is hard to ignore the risk of platform. Hence, we have taken the probability as 30-40%). |
| **Potential Delay:** | Medium (Though changes in platform specifications is a considerable risk, the changes to be taken care of should not be very much considering the fact that systems nowadays are backward compatible. Hence, the delay has been taken as medium). |
| **Description:** | The system design may not be compatible to be used in mobile devices or through other applications or due to updates/releases of newer versions of the system. |
| **Potential Cost:** | Medium (Incorporating the new features and removal of features that would not be supported by the new platform should take average time and cost. Hence, we have taken the cost as medium). |
| **Selected Risk Materialization Indicator (TI):** | It has been long since an update has been released |

## Risk Planning:

| | |
|---|---|
| **Class of Risk:** | Other Risk |
| **Action Required:** | Mitigation |
| **Justification /Action Steps:** | As ours is a web based application, we could implement the application using standards recognized by every browser |

# Risk 12: Risk of Security Breach

## Risk Discovery and Assessment:

| | |
|---|---|
| **Short Name:** | Security Breach |
| **Probability:** | 50-60% (With more security threats and hacks occurring every day, the probability of the risk of security breach has been considered as 50-60%). |
| **Potential Delay:** | High (Measures like increasing security, finding the cause and loop-holes in the system could take time. Hence, the delay has been taken as high). |
| **Description:** | The user accounts could be hacked or phished by unauthorized persons and this gives a big challenge to the confidentiality of the user's information to the system. |
| **Potential Cost:** | High (Security breach would instigate serious actions in the form of future prevention and increasing the security. Considering the customer trust as well, we have considered the cost as high). |
| **Selected Risk Materialization Indicator (TI):** | • Hack attempts<br>• Realization of system vulnerabilities |

## Risk Planning:

| | |
|---|---|
| **Class of Risk:** | Other Risk |
| **Action Required:** | Containment |
| **Justification /Action Steps:** | • Encryption of confidential information<br>• Hire experts |

# Risk 13: Risk of system overload

## Risk Discovery and Assessment:

| | |
|---|---|
| **Short Name:** | Overload |
| **Probability:** | 30-40% (With the number of users and number of users with access to internet increasing rapidly, the risk of system overload has been taken as 30-40%). |
| **Potential Delay:** | High (System overload may lead to high delay considering the worst-case scenario. Also acting as less optimistic developers we are going to have to have somewhat expensive and time-consuming strategies in place to handle the overload, which may push back the schedule and introduce delay). |
| **Description:** | Sometimes too many users could be using the system at the same time causing the server to slow down considerably or even fail. |
| **Potential Cost:** | High (Depending on the severity of the problem and considering the worst-case scenario, we have taken the cost as high). |
| **Selected Risk Materialization Indicator (TI):** | • Environment struggling to handle even average number of requests.<br>• Bad performance testing results.<br>• Increasing number of users using the application. |

## Risk Planning:

| | |
|---|---|
| **Class of Risk:** | Other Risk |
| **Action Required:** | Containment |
| **Justification /Action Steps:** | • Performance testing after deployment<br>• Multiple servers to take care of load |

# Risk 14: Stoppage of funding

## Risk Discovery and Assessment:

| | |
|---|---|
| **Short Name:** | Stoppage of funding |
| **Probability:** | 10% (The probability of stoppage of funding is very low unless something goes terribly wrong with the system being developed. We doubt any such situation will arise. Hence we have considered it as 10%). |
| **Potential Delay:** | NA (This is a show stopper and hence there is no delay applicable). |
| **Description:** | Sometimes too many users could be using the system at the same time causing the server to slow down considerably or even fail. |
| **Potential Cost:** | High (The cost already invested in the product would be high before this event and hence, the cost have been considered high). |
| **Selected Risk Materialization Indicator (TI):** | NA |

## Risk Planning:

| | |
|---|---|
| **Class of Risk:** | Showstopper |
| **Action Required:** | Accepted (no action required) |
| **Justification /Action Steps:** | NA |

# Risk 15: Risk of innovation

## Risk Discovery and Assessment:

| | |
|---|---|
| **Short Name:** | Risk of innovation |
| **Probability:** | 20-30% (Though innovation is something sought in each application, the probability of it not working out cannot be ignored. Hence, we have considered the probability as 20-30%). |
| **Potential Delay:** | Medium (Assuming that the innovative method fails, the delay would be medium because we would have an alternate plan as backup). |
| **Description:** | A component being developed with innovation could either reap huge benefits or fail miserably. This could lead to a risk. |
| **Potential Cost:** | Medium (In case the innovative method fails, we would still have an alternate plan to do the same work (maybe less innovatively). Hence, we have considered the cost as medium). |
| **Selected Risk Materialization Indicator (TI):** | • No proper follow-up of schedule<br>• Developer facing a lot of problems |

## Risk Planning:

| | |
|---|---|
| **Class of Risk:** | Other risks |
| **Action Required:** | Mitigation |
| **Justification /Action Steps:** | • Follow an already used method<br>• Re-use existing code<br>• Outsource the components |

# Project Management Plan

## Tools for different development activities

1. **Communication:** Email and IM

   Communication is one of the most important components in any development activity. Email and IMs are easy and quick to use. People ranging from developers to managers should have no problem using them. Though phone is one of the most commonly used medium of communication, we have decided not to use it as it is intrusive and may disrupt development activity.

2. **Documentation:** Word and Google/Sky drive

   Word is one of the most commonly used documentation tool and hence, we have decided to have it in our development activity.

3. **Planning:** Excel

   Excel is a familiar tool and using it for managing a team of 5 members would be possible.

4. **Source control:** Git

   Since Git is a distributed source control tool, we plan to use it so that the developers can have the flexibility of working wherever and whenever without depending on the remote repository for version control.

5. **IDE:** Eclipse

   The technology that is going to be used for development is Java EE. Hence, Eclipse is the most suitable IDE as it is very good for Java app development and also the fact that the developers are comfortable using it.

6. **Testing:** Rational Test Manager, JUnit

   We use Rational Test Manager since our team is familiar with the planning, designing, execution and reporting of tests used in the tool.

   We use JUnit, in correspondence with the development in Java EE, to write and run unit tests in a faster rate which increases the Quality of the test.

7. **Bug Tracking:** Bugzilla

   Bugzilla effectively keeps track of all reported bugs. Our team members have already used it before and hence we have decided on using it again for bug reporting.

8. **Design:** Visio

   Visio is a versatile diagramming tool that can be used for designing a simple flow-chart to a Gantt chart to a detailed UML diagram. Our team members have used the tool before and hence would find it comfortable to use it again.

**We are going to use Java EE, Servlets, JavaScript, JQuery, AJAX and MySQL database for developing our application.**

## Activities, Milestones and Deliverables

**Activities:**

- User Interface and validation for the Registration page (A1): This UI will have registration form elements like Name, Address, Date of Birth, Gender, Research Interests, purpose of using this application etc. Proper validations would also be needed for the form elements

- User Interface, validation and authentication logic for Login page (A2): This UI will have the form elements Username and Password. Proper validations would be needed for these elements. Also, the authentication logic will have to be developed (comparing with the entries in the database) for ensuring that the username and password of the user are valid.

- User Interface, validation and retrieval of user information for User Profile page (A3): The interface will be dynamic because the page will aid users to edit their profile information in the same page. This page will have all the information pertaining to the user, answered during registration. We will have to take care of validations for all the fields. Logic will have to be written to retrieve user data from the database.

- Retrieval of user posts in User Profile page (A4): This activity is concerned with retrieving user posts from the system and displaying the same in the UI. This activity will be dependent on the completion of the search module explained later.

- User Interface and setting logic for Account Settings page (A5): This page is concerned with displaying all the account settings that can be used for different customizations (changing font, setting up a device/email for receiving notification, etc.). Each account setting has its own logic that has to be developed.

- User Interface for Help/FAQ, About Us and Contact Us pages (A6): These will be static UIs having Help topics and FAQs, details about the company and our application and contact details for support.

- User Interface and validation for New Post page & User Interface, validation and retrieval of 'to be edited' information for Post Edit page (A7): The New Post page will have all the form elements that the user will have to fill information, in order to submit a post for other users of the application to see. The page will need validations for all the form elements.

  The user would be able to dynamically edit a submitted post. The post to be edited would have to be retrieved first. The existing data for the post would be populated in the respective form elements. The user can then change the data according to his/own wish. Validations would be applied for each form element.

- User Interface, interaction with the search logic and sorting of retrieved data for the Potential Matches page (A8): This UI will feature the search results of all relevant posts that

a user might be interested in. To retrieve the search results, the logic for interaction with the search module will have to be written. Once the result is generated, the user would be able to sort information according to choice because of the sorting logic.

- User Interface and retrieval of user notifications, meeting requests and other messages for the Notification and Messages page (A9): This activity will be about designing the user interface for displaying the notifications and messages in the application. The logic of retrieving all the notifications and posts would have to be written.
- Retrieval of data based on the user's search interest (A10): This activity will use the search feature to retrieve posts that match the user's interests.
- Ordering of data by relevancy to user's interests (A11): This activity will prioritize posts by comparing the matches of each posts with the user's defined interest and displaying posts with the most number of matches at the top and the least number of matches at the bottom.
- Logic for sending and receiving messages and their notifications to the user (A12): This activity will have the logic for efficiently sending and receiving messages with as less failure as possible. The activity is also concerned with notifying the user through the preferred media (email, phone or in the application) as set up in the Account Settings page.

**Milestones:**

- Registration page and Login page (M1): We have clubbed activities under registration and login page because they are related and dependent on each other. This milestone will be reached if the following activities are completed successfully: User Interface and validation for the Registration page, User Interface, validation and authentication logic for Login page.
- User Profile page and Account Settings page (M2): We have clubbed activities under User Profile page and Account Settings page because the user would be able to customize his account settings from the user profile page. In that sense, Account Settings page is dependent on User Profile page. This milestone will be reached if the following activities are completed successfully: User Interface, validation and retrieval of user information for User Profile page, Retrieval of user posts in User Profile page, User Interface and setting logic for Account Settings page.
- New Post and Post Edit pages (M3): This milestone will be reached if the following activities are completed successfully: User Interface and validation for New Post page & User Interface, validation and retrieval of 'to be edited' information for Post Edit page.
- Notification and Messages page (M4): This milestone will be reached if the following activities are completed successfully: User Interface and retrieval of user notifications, meeting requests and other messages for the Notification and Messages page.

- Potential Matches page (M5): This milestone will be reached if the following activities are completed successfully: User Interface, interaction with the search logic and sorting of retrieved data for the Potential Matches page.

**Deliverables:**

- New Post and Post Edit pages (D1): We consider these pages to be critical components for our application. Having these milestones ready would mean providing users with a usable feature in our application. Finishing this feature will complete a major chunk of our development and hence we have considered this as a deliverable.
- Potential Matches page (D2): This is another key component in our application. Having this feature would make our application competent in the market and provide unique and useful features that the users could use. Also, this feature will complete another major chunk of our application. Hence, we have considered this as a deliverable.

# Team Members (Skills and Roles)

**Number of team members for the project: 5**

**Key skills of each team member:**

1. **Member 1 (TM1):** Team leader, Planning leader

We are planning to have a team member acting as both team and planning leader. Team leader and planning leader are needed for proper co-ordination and proper planning of the project respectively. Since the project group consists of only 5 members and the roles are similar, it should be possible for one person to be able to handle both roles.
Activities handled: Requirement gathering, project management

2. **Member 2 (TM2):** Technical lead, Designer and Lead Programmer

The technical lead will be responsible for all technical aspects of the project. In addition to taking technical decisions, organizing programming activities, designing the project architecture, research and helping developers with their difficulties, the technical lead will also be involved in coding some difficult components in the project.
Activities handled: System design, development (critical components only - Retrieval of data based on the user's search interest, Ordering of data by relevancy to user's interests, User Interface, interaction with the search logic and sorting of retrieved data for the Potential Matches page).

3. **Member 3 (TM3):** Developers and Technical writers **(Pratik)**

Developers will be responsible for the coding activity in the project. At the same time, they will be responsible for documenting all the activities as they would know the implementation details accurately.
Activities handled: Logic for sending and receiving messages and their notifications to the user, User Interface and validation for New Post page & User Interface, validation and retrieval of 'to be edited' information for Post Edit page.

4. **Member 4 (TM4):** Developers and Technical writers **(Ajinkya) (**Description same as above)

Activities handled: User Interface and validation for the Registration page, User Interface, validation and authentication logic for Login page, User Interface, validation and retrieval of user information for User Profile page, Retrieval of user posts in User Profile page, User Interface and setting logic for Account Settings page.

5. **Member 5 (TM5):** Quality Assurance **(Nitin)**

Since we plan to release our product in the market, it is necessary to ensure that the product meets the quality standards that the users desire. That is why we have decided to have a team member dedicated for Quality Assurance. This member would be responsible for writing, maintaining and executing test cases and also responsible for the overall quality of the product being developed.
Activities handled: Testing and Maintenance

# Gantt Chart Abbreviations and short forms:

1. **Activities**:
    i. **A1** – User Interface and validation for the Registration page
    ii. **A2** – User Interface, validation and authentication logic for Login page
    iii. **A3** – User Interface, validation and retrieval of user information for User Profile page
    iv. **A4** – Retrieval of user posts in User Profile page
    v. **A5** – User Interface and setting logic for Account Settings page
    vi. **A6** – User Interface for Help/FAQ, About Us and Contact Us pages
    vii. **A7** – User Interface and validation for New Post page & User Interface, validation and retrieval of 'to be edited' information for Post Edit page
    viii. **A8** – User Interface, interaction with the search logic and sorting of retrieved data for the Potential Matches page
    ix. **A9** – User Interface and retrieval of user notifications, meeting requests and other messages for the Notification and Messages page
    x. **A10** – Retrieval of data based on the user's search interest
    xi. **A11** – Ordering of data by relevancy to user's interests
    xii. **A12** – Logic for sending and receiving messages and their notifications to the user

2. **Milestones:**
    i. **M1** – Registration page and Login page
    ii. **M2** – User Profile page and Account Settings page
    iii. **M3** – New Post and Post Edit pages
    iv. **M4** – Notification and Messages page
    v. **M5** – Potential Matches page

3. **Deliverables:**
    i. **D1** – New Post and Post Edit pages
    ii. **D2** – Potential Matches page

4. **Team Members:**

    i. **TM2** – Team Member 2 (Technical lead, Designer and Lead Programmer)

    ii. **TM3** – Team Member 3 (Developer and Technical Writer)

    iii. **TM4** – Team Member 4 (Developer and Technical Writer)

**Observations from the Gantt chart:**

1. Team Member 4 (TM4) starts working on Activity 9 (A9) after achieving Milestone 2 (M2) in Activity 5 (A5). This is to ensure that the team member is not kept without any work and that the activities take place parallel to each other where there is no dependency.
2. Activity 8 (A8) is started mid-way after Activity 9 (A9) has started. This is because A8 cannot be successfully developed unless there are some components from A9 ready. For example: Unless there are posts that are present in the database, it is not possible to develop and test the search functionality. Letting A9 to start first assumes that the feature of 'New Post/Post Edit' would have begun and there would be sample posts that can be used by A8.