

Influence Of Emotional Intelligence for Professional Growth

Submitted in partial fulfillment of the requirements
for the degree of

B.E. Information Technology

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2020-2021**

CERTIFICATE

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I declare that this written submission represents my ideas in my own words and where others' ideas or words have been included, I have adequately cited and referenced the original sources. I also declare that I have adhered to all principles of academic honesty and integrity and have not misrepresented or fabricated or falsified any idea/data/fact/source in my submission. I understand that any violation of the above will be cause for disciplinary action by the Institute and can also evoke penal action from the sources which have thus not been properly cited or from whom proper permission has not been taken when needed.

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ABSTRACT

Emotional Intelligence (EI) refers to the ability to understand and act according to one's own emotions, as well as to understand the emotions of others; it is the key to understand the permutation and combination of the Intellectual complexities of work-life which has an immense degree of association with it. Previous research has primarily enlightened the importance of learning strategies and Emotional Intelligence among university students and their interdependencies with the student's academic performance. The study was conducted with help of a survey of questionnaires to find out the relationships between our selected parameters and the significance of Emotional Intelligence on it to decide on the predictions of our results. This research is not aimed at determining whether an individual student becomes effective or ineffective, but to help them excel in their respective choices. It is about exploring the linkages and relationships between EI and its constituent determinants along with the individual's abilities to manage emotions in order to perform well in their professional life. Our findings showed a significant impacting factor to be social skills. Along with differences in empathy scale between males and females, suggesting males having greater empathy scores than corresponding female counterparts.

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Chapter 1

INTRODUCTION

1.1 Description

Emotional Intelligence(EI) has been instrumental in spurring and making a culture of high-performing people. Emotional Intelligence(EI) applications in people include leadership development, administration advancement, organization headway, and performance management for development. Researchers claim that empathy is ordinarily connected with Emotional Intelligence(EI) because it identifies with people connecting their personal experiences with those of others. A person with a high emotional quotient can convey better, decrease nervousness and stress, resolve clashes, improve relationships, empathize with others, and overcome life's challenges.

The advancement of EI during the previous years has prompted the distribution of an assortment of dominantly famous research papers and books. Results and discoveries of various explore directed in this space of study over a significant stretch uncover an assortment of elements; Student's Intelligent Quotient(IQ), Socio-Economic status, Motivation, Peer-Relationship, Teacher-Student Relationship, Parental Involvement, and Personality.

1.2 Problem Formulation

The aim behind this project is to clear confusions in the mind of students to opt for either magistrate studies or job facilities using Emotional Intelligence and help them achieve success in their professional life.

Thus maintaining an impeccable balance between professional life and emotional intelligence and find certain correlation parameters which will turn out to be deciding factors for monitoring the linking between them.

1.3 Motivation

According to a LinkedIn survey in 2018 of 2,000 business leaders, 57 percent of employers said soft skills are the first thing they look for when searching for new employees. The survey shows business leaders value graduates with knowledge on how to lead and work within a team, those with clear communication and collaboration skills, and people who demonstrate good time management. From understanding how to motivate others, being able to navigate tricky personalities and allowing everyone to be heard in their contributions—these skills all stem from having empathy and social awareness. A need to inculcate these demands in individuals

a blending of academic (cognitive), behavioral (action), and affective (emotional) dimensions is needed to address the complex issues faced by educating students. To understand these issues and challenges of public education, there is a need to develop responsible and emotionally healthy students and teachers. As schools and colleges prepare students for careers and productive employment, education will continue to modify its programs and instruction. As colleges prepare students for positions of responsibility and leadership, there will be an increased interest and recognition of the importance of the contributions of the emotional mind. To adequately prepare children for future employment, we need to teach a broader range of skills and competencies than is currently addressed in schools and colleges. In short, learning and applying emotional intelligence skills contribute to academic and career success.

1.4 Proposed Solution

In the study proposing balance between emotional intelligence and academic development, results demonstrate correlation to be very less or irrelevant however levels of emotional intelligence should be expanded with advancement in education. This educational growth could be accomplished with countinuous development and advancement. This, advancement or development of person can prompt expansion in the degrees of emotional intelligence.

1.5 Scope of the project

The project maps the emotional intelligence of people with the year group from 20-30 within South-Asian Countries predominantly India. The central point considered while planning the passionate insight alongside proficient development is as per the following: Intraindividual Component, Interpersonal Component, Stress Management, Adaptability, General Mood. As indicated by these essential components we have thought of Stress Management SM, Self-Awareness-SW, Self-Regulation-SR, Empathy-EM, Social Skills-SS, Motivation-MT as the main factors for research. On which a questionnaire is prepared in the information base. This questionnaire takes input similar to likert's scale as : Strongly Disagree (1 point), Disagree(2 points), Neither Agree nor Disagree (3 points), Agree (4 points), Strongly Agree (5 points).

Chapter 2

REVIEW OF LITERATURE

2.1 Existing Work

2.1.1 Literature related to existing System

Emotional Intelligence (EI) A Therapy for Higher Education Students, Robert P Machera, Precious C Machera investigates the necessity to style and develop emotional intelligence curriculum for college kids in education. Emotional intelligence curriculum may be used as a therapy that provides skills to manage high emotions faced by generation. The paper explains the four factors that were identified by Salovey that are perceiving emotions, reasoning with emotions, understanding one's emotions, managing emotions. Thus there are four more core emotional intelligence skills that enhance people in managing emotions and behaviour:

1. relationship management:
2. self - esteem
3. decision making
4. stress management.

Author claims individuals must master these core skills .Individuals should be able to understand the levels of emotions at all the times they can be in either two of them high emotions which are not acceptable and individuals should not make decisions when charged at this level and low emotions which are acceptable if an individual is calm. The results reflected that it had been imperative to introduce a module on emotional intelligence in education. This research assists students in correcting their negative behaviour and attitudes. Thus if implemented it will give more positive results and greater the reduction drop-outs and hence this may influence the growth of the individual and the university. [1]

The paper Study of Emotional Intelligence and Learning Strategies, Ramezan Hasanzadeh, Fatema Shahmohammadi B enlightens readers regarding the importance, learning bears throughout peoples' lives, and it is like a complex process that is the result of interactions of many factors like cognition, emotions and strategies. This present study aims to investigate the relationship between Emotional Intelligence and Learning Strategies at the academic level. The researchers hope the study will contribute to spotlight the need of incorporation of strategic learning and emotional literacy within the curriculums, either explicit or integrated learning strategies instruction, depending on the situation and needs. It addresses the following hypotheses:

1. There is no relationship between girl and boy students' total EI and their Learning Strategies.
2. Emotional Intelligence isn't different in students of various fields.
3. Emotional Intelligence isn't different in boy and girl students.

4. Learning Strategies aren't different within students of various fields.
5. Learning Strategies aren't different within girl and boy students. Thus designing questionnaires that included questions that followed the Likert point system and therefore last questions were qualitative in nature. The qualitative sort of questions were necessary so as to reinforce the validity and reliability of the study, so as to eliminate bias on the findings the questionnaires were analyzed by an independent person but the results were interpreted by the researchers. The results were analyzed using excel spreadsheet, charts and graphs. The research study incorporates the objectives that are mainly giving the priority to the connection between the factors of EI and therefore the academic performance, which is furthermore, giving the scope for future study which will be make an addition of the factor, named as the work experience, who have recently placed in the company or are professionals. This study will eventually help the managers and other team members to identify the interest among the co-workers and thus help them assign specific tasks to those interested in that particular field. [2]

The paper Emotional intelligence in engineering education,Mehmet Tekerek,Betul Tekerek. During this study, emotional intelligence levels of engineering students from different universities in Turkey were investigated. Data were collected by the popular test named "Emotional Intelligence Scale" developed by Schutte and et al (1998). 98 engineering students from various engineering streams were selected as the participants of the study. The participants selected were alike to the participants in the TUBITAK Alternative Energy Car Races before the study. Findings of the study showed that there's no significant difference in students' emotional intelligence scores in terms of year group and gender. Additionally, the participants who have similar hobbies regarding developing design had higher emotional intelligence scores. In terms of being engineers within the family, students showed higher performance in emotional intelligence score. Students who don't have professional pessimism have a better emotional intelligence score. The connection between EI and variables (having similar hobbies in lifestyle, having an engineer in family, state of professional pessimism) was evaluated. Additionally, t-test was utilized in order to work out whether there's a relationship between gender and EI levels of the participants. One-way ANOVA was used to reveal whether there's a relationship between year group and EI. Also,concluded that there is a huge difference in terms of gender in favor of female students. Consequently, it might be claimed that EI is a crucial concept in terms of engineering education since the students with higher EI have a hobby similar to engineering profession. For this reason, not only engineering education but also all stem fields should consider EI in every single educational level. These organizations can motivate students to obtain engineering skills. [3]

The paper The Influence of Emotional Intelligence on Academic Achievement Maizatul Akmal Mohd Mohzana,Norhaslinda Hassan , Norhafizah Abd Halila Investigate the influence of Emotional Intelligence on academic achievement among students of the Education Faculty. Conclusions from numerous researches that were conducted during this paper speaks of study over an extended period of time revealed a variety of factors: students' IQ, socio economic status, motivation, peer-relationship, teacher-student relationship, parental involvement and personality. Among these factors, IQ had been commonly used as a crucial factor and related with academic success. In contrast, recent studies are stating that IQ alone isn't responsible for students' academic achievement. Therefore, due to the many claims on the influence of emotional intelligence on academic and occupational success, the study aims to find out the level of emotional intelligence among the students of the Education Faculty. The study is a quantitative study, so the sole instrument utilized for data collection was questionnaire. In determining the strength of the relationship between emotional intelligence and academic achievement, Pearson correlation analysis was carried out. The findings indicate that the respondents were

highly aware of their own emotions and feelings and they understood that emotions can evolve depending on situations. However, the results show that the respondents had less awareness of others' emotions as compared to the awareness of their own emotions. There is a similarity between the results of this study with Pishghadam who also found that Emotional Quotient was weakly related with academic performance when it was examined as a whole but when examined according to subsets of entire results, the findings resulted in significant relationship with academic achievement.[4]

This paper The Impression of Emotional Intelligence on University Students' Academic Performance, Praveen Kumar Pandey, Namita Gupta, Prashant Kumar Pandey, Pratibha Giri implies that through the studies there is a very limited number of studies who all have investigated the role of emotions in the process of capturing better academic scores through education. The data is collected through the well-structured and closed-ended questions that were proved to be found authentic enough as per statistics. Mainly the objectives are related

- 1) To understand the effect of Emotional Intelligence (EI) on the Academic Performance of the University Students.
- 2) To assess the current prevailing scenario of the University Students.
- 3) To suggest some points for enhancing the prevailing condition of Students to the next level.
- 4) To find the relationship between each of the factors of Emotional Intelligence. The authors have done the analysis through various tests, i.e Factor Analysis, Correlation, and ANOVA. After testing, positive and strong correlation was found between each of the factors of Emotional Intelligence and it leads to the conclusion that the academic performance of the students is affected by Emotional Intelligence. Thus the author proves that Emotional appearance of the students is the key to understand the permutation and combination of the Intellectual complexities of the work over a period of the time. From this study, it states that the EI levels of the university students are high compared to that of the academic scores of the university students. It may very well be broken down that there is no effect of EI on the scholastic performance since the EI levels of university students is high despite the fact that their CGPA is not exactly relatively high. This result indicates that the faculty members should consider more focus towards the emotional development of the students along with the intellectual development. In such a case, it will be like overall development of the students. This development will furthermore help in the growth of opportunities in the career prospect. The study is limited as per the range of access of researcher's leading to an analysis which can't be generalized to the complete world. So, the greater volume of data might have given the different results to this study, which is acting here as the limitation for this study. So, more specific data can be retrieved under a greater period of time with the help of authentic and neutral data sources to know the relationship between emotional intelligence and academic performance. [5]

An Impact of Emotional Intelligence on the Academic Achievement of the student: A case study on students of Career Point University , Garima Tyagi and Ashish Gautam. This research specifies the influence of emotional intelligence for university students. The study was based on quantitative analysis and it is also investigated that there is a significant relationship between the emotional quotient and the academic achievement. So, the main objective of the study is to identify

- 1)To study the influence of emotional intelligence on academic achievement.
- 2)To study the impact of Emotional Intelligence on Academic Achievement of Career Point University Students.

The result of the research has suggested that those students having high degree of emotional intelligence having experience with good academic outcomes and the students with the lower degree of emotional intelligence having poorer chance of succeeding academically. For analyz-

ing there is a significant relationship between emotional intelligence and academic achievement, graphical and the qualitative methods are used. To find that there is a significant impact of Emotional Intelligence on Academic Achievement of Career Point University Students a Correlation was calculated between the CGPA and Emotional Quotient of 35 students from the university mentioned above, the result is .715 which is bigger than 7 meaning that it falls in range that's quite a moderate value. So, we can accept the null hypothesis i.e. there is a significant impact of Emotional Intelligence on Academic Achievement of Career Point University Students. A significant positive correlation between emotional intelligence and academic achievement indicates that academic achievement does not only depend on cognitive and conceptual aspects of intelligence but it is also affected by emotional abilities of a person.[6]

Machine Learning on Emotional Intelligence and Work Life Balance by P. Julia Grace, N. Nasreen Banu. This paper says that Emotions are an essential part of our biological makeup, and every morning they march into the office with us and influence our behavior. The ultimate focus was on Emotional Intelligence (EI) and how it can be combined with data mining technology. Here, the author examines how far the employees are conscious of their own self and found the ideas and views of an individual about themselves and others. Without such knowledge of their own personality it would become difficult to analyze his/her own emotions. This study aims at finding out the individual abilities to manage their emotions in order to perform well. The clustering and classification techniques are applied on the same dataset of human emotions, which deals with different types of analysis. Problem in maintaining work life balance for the employees and has attracted the attention of many researchers. Managing the boundary between home and workplace is becoming more challenging. This paper aims to gain knowledge about the emotional intelligence level of employees and suggest ways to enhance the emotional intelligence of the employees, with the collected data. This helps them to analyze their own self and to improve them. The main objective of the study is to determine the Emotional Intelligence of the Employees that are Evaluating self-awareness of the employees, analyzing the motivational level of the employees, analyzing sensitivity of the employees, evaluating ability of the employees, determining the influence on the employees. To increase the positive emotions in an individual, the emotional variation detection has been proved to be fruitful. This paper explored emotional variation of employees using clustering and classification techniques, by using the same dataset. Usually, older people are slightly more likely to be higher in emotional intelligence. Thus, the finding tells that emotional intelligence is a developing ability; it is likely that the accumulated life experiences contribute to Emotional Quotient. Emotional Intelligence has a greater impact on performance of employees. Secondly, an emotionally intelligent organization is based on an organizational strategy to improve business performance. [9]

2.1.2 Literature related to Algorithms.

The paper Modified K-means Algorithm for Emotional Intelligence Mining by Mr. Anand D. Khandare focusing on minimizing the problems of K-means algorithm by some modifications in it. Emotional intelligence is the ability to know and apply the knowledge from one's own and other emotions. It is generally applicable in the organization during decision making, team formation and for leadership development. Today, EI can be a way of being smart. Clustering or cluster analysis is the process of grouping similar data objects into groups or clusters. Clustering algorithms are widely used for many applications. There are various clustering algorithms available such as K-means, K-medoids, and Agglomerative algorithms etc. K-means algorithm is most popular along with being a simple clustering algorithm. In K-means, distance measure

is used to group the data objects into groups based on minimum distance. This paper also implements fuzzy logic which is termed as logic with uncertainty. An additional strategy to k-means clusters minimizes the chances of empty clusters and improves the quality of clusters. New step is added to validate the cluster quality by comparing the results of two clusters on the basis of degree of matching and similarity of the clusters using new validation measures. Samples of 200 people's emotional intelligence data collected from the survey. From the experiment, it was found that modified K-means worked more efficiently than basic K-means on EI data. For this work, the java program was written for basic K-means and modified K-means. Both algorithms were evaluated by using some standard matrices such as Sum squared error (SSE), Accuracy of clustering (ACC), Percentage of analyzed methods (PAM) and time complexity. To know the emotions of persons, questionnaire is formed by using standard EI dimensions and competencies. For the questions, this paper considered the four domains and fourteen competencies of EI. Then applied a modified algorithm on EI data to create the clusters of persons based on emotions. This cluster analysis will be useful in the organization for team formation, team leader selection and decision making purposes.[8]

2.1.3 Literature related to Technology/Tools /Frameworks.

Improved Learning with Emotional Intelligence and Analysis using Neural Networks, I. Samuel Peter James, Dr.P.Ramasubramanian, D.Magdalene Delighta Angeline. This paper scrutinizes how emotions affect the learners' learning and the achievement of performance enhancement of various learners under different environment that leads to the success of a learner. This study examines how emotional intelligence recounts academic performance. The proposed work uses Observe, Amend and Analysis (OAA) method and Multi-Layer Perceptron training. With the proposed work, the learners were made to learn in three different learning environments like personification, coalition and instructional learning environment. Thus, this method improves the learners learning and performance is evaluated using Neural Network to enhance the future outcome. The implementation result proved that the proposed solution is improved with positive emotions. The learners' performance measures are improved with a positive-based emotional learning environment. The outcome of the learner is analyzed and evaluated with Multi-layer Perceptron training that uses data mining techniques to predict the future outcome of the learners. The results of the implementation depicts that learning with positive emotion produces good outcome compared to the negative emotions. The thinking, creativity and learning capability of a learner is enhanced with a proposed which overcomes the traditional method of teaching. [7]

The research paper of assessing the impact of personality and psychological ownership in determining emotional intelligence of information technology(IT) employees using curve fit regression by S. Anjali Daisy, Dr. C. Vijaya Bhanu, Deena Maria Bonaparte. The author says that even if EI is contributing 80 percent of an individual's success people aren't mindful of it. Intelligence(IQ) is considered a basic requirement for every degree entrance. Emotional Intelligence is the sine qua non of management. There's a connection between demographic characteristics of the respondents and the extent of emotional intelligence, the influence of Big Five Personality. The correlation of employees' well-being, tolerance of IT has been considered. Here, the performance of the employees has been differentiated into individual context and task oriented. Studies have shown that a difference in emotional intelligence between girls and boys has been demonstrated in many studies, for example, boys tend to display more emotional problems than the girls, girls showed more concern through adolescence. Kusljevic –Versekiene and Pukinskaitė found that higher emotional intelligence levels were found among females, and par-

ents' education, household income and location of residence also have influence over emotional intelligence. Guardian is an important influencing factor in the development of psychosocial skills. Thus there is a significant relationship between personality, psychological ownership and Emotional Intelligence. [10]

No.	Paper Title/Website	Contribution	Analysis/Limitations
1	Emotional Intelligence (EI) A Therapy for Higher Education Students	Author investigates the need to design and develop an emotional intelligence curriculum for students in higher education.	To reduce the high emotions in college students the emotional intelligence curriculum must be included under professional guidance of psychology trainers. Limitations: On account of addition of a module in curriculum may generate a burden on students if not accepted optimistically.
2	Study of Emotional Intelligence and Learning Strategies	Research enlightens readers regarding the importance of learning strategies and emotional intelligence in university students' and their interdependence on each other.	The research study incorporates the objectives that are mainly giving the concern to the relationship between the factors of EI and the academic performance, and how improving the emotional intelligence can increase the person's ability to be socially competent. Limitations: There may be the possibility of the educational institutions to not take their responsibility more seriously which may create a problem in inculcating the strategies in students more efficiently.

3	Emotional intelligence in engineering education	<p>During this study, emotional intelligence levels of engineering students from different universities in Turkey were investigated.</p>	<p>The connection between EI and variables (having similar hobbies in lifestyle, having an engineer in family, state of professional pessimism) was evaluated. Additionally, t-test and one-way ANOVA was used to reveal whether there's a relationship between year group and EI.</p> <p>Limitation: No significant difference was found between the students' EI scores in terms of gender and age in the study.</p>
4	The Influence of Emotional Intelligence on Academic Achievement	<p>The findings of the study hold important implications on the value of Emotional Intelligence and their relationships to student's academic performance especially among pre-service teachers.</p>	<p>Since the respondents are future educators, they should have a good hand-in hand relationship with EI. They should be able to take on the challenge to educate the young generations and adapt to the demanding and stressful working environment.</p> <p>Limitation: No significant relationship was found between emotional intelligence and students' academic achievement.</p>
5	The Impression of Emotional Intelligence on University Students' Academic Performance	<p>Study that there is no to a very limited number of studies who all have investigated the role of emotions in the process of capturing better academic scores through education.</p>	<p>Emotional appearance of the students is the key to understanding the permutation and combination of the Intellectual complexities of life over a period of time.</p> <p>Limitations: The study is limited as number of data collected was small which can't be used to analysis the entire world</p>

6	An Impact of Emotional Intelligence on the Academic Achievement of the student: A case Study on students of Career Point University	It indicates the impact and importance of emotional intelligence for students at Career Point University	Focuses greater on the emotions that in turn help in building the academics and future scope of students. Limitations: Accordingly the lacking factor could be found in a student in the process but in what ways they can improve upon those lacking factors is not specified.
7	Improved Learning with Emotional Intelligence and Analysis using Neural Networks	This study examines how emotional intelligence recounts academic performance. The proposed work uses Observe, Amend and Analysis (OAA) method and Multi-Layer Perceptron training.	The results of the implementation depicts that learning with positive emotion produces good outcomes compared to the negative emotions. Limitations: No description on how to improve or how to shift towards positive emotions.
8	Modified K-means Algorithm for Emotional Intelligence Mining	Focuses on minimizing the problems of the K-means algorithm by some modifications in it and applying it to the numerical dataset.	Modified K-means worked more efficiently than basic K-means on EI data. Limitation: On How this information can be used in helping the organization with team formation and decision making process.
9	Machine Learning on Emotional Intelligence and Work Life Balance	The author examines how far the employees are conscious of their own self and found the ideas and views of an individual about themselves and others.	The finding tells that emotional intelligence is a developing ability; it is likely that the accumulated life experiences contribute to Emotional Quotient. Limitations: Classification and Clustering algorithms provide similar results for the given data.

10	Assessing the impact of personality and psychological ownership in determining emotional intelligence of information technology(IT) employees using curve fit regression	The study says that there is a significant relationship between personality, psychological ownership and Emotional Intelligence	The correlation of employees' well-being, tolerance of IT has been considered. Here, the performance of the employees has been differentiated into individual context and task oriented. Limitation:This research has been confined only to the state of Tamilnadu.
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Table 2.1: Literature Review

Chapter 3

SYSTEM ANALYSIS

3.1 Functional Requirements

User.questionnaire	Users can fill the questionnaire and access it whenever required.
User.personaldetails	Details of the user are recorded to be forwarded to the admin.
User.result	User would able to get the analysis in form customized report.
Admin.update	Admin system has the ability to update the changes for the user's personal details as well as maintain records for the same.
Admin.generatequestionnaire	Admin creates questionnaires for the user.
Admin.collectdata	Admin collects data from questionnaire and maintain suitable database
Admin.generatereport	After running technique on data; report containing the result is generated
Admin.notifyuser	The notification to the user is sent after the user copy of the report is ready.

Table 3.1: Functional Requirements

3.2 Non-Functional Requirements

3.2.1 Performance Requirements

1. All the actions should be performed in accurate time.
2. Any user should be able to access the model at any place and time.

3. The system should be interactive.
4. Generation of the report should be in inaccurate time.

3.2.2 Safety Requirements

1. The system should be developed in a common technology that the upgrades to the system are done efficiently.
2. The system should be documented and coded in a way that a developer that was not originally on the development team could determine how to make updates.

3.2.3 Security Requirements

1. The system should meet legal and OC security requirements for People data.
2. No one should have access to specific People data.
3. The entries in the database should be well protected specially the password, it should be in encrypted form.

3.2.4 Software Quality Attributes

Usability:

1. The system must be easy to use so that users can easily perform any actions.
2. A user should be able to access the questionnaire without any difficulty.
3. A user should be able to do that inaccurate time.
4. Users should be able to effectively operate the system with less than one hour of training.

Availability:

1. The system must be highly reliable since, if the system is not available, the user can't easily be able to create an invoice.
2. The system should be available 99.999 percent of the office open hours.

Robustness:

1. During a system crash, either the request of generating the report should be forward or not.
2. The database entries should be maintained after the system crash.

Reliability:

1. The system should have high fault tolerance.

3.3 Specific Requirements

Hardware

1. Processor-i5 and above
2. RAM-Minimum 4GB
3. Hard Disk-500GB and above
4. Minimum internet speed

Software Requirements

1. jupyter Notebook
2. Visual Code

3.4 Use-Case Diagrams and Description

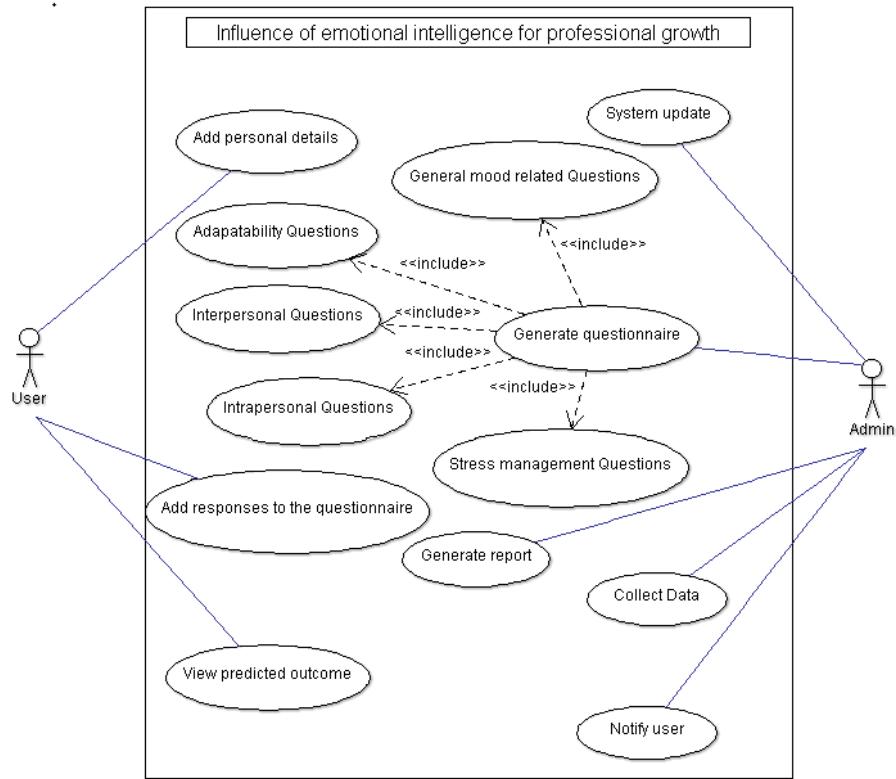


Figure 3.1: Use Case Diagram

User: The user is a person who wants to know his/her emotional intelligence or which career path is suitable for him/her.

Admin: The technical person behind the system which keeps the details of the user and helps in generating the report after the analysis.

USE CASE	Add personal details
PRIMARY ACTOR	User
GOAL IN CONTEXT	To take in account of user's details
PRECONDITION	For proper validation
TRIGGER	Message of data being added successfully should be displayed
SCENARIO	To add the details in the database after validation
EXCEPTION	Do not reflect changes in the database if user already exists
PRIORITY	In order to access the features provided by the system

Table 3.2: Description for 'Personal details'

USE CASE	Add responses to the questionnaire
PRIMARY ACTOR	User
GOAL IN CONTEXT	To fill the questionnaire
PRECONDITION	Already details present in the database
TRIGGER	Notify the admin to add data in the database
SCENARIO	If valid response add to the database
EXCEPTION	If already filled the questionnaire previously
PRIORITY	Necessary to access various features

Table 3.3: Description for 'Questionnaire'

USE CASE	View predicted outcome
PRIMARY ACTOR	User
GOAL IN CONTEXT	To display the customized report
PRECONDITION	All the responses are filled properly by the user
TRIGGER	Notify the user the results are ready
SCENARIO	To view the result after analysis
EXCEPTION	If the report is already made available to the user
PRIORITY	The user has already present in the system

Table 3.4: Description for ‘Predicted outcome’

USE CASE	System Update
PRIMARY ACTOR	Admin
GOAL IN CONTEXT	To have data and do changes if needed
PRECONDITION	Must have enter valid entries
TRIGGER	Message of updation should be display
SCENARIO	When user request changes
EXCEPTION	If changes are same as the previous entries
PRIORITY	To make sure data holds authenticity

Table 3.5: Description for ‘Updation of system’

USE CASE	Preparation of questionnaire
PRIMARY ACTOR	Admin
GOAL IN CONTEXT	For user to add the responses
PRECONDITION	User should already supply basic details
TRIGGER	If responses are valid add it to database
SCENARIO	Users to avail features
EXCEPTION	If user has already filled the response
PRIORITY	Necessary before going to next stage

Table 3.6: Description for ‘Questionnaire’

USE CASE	Intrapersonal questions
PRIMARY ACTOR	Admin
GOAL IN CONTEXT	To know how they interact with ownself
PRECONDITION	User should already apply the basic details
TRIGGER	If valid then move to next set of questions
SCENARIO	Users to avail the features
EXCEPTION	If responses already filled
PRIORITY	Necessary before jumping to next section of questions

Table 3.7: Description for ‘Interpersonal questions’

USE CASE	Intrapersonal questions
PRIMARY ACTOR	Admin
GOAL IN CONTEXT	To know how they interact with ownself
PRECONDITION	User should already apply the basic details
TRIGGER	If valid then move to next set of questions
SCENARIO	Users to avail the features
EXCEPTION	If responses already filled
PRIORITY	Necessary before jumping to next section of questions

Table 3.8: Description for ‘Intrapersonal questions’

USE CASE	Stress management questions
PRIMARY ACTOR	Admin
GOAL IN CONTEXT	To know how user adjust to changes
PRECONDITION	User should already apply the basic details
TRIGGER	If valid then move to next set of questions
SCENARIO	Users to avail the features
EXCEPTION	If responses already filled
PRIORITY	Necessary before jumping to next section of questions

Table 3.9: Description for ‘Stress management questions’

USE CASE	Adaptability questions
PRIMARY ACTOR	Admin
GOAL IN CONTEXT	To know how user adjust to changes
PRECONDITION	User should already apply the basic details
TRIGGER	If valid then move to next set of questions
SCENARIO	Users to avail the features
EXCEPTION	If responses already filled
PRIORITY	Necessary before jumping to next section of questions

Table 3.10: Description for ‘Adaptability questions’

USE CASE	General mood questions
PRIMARY ACTOR	Admin
GOAL IN CONTEXT	To know their general behaviour towards certain ways of life
PRECONDITION	User should already apply the basic details
TRIGGER	If valid then show the form is being filled
SCENARIO	Users to avail the features
EXCEPTION	If responses already filled
PRIORITY	Necessary before jumping to next section of System

Table 3.11: Description for ‘General mood questions’

USE CASE	Collect data
PRIMARY ACTOR	Admin
GOAL IN CONTEXT	Add data from questionnaire to database
PRECONDITION	Questionnaire has to filled beforehand
TRIGGER	Data is successfully added
SCENARIO	To start training the model
EXCEPTION	If database is up-to-date
PRIORITY	For starting the generation of result

Table 3.12: Description for ‘Collect data’

USE CASE	Generate report
PRIMARY ACTOR	Admin
GOAL IN CONTEXT	To give the prediction
PRECONDITION	Proper testing of model is done
TRIGGER	Message of report being generated
SCENARIO	To send the report to user
EXCEPTION	If report request is not required
PRIORITY	For getting the final decision

Table 3.13: Description for ‘Report generation’

USE CASE	Notify the user
PRIMARY ACTOR	Admin
GOAL IN CONTEXT	To send the message the report is been generated
PRECONDITION	The report is ready
TRIGGER	Send the message to the user
SCENARIO	Completing the procedure
EXCEPTION	If already notify the user then ignore
PRIORITY	To finish the procedure

Table 3.14: Description for ‘Notification for the user’

Chapter 4

ANALYSIS MODELING

4.1 ER Modeling

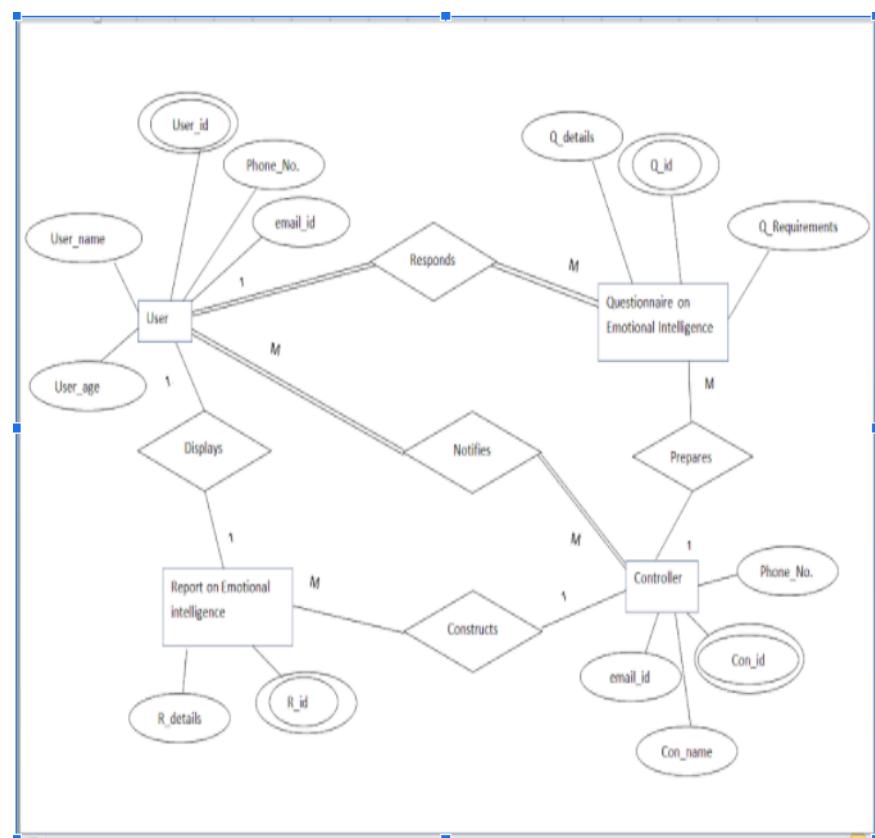


Figure 4.1: ER Diagram

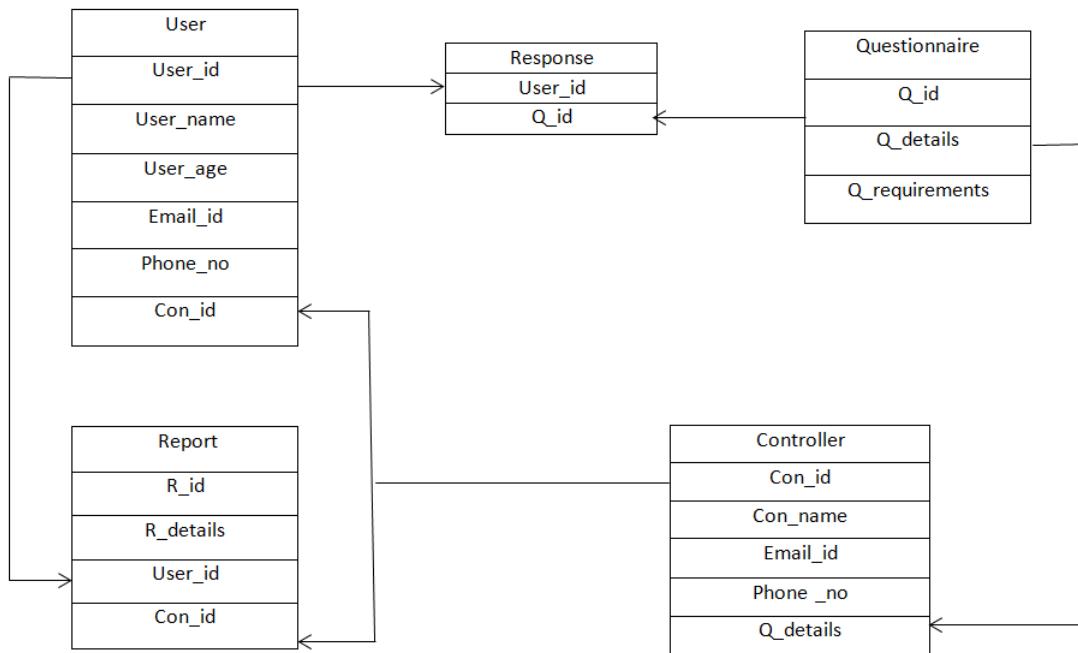


Figure 4.2: Normalized Relational diagram for system

Sr. No.	Column	Data Types	Description
1	User_id	Integer	User's id (primary key)
2	User_name	Varchar	User's full name
3	User_age	Integer	User's age
4	Email_id	Varchar	User's email id
5	Phone_no.	Integer	User's phone number
6	Q_id	Integer	Questionnaire id (primary key)
7	Q_details	Varchar	Questionnaire details
8	Q_requirement	Varchar	Questionnaire requirements
9	Con_id	Integer	Controller's id (primary key)
10	Con_name	Varchar	Controller's name
11	Email_id	Varchar	Controller's email id
12	Phone_no	Integer	Controller's phone number
13	R_id	Integer	Report id (primary key)
14	R_details	varchar	Report details

Figure 4.3: Data Dictionary

4.2 Class Diagram

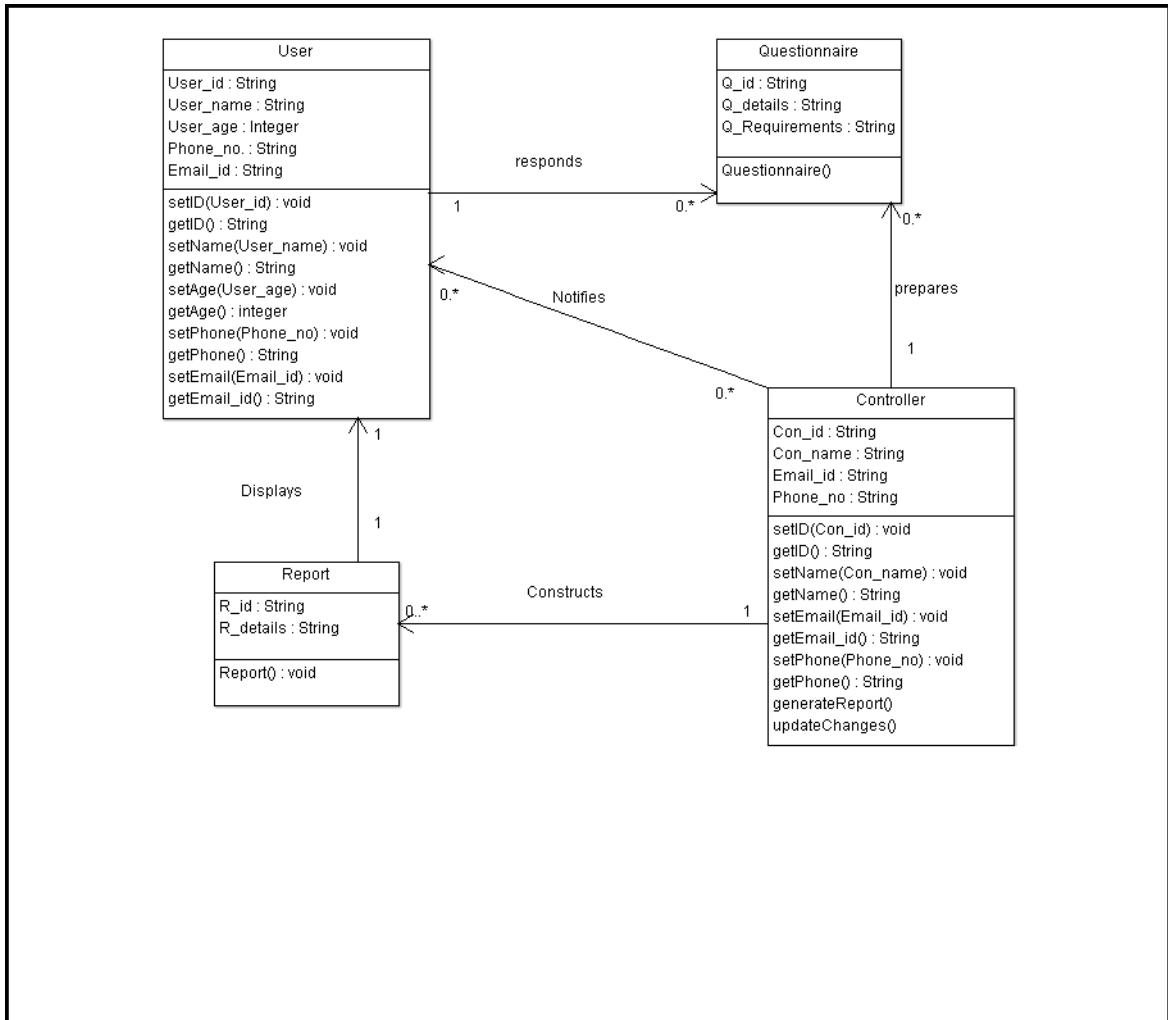


Figure 4.4: Class diagram

4.3 Activity Diagram

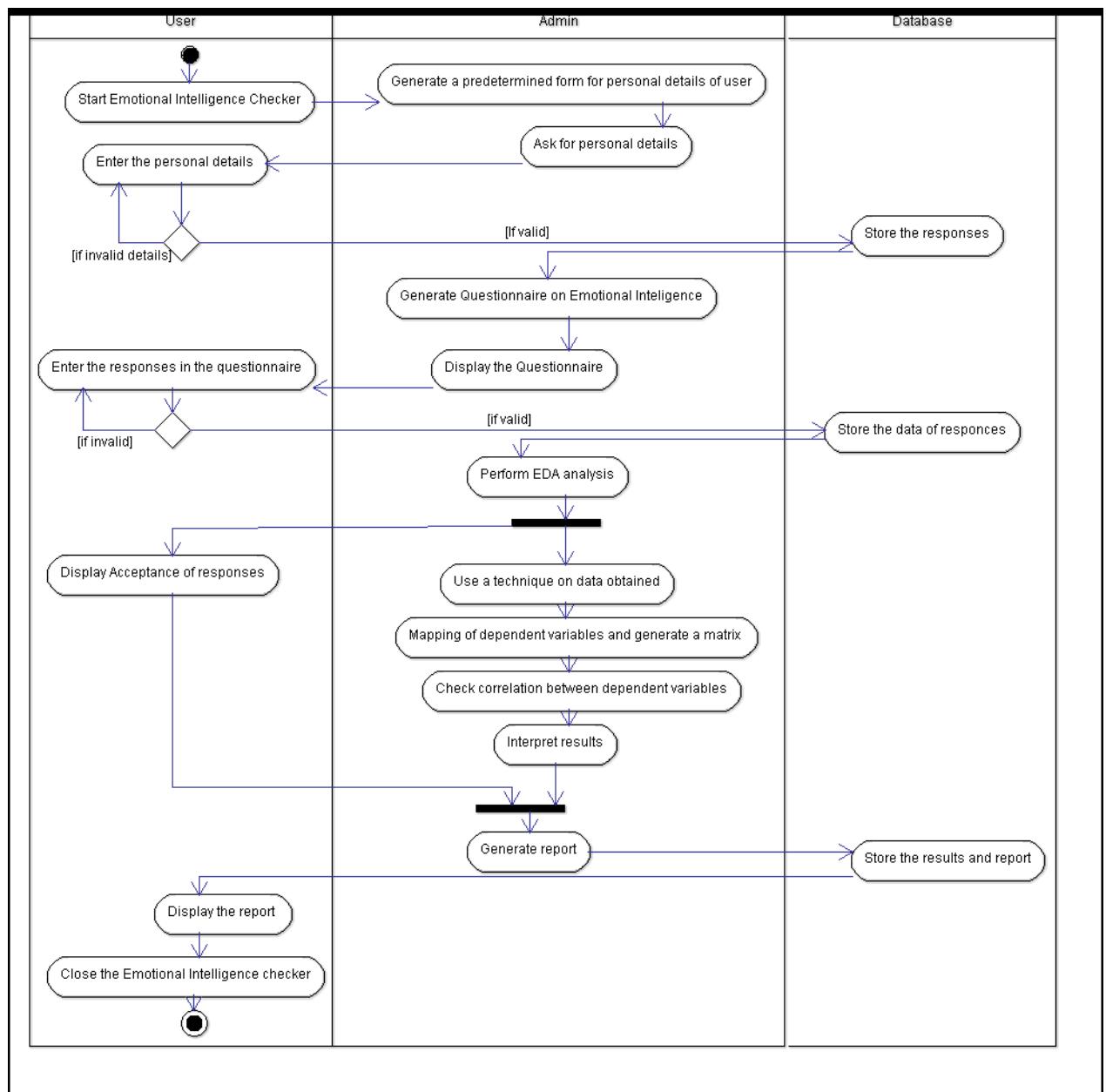


Figure 4.5: Activity Diagram

4.4 Functional Modeling

4.4.1 DFD:Level 0

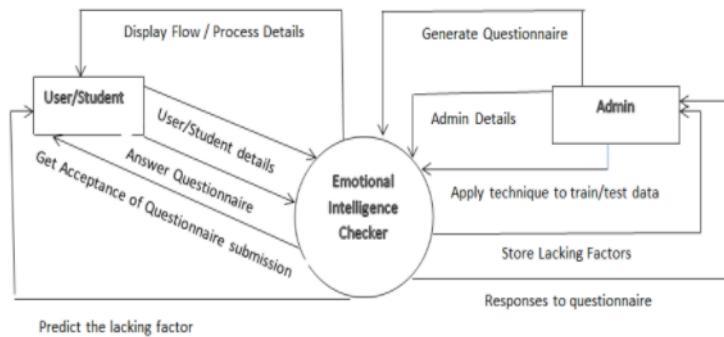


Figure 4.6: DFD Level 0

4.4.2 DFD:Level 1

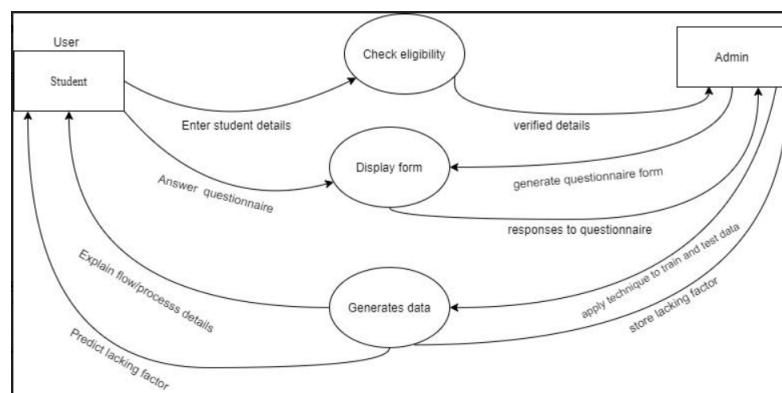


Figure 4.7: DFD Level 1

4.4.3 DFD:Level 2

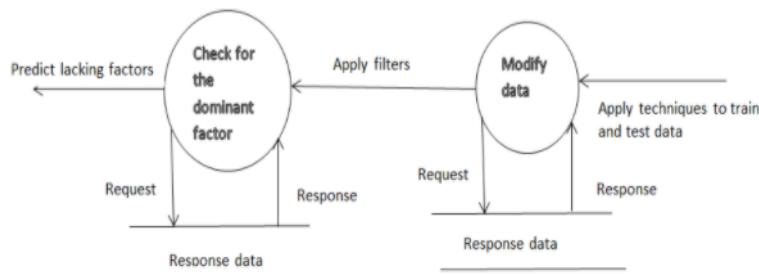


Figure 4.8: DFD Level 2

4.5 TimeLine Chart

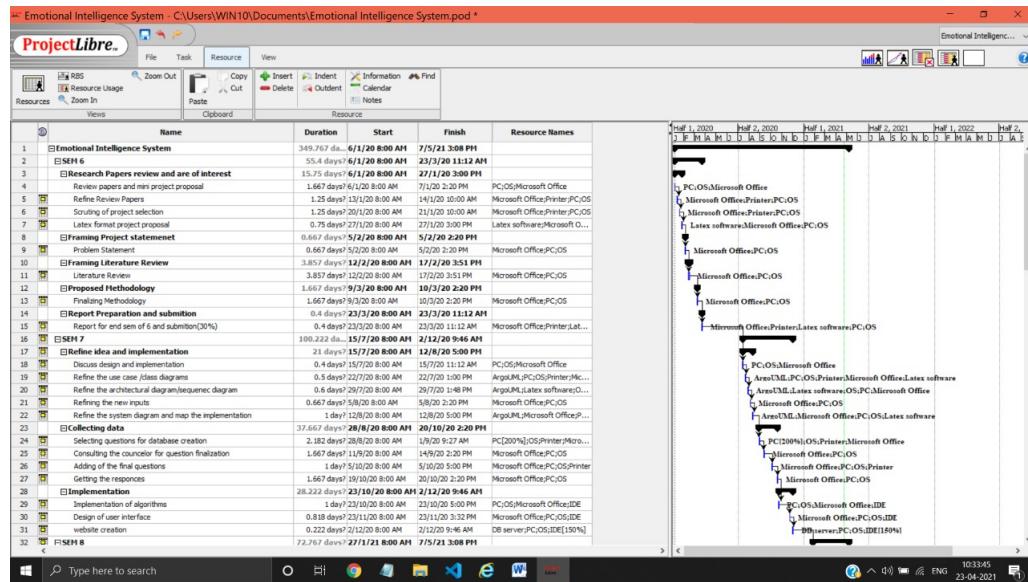


Figure 4.9: Time Chart Tasks -1

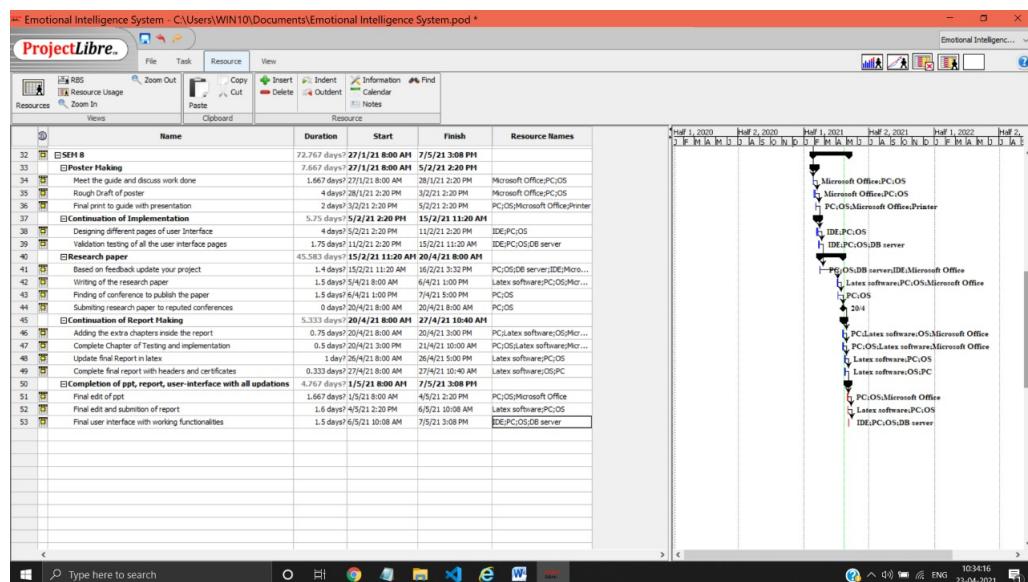


Figure 4.10: Time Chart Tasks -2

Chapter 5

DESIGN

5.1 Architectural Design

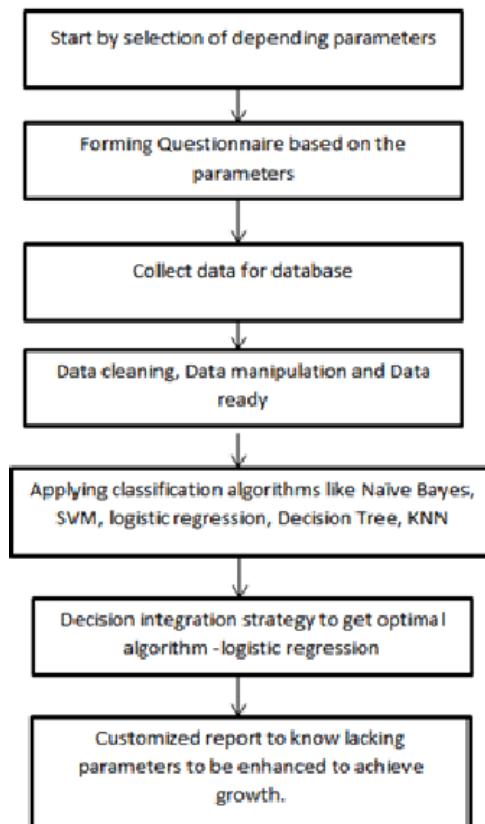


Figure 5.1: Architectural design

5.2 User Interface Design GUI for your project

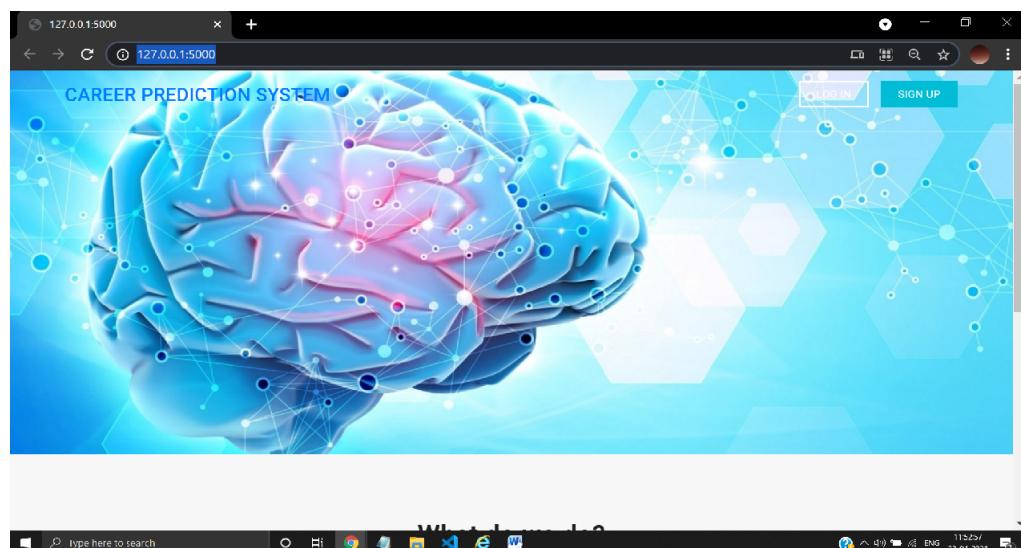


Figure 5.2: Home Page

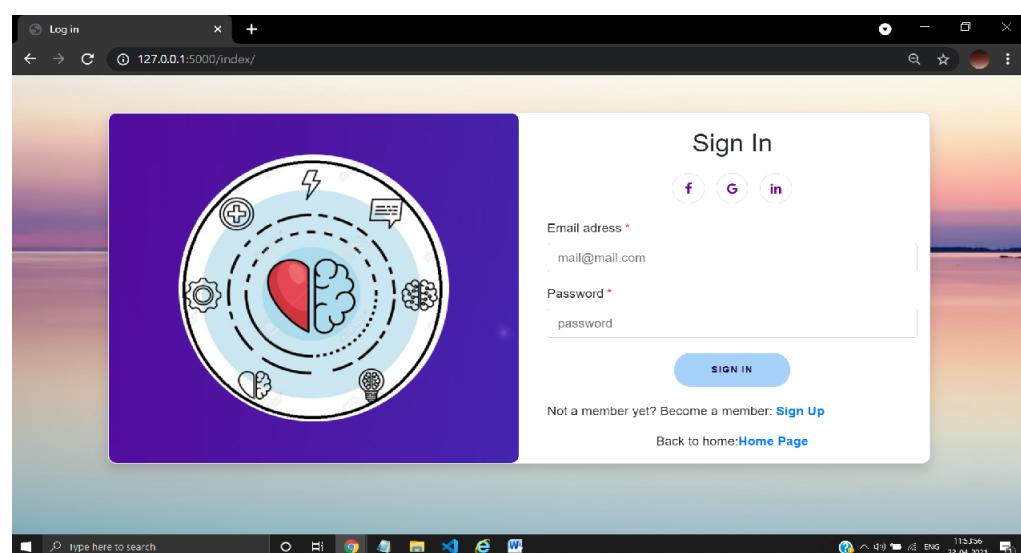


Figure 5.3: Sign-in Page

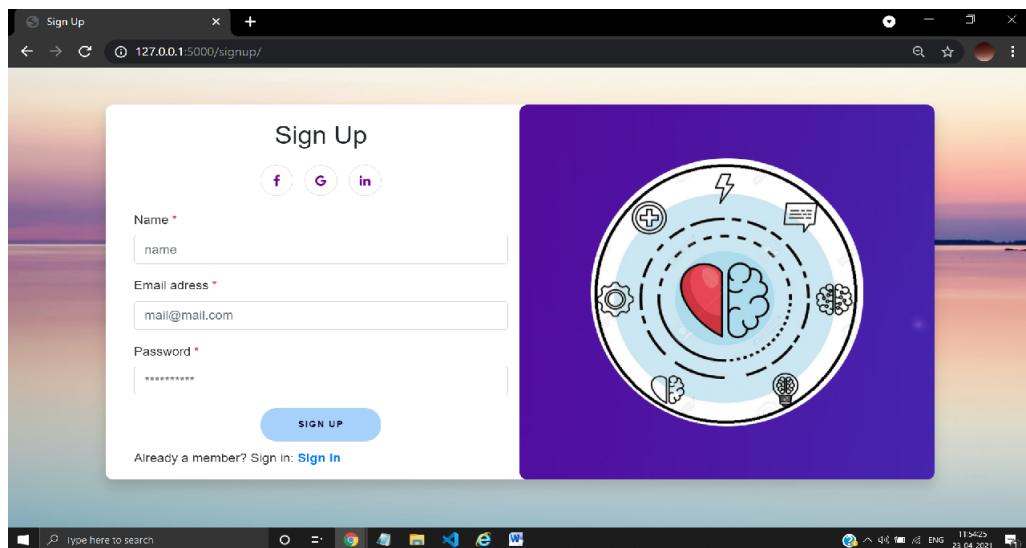


Figure 5.4: Sign-up Page

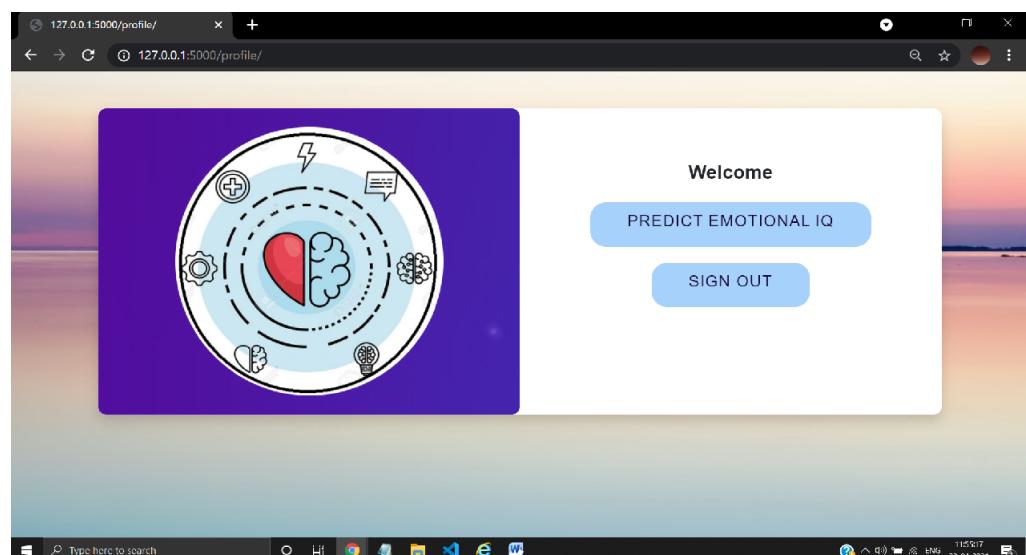


Figure 5.5: Dashboard

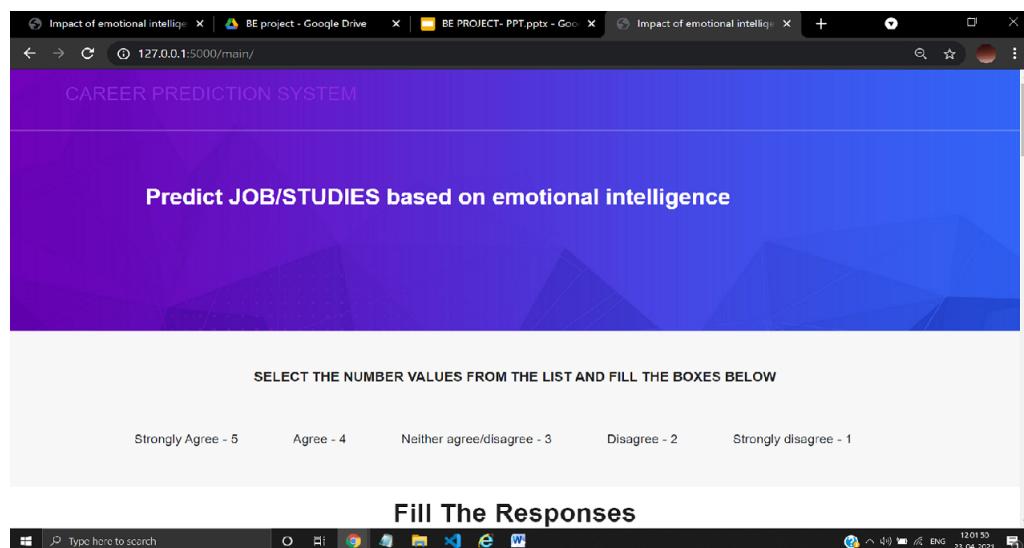


Figure 5.6: Prediction Page

Chapter 6

IMPLEMENTATION

6.1 Algorithms / Methods Used

On collection of all the physical data, Exploratory Data Analysis on the dataset corresponding to each factors are carried out. Dataset is divided into two halves randomly to apply conventional machine learning algorithms. 70% of the dataset is assigned for training purpose, and the remaining part is left for testing purpose. K-Nearest Neighbours, Naive Bayes, Support Vector Machine, Logistic Regression and Decision Tree are performed. Each of the algorithm is executed and their classification performance is listed.

We mainly focus on the supervised learning approach because the nature of problem is more suitable. A detailed description of all the algorithms are applied to analyse the emotional condition of users filling up the data.

K-Nearest Neighbour Algorithm:- The KNN algorithm assumes that similar things exist in close proximity. In other words, similar things are near to each other. It hinges on this assumption being true enough for the algorithm to be useful. KNN captures the idea of similarity with some mathematics we might have learned in our childhood— calculating the distance between points on a graph.

$$\begin{aligned} d(\mathbf{p}, \mathbf{q}) &= d(\mathbf{q}, \mathbf{p}) = \sqrt{(q_1 - p_1)^2 + (q_2 - p_2)^2 + \cdots + (q_n - p_n)^2} \\ &= \sqrt{\sum_{i=1}^n (q_i - p_i)^2}. \end{aligned}$$

Then we find for the value of K. To select the value for K to be right for our data, we have run the KNN algorithm several times with different values of K and have chosen the K that reduces the number of errors we encounter while maintaining the algorithm's ability to accurately make predictions.

Naive Bayes Algorithm:- A Naive Bayes classifier is a very popular probabilistic machine learning model used for many classification tasks. It is based on the Bayes theorem that calculates the conditional probabilities with following equation.

$$P\left(\frac{A}{B}\right) = \frac{P(B|A)P(A)}{P(B)}.$$

Using Bayes theorem, we find the probability of A happening given that B has occurred. Here, B is the evidence and A is the hypothesis. The Naive Bayes algorithm assumes that the predictors/features are independent from each other. That is, there is no relationship among features. Hence, it is called naive. Bernoulli Naive Bayes, Gaussian Naive Bayes, multinomial Naive Bayes, and complement Naive Bayes are the different types of Naive Bayes approaches. The Bayes theorem has a large application field in computer science including text classification or spam analysis. For this we have used Bernoulli Naive Bayes algorithm.

Decision Tree Algorithm:-The Decision Tree algorithm builds a classification model that uses a tree-like graph for decisions and their possible after-effect, including chance event results, resource costs, and utility. It is a supervised classification algorithm that divides a labeled dataset into smaller datasets while building the Decision Tree. Decision Tree algorithm breaks down the dataset into smaller datasets until the last dataset has only similar objects. During this process, separated subsets get attached to questions which have certain responses. These questions make it possible to find the right subset which the new data belong to. Gini type of classifier criteriaon was used to perform the algorithm.

Support Vector Machine:-A support vector machine takes data points and outputs the hyperplane (which in two dimensions it's simply a line) that best separates the tags. This line is the decision boundary dividing the data points into two sections. It is one of the most robust prediction methods, based on the statistical learning framework. It is mainly considered for comparison purposes. Implementation of SVM improved the performance of data and reduced the complexity of model.

Logistic Regression:-Logistic regression is a statistical model that in its basic form uses a logistic function to model a binary dependent variable, although many more complex extensions exist. In regression analysis, logistic regressionis estimating the parameters of a logistic model. Each object being detected in the image would be assigned a probability between 0 and 1. It is the appropriate regression analysis to conduct when the dependent variable is dichotomous (binary). Logistic regression is used to describe data and to explain the relationship between one dependent binary variable and one or more nominal, ordinal, interval or ratio-level independent variables. To prepare the classification model needed packages were imported. Then a model was built on the train test data to evaluate model to see if the performance is satisfactory. It was found that this algorithm gave the maximum accuracy on the data set build.

On successful classification of algorithms the results were as seen in the below graph.

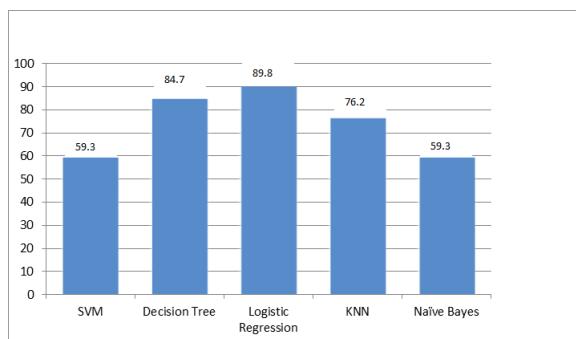


Figure 6.1: Comparison of Algorithms for accuracy

6.2 Working of the project

```
#importing the libraries
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
#importing the csv file
df=pd.read_csv("./EQ-final.csv")
from sklearn.preprocessing import LabelEncoder,OneHotEncoder
LevelEncod=LabelEncoder()
df['Outcome']=LevelEncod.fit_transform(df.Outcome)
#studies=0 & job=1
df.Outcome.value_counts()
x=df.drop(['Gender','Age','Country','Outcome'],axis=1)
x.head()
x.shape
y=df.Outcome
y.head()
y.shape
from sklearn.model_selection import train_test_split
x_train,x_test,y_train,y_test=train_test_split(x,y,test_size=0.3,random_state=43)
#KNN
from sklearn.neighbors import KNeighborsClassifier
from sklearn.metrics import roc_auc_score
test_accuracy=[]
from sklearn.metrics import confusion_matrix,accuracy_score
from sklearn.metrics import roc_curve,auc
for k in range(1,30,3):
    print('K=',k)
    neigh=KNeighborsClassifier(n_neighbors=k)
    neigh.fit(x_train,y_train)
    print('Train confusion matrix')
    print(confusion_matrix(y_train,neigh.predict(x_train)))
    print('test confusion matrix')
    print(confusion_matrix(y_test,neigh.predict(x_test)))
    print(accuracy_score(y_test,neigh.predict(x_test)))
    print('*'*50)
    test_accuracy.append(accuracy_score(y_test,neigh.predict(x_test)))
k=np.arange(1,30,3)
plt.plot(k,test_accuracy,label='test Accuracy')
plt.legend()
plt.xlabel('K:hyperparameter')
plt.ylabel("testaccuracy")
plt.title('ERROR PLOTS')
plt.show()
neigh=KNeighborsClassifier(n_neighbors=20)
neigh.fit(x_train,y_train)
```

```
print("trst confusion matrix")
print(confusion_matrix(y_test,neigh.predict(x_test)))
pred=neigh.predict(x_test)
accuracy_score(y_test,pred)
from sklearn.metrics import classification_report
print(classification_report(y_test,pred))
#Naive Bayes
from sklearn.naive_bayes import BernoulliNB
model = BernoulliNB()
model.fit(x_train,y_train)
pred1 = model.predict(x_test)
acc_score = accuracy_score(y_test, pred1)
print(acc_score)
#Logistic Regression
from sklearn.linear_model import LogisticRegression
log_model=LogisticRegression()
log_model.fit(x_train,y_train)
pred_log=log_model.predict(x_test)
accuracy_score(y_test,pred_log)
print(classification_report(y_test,pred_log))
#Decision Tree
from sklearn.tree import DecisionTreeClassifier
from sklearn.metrics import classification_report,confusion_matrix,accuracy_score
from sklearn.ensemble import RandomForestClassifier
from sklearn.ensemble import RandomForestRegressor
dtree=DecisionTreeClassifier(criterion='gini',max_depth=None,min_samples_split=5,min_samples_leaf=3,
dtree.fit(x_train,y_train)
prd=dtree.predict(x_test)
accuracy_score(y_test,prd)
print(classification_report(y_test,prd))
#SVM
from sklearn.svm import SVC
model = SVC(gamma='scale')
model.fit(x_train,y_train)
model.score(x_test,y_test)
```

Chapter 7

TESTING

7.1 Test Cases

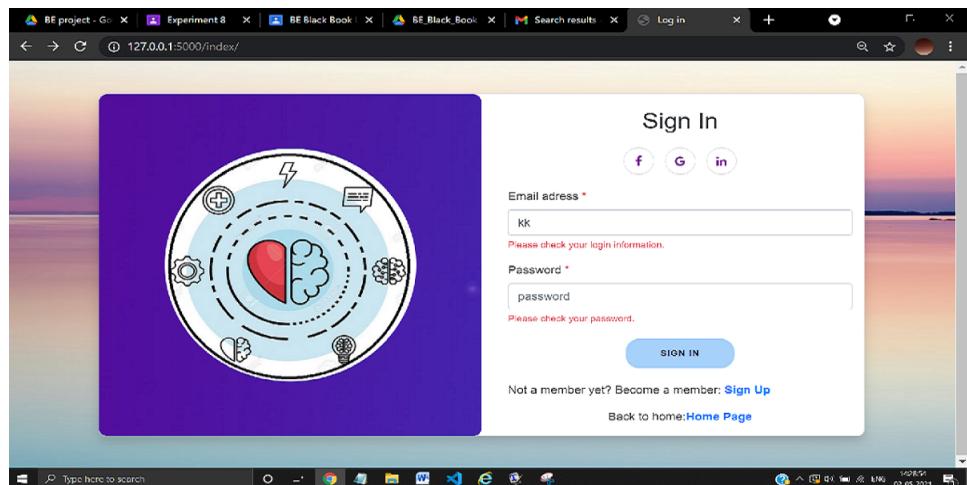


Figure 7.1: Test case for Sign-in

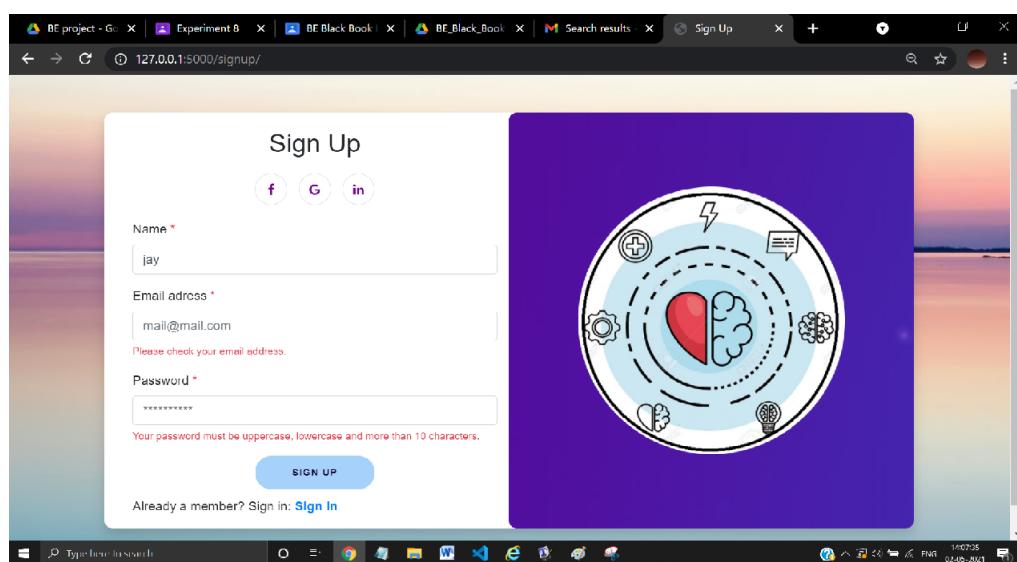


Figure 7.2: Test case for Sign-up

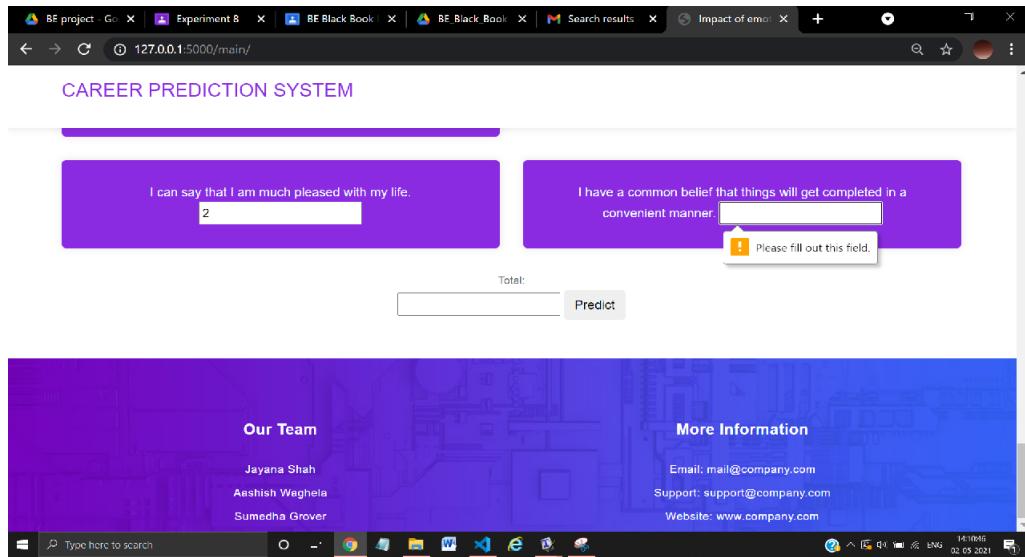


Figure 7.3: Test case for Prediction Page

7.2 Type of Testing used

7.2.1 White Box Testing

White Box (also known as Clear Box Testing, Open Box Testing, Glass Box Testing, Transparent Box Testing, Code-Based Testing or Structural Testing) is a software testing method in which the internal structure/design/implementation of the item being tested is known to the tester. The tester chooses inputs to exercise paths through the code and determines the appropriate outputs. Types of white box testing applicable were:

Unit Testing Unit Testing is the first level of software testing. In this level of software testing, individual units/components of a software were tested. The purpose is to validate that each unit of the software performs as designed. A unit has one or a few inputs and usually a single output. A unit may be an individual program, function, procedure, etc. which is further tested by software developers or independent testers.

Integration Testing In this level of software testing, individual units are combined and tested as a group. This testing exposes faults in the interaction between integrated units. Test drivers and test stubs are used to assist in Integration Testing.

System Testing In this level of software testing, a complete and integrated software is tested. The system's compliance with the specified requirements is evaluated

Chapter 8

RESULTS AND FINDINGS

8.1 Hypothesis

The pie diagram underneath mirrors the degree of guys and females who participated in this study. The research maintained a balance between males and females to conduct the study eradicating any sexual orientation predispositions from the findings.



Figure 8.1: Participation percentage for gender

8.1.1 Total Empathy vs Gender

On mapping the relation between gender and the total empathy score of all the male and female respondents the resultant graph was as seen in the below figure 8.2.

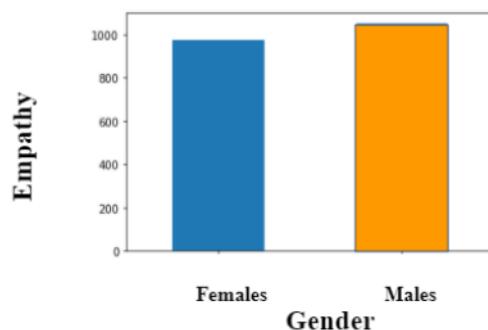


Figure 8.2: Gender of Participants Vs Empathy

This graph was mapped using the GroupBy property on the needed parameters. Accordingly, our data reflected gender wise 'Male' participants to be more prominent when empathy factor is concerned as compared to 'Female' participants.

8.1.2 The stress level in respondents

Similarly, to determine the levels of stress in the respondents below graph was plotted.

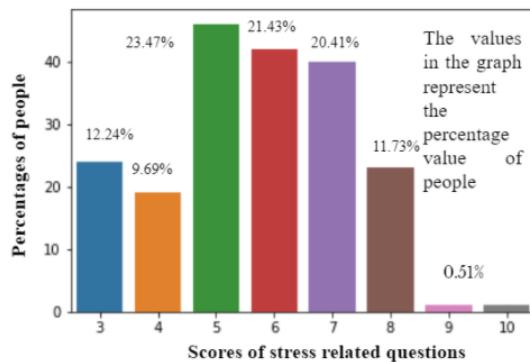


Figure 8.3: Stress levels

Here, the participants don't show a dangerous amount of stress but still, they are under some stress. The results indicated scores of 5, 6 and 7 comprise more than 50% of stress scores in the participants.

8.1.3 Can respondents control their emotions or not

To have an insight about control of emotions for the participating individuals the graph was seen as given in figure 8.4

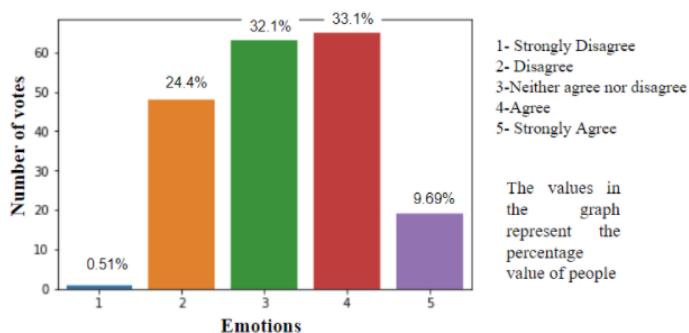


Figure 8.4: Control over emotions

The results reflected that 33% of respondents agreed to have the ability to control their emotions when needed.

8.1.4 Ability to express failure

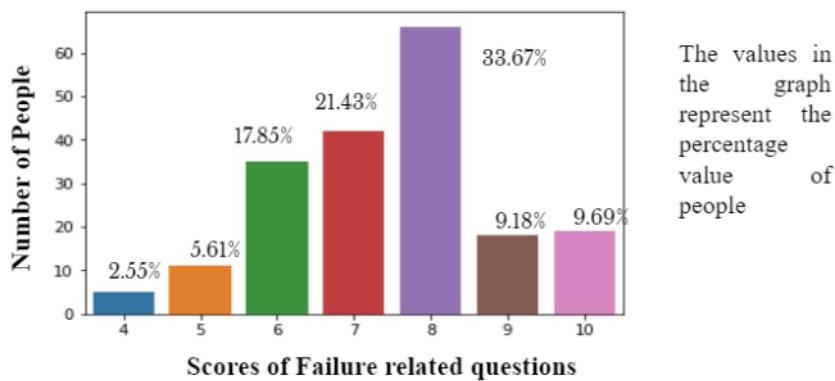


Figure 8.5: Expression to failures

The majority of people can express their failure and have perseverance. This can be seen through the above figure. This is because most of the people i.e. approx 65% with a score concluded that people were able to handle the failures.

8.1.5 Excited to learn

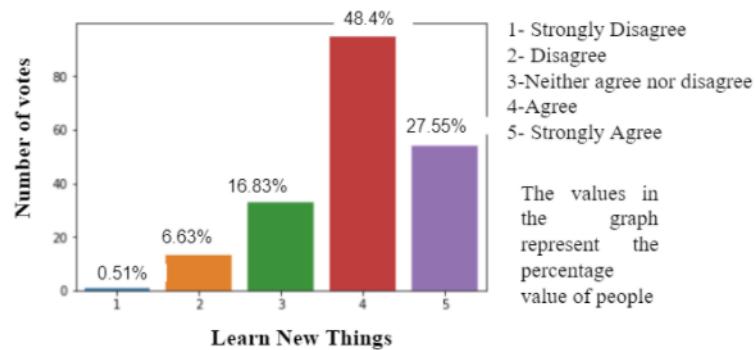


Figure 8.6: Excited to learn new thing

It can be reflected through the graph that 49% of the people agreed to be excited to learn new things when assigned a task.

8.1.6 Gender vs outcome for a good-paying job or further learning

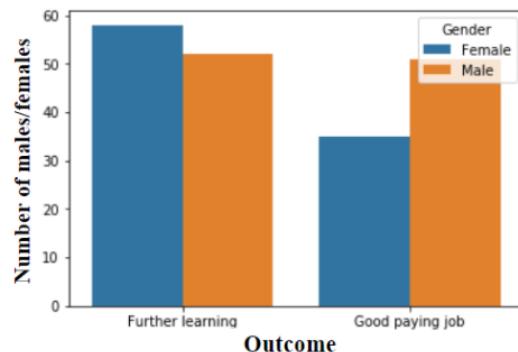


Figure 8.7: Gender vs outcome

Most of the Males were seen through the graph to be opting for a Good Paying Job in contrast with the Females who were tending to choose Further Learning.

Chapter 9

CONCLUSION AND FUTURE SCOPE

9.1 Conclusion

The idea of EI with its wide relevance in an association has extensive allure. Endeavors have been made in the past to characterize sufficient indicators of instructive and professional achievement, yet no observational discoveries and forecast conditions are accessible. A self-prepared questionnaire with the guidance of a psychologist was used to measure intelligence with the help of different skills such as interpersonal, intrapersonal, adaptability, general mood, and stress management. The primary need was to empirically assess the effectiveness of EI and its drivers for individuals representing diverse cultures of South Asia. The conventional machine learning algorithms like KNN, Naive Bayes, Logistic Regression, Decision tree, SVM are used to classify the emotions/moods of the user, out of which Logistic Regression resulted in the highest percentage accuracy among others. The purpose of the research is to create a platform that can practically be used to measure EI and its significant factors on professional growth. The traditional machine learning techniques were used, along with some preprocessing steps to break down the problem into different subparts first and then further process the results of subparts at a later stage.

Based on our analysis, it was found that males tend to opt for securing a job rather than going for higher studies while on contrary, females tend to choose further learning (higher education), along with that males were found to be more empathetic than females. The empirical analysis found that the following factors: social skills, motivation, stress management, self-awareness, and self-regulation play a significant role for the age group 20-30 years. The most vital factor impacting emotional intelligence was the social skills among every individual.

The study also concludes that EI is the aggregation of the innate characteristics and the knowledge and skill that individuals acquire and develop throughout their lifetime.

9.2 Future Scope

1. Gathering information utilizing face recognizing frameworks for better and exact outcomes for additional handling.
2. Broadening the extent of area and age gathering to foresee diverse achievement rates in various categories (other than work and future learning).
3. Creating a user friendly platform with other counseling strategies to enhance emotional intelligence in individuals

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