University Admit Eligibility Predictor

Team ID	PNT2022TMID50648
Project Title	University Admit Eligibility Predictor

Abstract

For a seeking after graduate understudy, shortlisting the schools could be an extraordinary issue. School students oftentimes have a tendency to consider over the opportunity that their profile suits the school prerequisites. PC programs are uncommonly thoroughly prepared and quicker than people in simply deciding. Besides, the expense of confirmation in a school is a ton, making it extremely pivotal for an understudy that their profile gets shortlisted for a college confirmation. A College expectation AI calculation is exceptionally profitable for school students to pick their fantasy college which likewise matches their resume. The proposed strategy considers different factors connected with the understudy and his score in different tests. The dataset incorporates LOR, GRE score, CGPA, TOEFL score, College rating, SOP, and so forth. In view of every one of these criterias, the admission to a specific college of an undergrad will be anticipated

Introduction

Today everything at the hour of confirmation of the understudies is done physically by ink and paper, which is exceptionally sluggish and consuming a lot of endeavors and time. In the cutting edge universe of innovation, PC are influencing our lives in additional ways than we most likely know about electronic administration keeping up with data of an instructive foundation, schools, other the rundown is interminable. The fundamental guideline behind the need of school confirmation framework is simple management of foundations. It can deal with the subtleties of understudies, for example, charge subtleties or imprints subtleties. This Understudy Information base has been planned taking into account the functional necessities to deal with an Understudies information. Besides, it gives security at item level as well as client level. Its plan focuses on 3 sorts of clients:

1. Administrator
2. Understudies
3. Account
4. Understudy segment.

This Data set follows an ordinary occasion stream seen in such an framework. The plan and execution of a complete understudy data framework and UI is to supplant the current paper records. This framework is expected for correspondence reason between clients of scholarly organizations.

This framework assists the overseer with simple getting to the data of understudies. This framework is additionally useful for the manager since he/she can without of a stretch carry changes to the records of the understudies.

The versatile application would require interfacing with the information base on a far off server utilizing Wi-Fi innovation. Our framework basically centers around building an proficient and easy to understand Android portable application for a Cloud based Intra-School Correspondence Data Framework utilizing Versatile Clients. The application will be introduced on

the clients (understudy/instructors) Cell phone. Here the idea of interesting ID is likewise included utilizing which the every understudy gets one interesting recognizable proof number by email. This id will serve to access his data or track down him from numerous students.

After XII, understudies wanting to take confirmations in proficient schools like designing deal with bunches of issues. Confirmations in designing universities in the territory of Maharashtra or any state depends on normal entry test (CET) and since more than 1.5lakh seats are to be apportioned in excess of 200 designing universities and over 35 distinct parts of designing , for understudies having a place with numerous classes like open, home college, outside home college, saved category(SC,ST, OBC and so on) the issue turns out to be more serious and understudies battle to comprehend which schools they are probably going to get conceded in, even later going through cut-off information of earlier years.

Numerous understudies fill wrong Choices and neglect to get confirmation. To limit the pressure of understudies we thought of the possibility of a PC helped technique which will assist the understudies with getting the rundown, everything being equal, in which they could get the confirmation at the snap of a button, making the confirmation cycle quick and simple.

Knowledge Acquired

By this project we have knowledge of the following,

- IBM Cloud
- IBM Watson
- Cloudant DB
- Jupyter Notebook

Project Objectives

School confirmation indicator is a help to numerous understudies. This helps the understudy not exclusively to help in finishing up the application shapes yet in addition give the understudies a thought regarding their future school by computing their cut off.Create understudy accounts and keep up with the information is really.

• View every one of the subtleties of the understudies.
• Reducetheworkloadininterviewthestudentsforselection
• Exercises like refreshing, change, erasure of records ought to be simpler.

Project Flow

A Flow Diagram (FD) is a traditional visual representation of the information flows within a system. A neat and clear FD can depict the right amount of the system requirement graphically. It shows how data enters and leaves the system, what changes the information, and where data is stored.
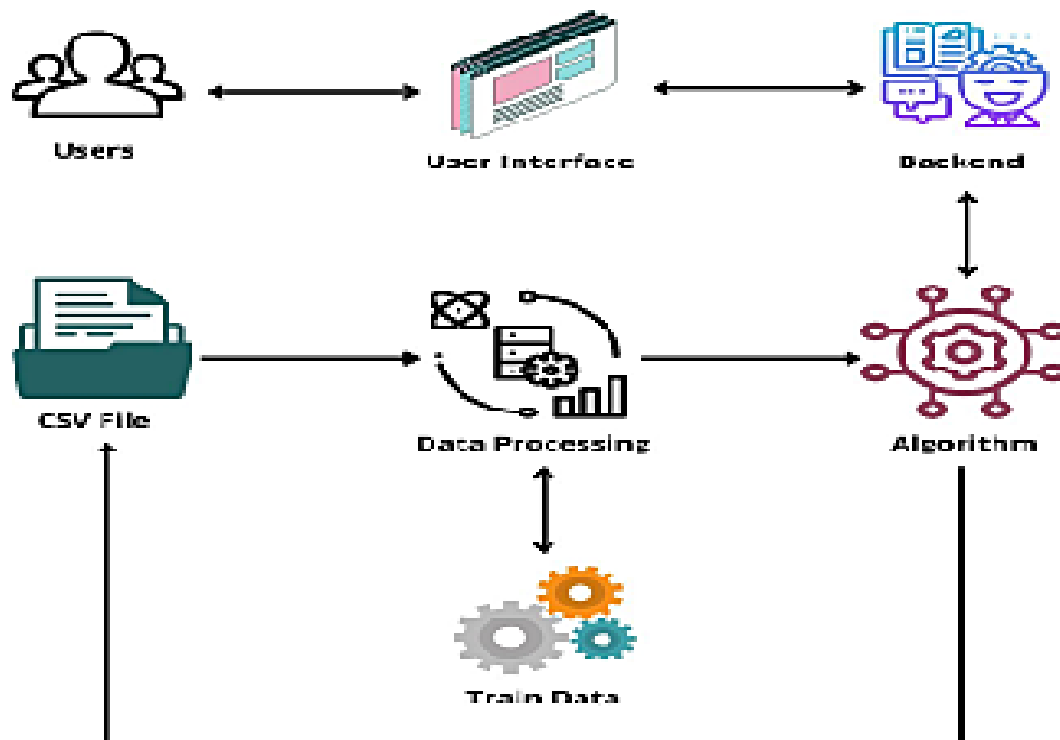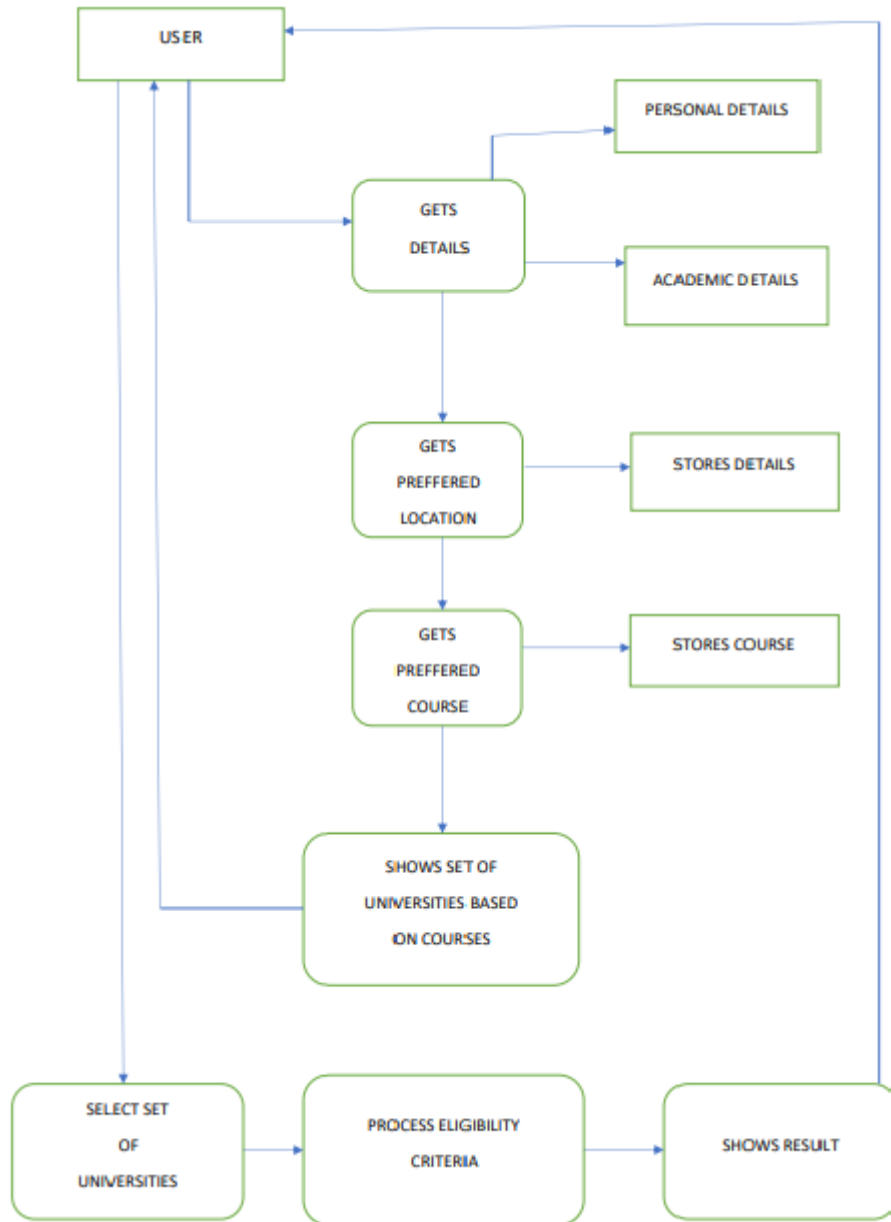
Problem Statement

- The problem statement is to design a college prediction/prediction system and to provide a probabilistic insight intocollege administration for overall rating, cut-offs of the colleges,admission intake and preferences of students.
- It has always been a troublesome process for students infinding the perfect university and course for their further studies.
- At times they do know which stream they want to get into, butitisnot easy for them to find colleges based on their academicmarksand other performances.
- We aim to develop and provide a place which wouldgiveaprobabilistic output of how likely it is to get into a universitygiven their details.

Idea Implementation

●Students are often worried about their chances of admission to University.
●The aim of this project is to help students in shortlisting universities with their profiles.
●The predicted output gives them a fair idea about their admission chances to a particular university.
●This analysis should also help students who are currently preparing or will be preparing to get a
better idea.

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Literature Survey

Paper 1: College admission problem for university dual education.
Publication Year : 2015
Author : Rita Fleiner, András Ferkai, Péter Biró
 This Paper deals with the Dual form of higher education training exists in Hungary since 2015. Students in a dual university programme complete their theoretical study at the university and participate in practical trainings at designated companies. In this paper we analyse the current recruitment process of the dual training, its relation to the classical and generalised stable matching problems. Possible alternatives for the current procedure are explored and a web application supporting the dual college admission procedure is presented.

Paper 2: Integer programming methods for special college admissions problems.
Publication Year : 2018
Author : K.Cs. Ágoston, P. Biró, and I. McBride.
 This Paper deals with We develop Integer Programming (IP) solutions for some special college admission problems arising from the Hungarian higher education admission scheme. We focus on four special features, namely the solution concept of stable score-limits, the presence of lower and common quotas, and paired applications. We note that each of the latter three special feature makes the college admissions problem NP-hard to solve. Currently, a heuristic based on the Gale-Shapley algorithm is being used in the Hungarian application. The IP methods that we propose are not only interesting theoretically, but may also serve as an alternative solution concept for this practical application, and other similar applications. We finish the paper by presenting a simulation using the 2008 data of the Hungarian higher education admission scheme.

Paper 3: Stable project allocation under distrubutional constraints.
Publication Year : 2016
Author : K.Cs. Ágoston, P. Biró, and R. Szántó.

This Paper deals with in a two-sided matching market when agents on both sides have preferences the stability of the solution is typically the most important requirement. However, we may also face some distributional constraints with regard to the minimum number of assignees or the distribution of the assignees according to their types. These two requirements can be challenging to reconcile in practice. In this paper we describe two real applications, a project allocation problem and a workshop assignment problem, both involving some distributional constraints. We used integer programming techniques to find reasonably good solutions with regard to the stability and the distributional constraints. Our approach can be useful in a variety of different applications, such as resident allocation with lower quotas, controlled school choice or college admissions with affirmative action.

Paper 4: Applications of matching models under preferences.
Publication Year : 2017
Author : P. Biró.

This Paper deals with Matching problems under preferences have been studied widely in mathematics, computer science and economics, starting with the seminal paper by Gale and Shapley (1962). A comprehensive survey on this topic was published also in Chapter 14 of the Handbook of Computational Social Choice (Klaus et al., 2016), and for the interested reader we recommend consulting the following four comprehensive books on the computational (Gusfield and Irving, 1989; Manlove, 2013) and game-theoretical, market design aspects (Roth and Sotomayor, 1990; Roth, 2015) of this topic. In this chapter our goal is to give a general overview of the related applications.

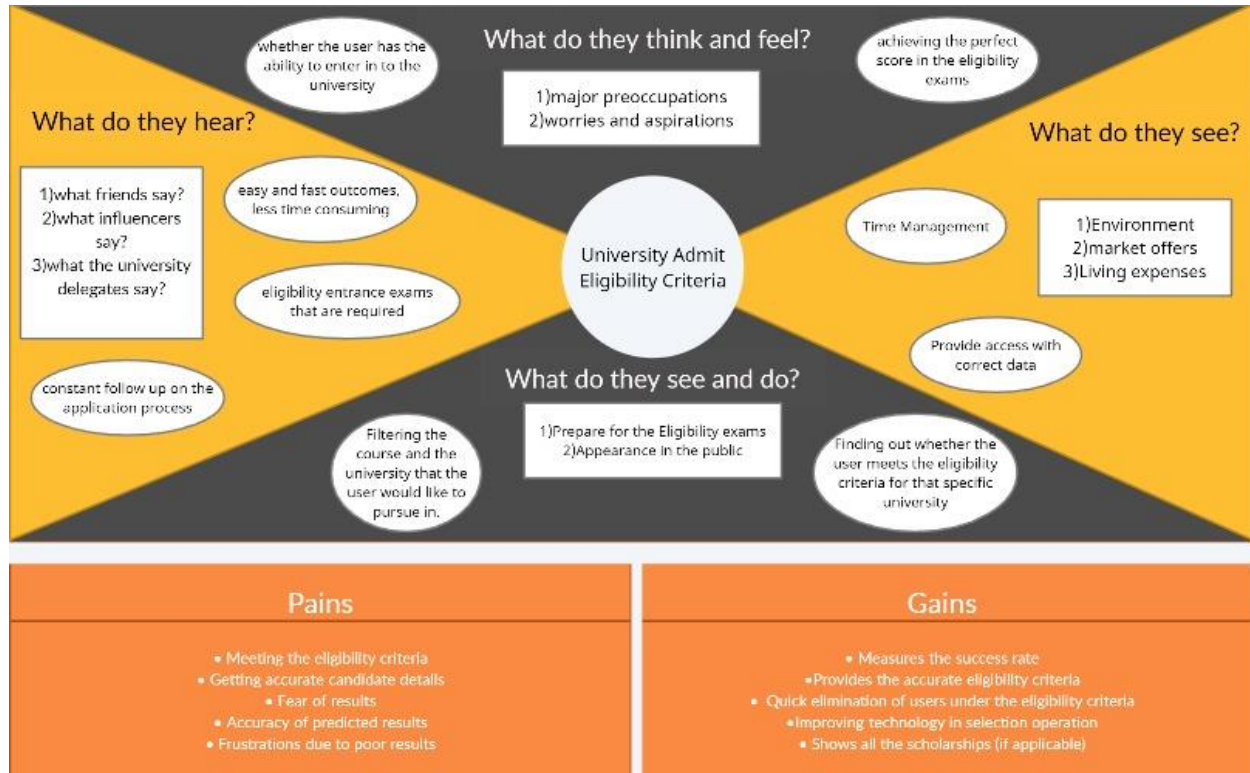**Paper 5**: University Admission Practices.
Publication Year : 2022
Author : P. Biró

This Paper deals with Admission to universities is organised in a centralised scheme in Hungary. In this paper we investigate two major specialities of this application: ties and common quotas. A tie occur when some students have the same score at a programme. If not enough seats are available for the last tied group of applicants at a programme then there are three reasonable policies used in practice:

1) All must be rejected, as in Hungary

2) All can be accepted, as in Chile

3) A lottery decides which students are accepted from this group, as in Ireland. Even though student-optimal stable matchings can be computed efficiently for each of the above three cases, we developed (mixed) integer programming (IP) formulations for solving these problems, and compared the solutions obtained by the three policies for a real instance of the Hungarian application from 2008.

In the case of Hungary common quotas arise from the faculty quotas imposed on their programmes and from the national quotas set for state-financed students in each subject. The overlapping structure of common quotas makes the computational problem of finding a stable solution NP-hard, even for strict rankings. In the case of ties and common quotas we propose two reasonable stable solution concepts for the Hungarian and Chilean policies. We developed (mixed) IP formulations for solving these stable matching problems and tested their performance on the large scale real instance from 2008 and also for one from 2009 under two different assumptions. We demonstrate that the most general case is also solvable in practice by IP technique.

Empathy Map

What do they think and feel?

whether the user has the ability to enter in to the university

achieving the perfect score in the eligibility exams

1)major preoccupations
2)worries and aspirations

What do they hear?

What do they see?

1)what friends say?
2)what influencers say?
3)what the university delegates say?

easy and fast outcomes, less time consuming

Time Management

1)Environment
2)market offers
3)Living expenses

University Admit Eligibility Criteria

eligibility entrance exams that are required

Provide access with correct data

constant follow up on the applitation process

What do they see and do?

Filtering the course and the university that the user would like to pursue in.

1)Prepare for the Eligibility exams
2)Appearance in the public

Finding out whether the user meets the eligibility criteria for that specific university

Pains	Gains
• Meeting the eligibility criteria • Getting accurate candidate details • Fear of results • Accuracy of predicted results • Frustrations due to poor results	• Measures the success rate •Provides the accurate eligibility criteria • Quick elimination of users under the eligibility criteria •Improving technology in selection operation • Shows all the scholarships (if applicable)

Project Design Phase

1.CUSTOMER SEGMENT(S) Students who have recently completed their schooling or college and aspire to get admitted into prominent universities	6.CUSTOMER CONSTRAINTS Customers might not trust the accuracy or reliability of the predictor and this could prevent them from using it.	5.AVAILABLE SOLUTIONS Apart from factors like grades and GPA we will also considered IELTS/TOFEL,GRE that plays a major role in the admission process of some universities their by further enhancing the reliability of the predictor.
2.JOBS-TO-BE-DONE Data collection is probably the most important step in designing the predictor hence it must be ensured that it is done properly.	9.PROBLEM ROOTCAUSE The reliability of the predictor might be affected if the collected data is found to be inaccurate or not enough factors are considered to judge the eligibility.	7.BEHAVIOUR The most important aspect of the predictor from a customer point of view is its accuracy since they would go through with their admission based on its results.
3.TRIGGERS User can be provided with comparisons between the required scores versus their actual scores	10.YOUR SOLUTION Design the predictor with the help of the data collected and ensure that it is accurate or reliable also make sure that the data collected from the user is safe and secure.	8.CHANNELS OF BEHAVIOUR Customers might search for reliable eligibility predictor that are available online and rate them based on their liking.
4.EMOTIONS:BEFORE/AFTER Users would feel that they are in complete control in the admission process since they can whole heartedly trust the predictor.		Students would discuss among their peer group about such predictor and if they find one

SN.NO	PARAMETERS	DESCRIPTION
1	PROBLEM STATEMENT	Students do now not have a good deal concept about the strategies ,requirement and details of the universities they want to sign up for , so that they are looking for assist from various academic consultancies to help them relaxed admission within the universities primarily based on their profile for which the scholars are meant pay a hefty amount us consultancy rate
2	SOLUTION	Providing an correct prediction for the students admission into the college of their preference based totally on various parameters like IELTS ,GRE ,Academic performance and so forth
3	UNIQUENESS	It appears there are internet packages for predicting the eligibilities standards of a pupil for getting into their dream universities and additionally offer customised insights on particular area where in they can enhance.
4	SOCIAL IMPACT	It enables pupil in making the right choice for deciding on the colleges . It cuts the fee of consultancy services by way of growing a direct connection between students and universities.
5	BUSINESS MODEL	Universities are beneath titanic strain to admit greater students and make sure student achievement to conquer the strain they could employ predictive fashions which assist them to ease the consumption technique of college students to improve performances.
6	SCALABILITY	Further to lessen the massive pressure faced by using the

		students to get admitted in a college .The model also can be evolved to recollect the college unique examination and to preserve the modern day eligibility standards .

Output

Enter your details and get probability of your Admission

Enter your details

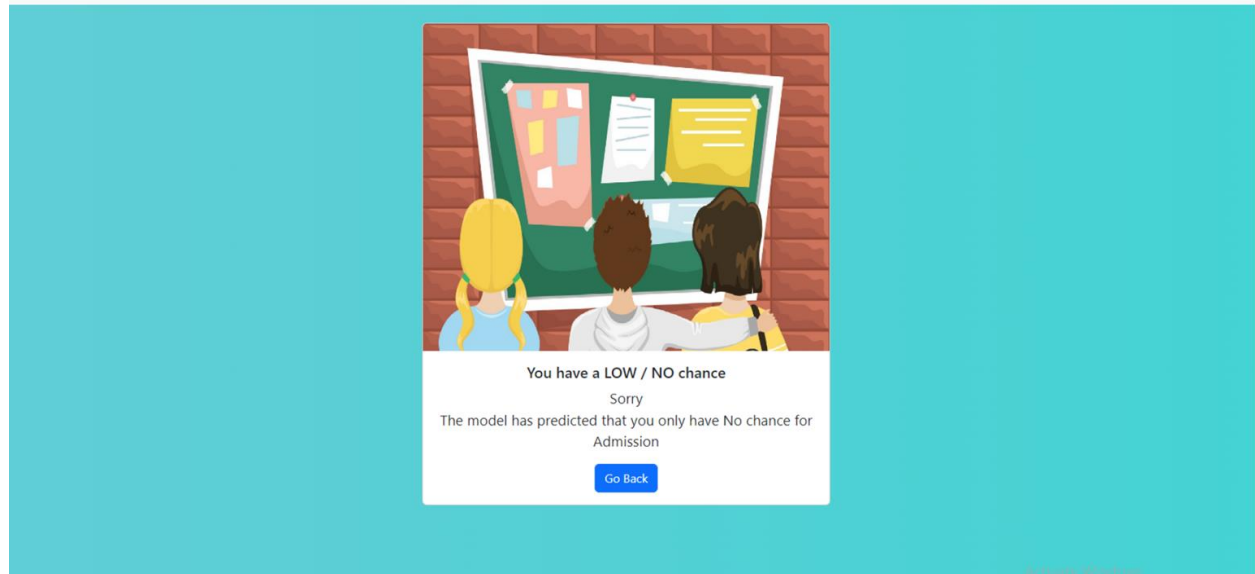|	
GRE Score:	300
TOFEL Score:	100
University Rating:	1
SOP:	4
LOR:	4
CGPA:	8.15
Research:	● Yes ○ No

Predict

You Have Chance

The model has predicted that you have chance for Admission

Go Back

Conclusion

A model was developed to determine the admission of a student to the interested universities. The following parameters were taken into consideration:

- GRE Score
- TOEFL Score
- Ranking
- SOP
- LOR
- CGPA

From the validations, we can find out that the above parameters greatly contributed in determining the "Chance of Admit" into an university. Different models - Multiple Linear Regression, Decision Tree Regression, Random Forest Regression were taken into consideration. Out of the 3 models, Multiple Linear Regression outperformed other models with a R^2 score of 0.819. Hence Multiple Linear Regression was adopted in predicting

the results. This model could likely be improved by gathering additional data of students from different universities which has similar selection criteria to choose the candidates for Master's program.

Future scope

Future Scope of the project can be as follows:

●A future update could have chat space where candidates, faculties, current students of the university and alumni can interact and candidates can get their doubts resolved instantly.
● Get in touch with grad-schools' and professors and determine other important factors that play a key role in increasing the chances of admission.
● To deal with huge volumes of data in the future (Both - applicants and university details), cloud based storages (IBM cloud, AWS, GCP, AZURE) and NoSQL databases (MongoDB, Redis, etc.) could be used instead of the traditional RDBMS storage.
●Alternatively, distributed big-data processing techniques could be explored if the no. of users using the website increases exponentially during the course of time.