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PROJECT REPORT (2022-23)

1.Name of Department	COMPUTER SCIENCE
2.Name the part of the syllabus covered for Project Work	Paper Code-CMSADSE06P Paper Name- Project
3. Duration	March to June 2023
4.Number of Students attended and mention the semester details	Number of students: 11(Sem VI)
5. Number of Faculty members and NTS attending	Number of Faculty Members: 2 NTS: NA

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WEST BENGAL STATE UNIVERSITY



PROJECT ON PERFORMANCE MEASUREMENT OF MINIMAX AND ALPHA-BETA PRUNING USING TIC-TAC-TOE GAME.

- <u>COURSE _> Computer Science(H).</u>
- Sem VI (2023) Honours.
- <u>PAPER NAME > <u>PROJECT</u>.</u>
- <u>PAPER CODE</u> > <u>CMSADSE06P.</u>
- <u>ROJJ > 6231130.</u>
- <u>NO > 17772.</u>
- UNIVERSITY REGISTRATION NO > 1292011400319.

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Project Report: Performance Measurement of Minimax and Alpha-Beta Pruning using Tic-Tac-Toe Game

1. Introduction

The field of Artificial Intelligence (AI) has witnessed significant advancements, particularly in the domain of game playing. The Minimax algorithm and its enhancement, Alpha-Beta Pruning, are widely used in creating game-playing AI agents. This project aims to explore and compare the performance of these algorithms in playing the classic game of Tic-Tac-Toe. Tic-Tac-Toe is a simple yet strategic game that serves as an ideal platform to evaluate the efficiency and effectiveness of these AI algorithms. By analyzing the number of explored nodes and the execution time, we can assess the strengths and weaknesses of each algorithm in the context of this game.

In this project we will analyze the performance of both the algorithm by using two kinds of tic-tac-toe game, one the classic 3x3 one and the other one is a special 4x4 tic-tac-toe game with 3 matching sequence. We will observe what is the performance difference of the AI algorithms in both version of tic-tac-toe game.

3x3 Tic-Tac-Toe: The 3x3 version of Tic-Tac-Toe is the quintessential representation of the game. Played on a 3x3 grid, players take turns placing their symbols, usually 'X' and 'O', in an attempt to create a line of three symbols in a row, column, or diagonal. Its straightforward rules and limited grid size make it an ideal introduction to strategic thinking for beginners.

4x4 Tic-Tac-Toe: In contrast, the 4x4 Tic-Tac-Toe takes the game a step further by increasing the grid size to 4x4. While the basic objective remains the same – forming a line of three symbols – the larger grid introduces a heightened level of complexity. With more cells and increased pathways for victory, player and the algorithms must anticipate moves more strategically and navigate a broader range of potential winning combinations.

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Example of Wining combination in a 3x3 game:



In the basic tic-tac-toe to win player or the algorithm have to form a line of three symbols in a row, column, or diagonal.

Example of Wining combination in a 4x4 game:



In the advance version of 4x4 tic-tac-toe, to win player or the algorithm have to form a line of three symbols in a row, column, or diagonal but in a 4x4 grid where there are more combination of wining posibilities and more grid points to chose input from.

We will implement minimax and alpha beta pruning in both version of the game to see the preformence difference between them.

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2. Background

2.1 Minimax Algorithm:

Minimax is a decision-making algorithm commonly used in two-player games with perfect information. In such games, both players have complete knowledge of the current game state and all past moves. The Minimax algorithm operates on the principle of exploring all possible moves in a game tree and assigns a score to each leaf node based on the game's outcome (win, lose, or draw). It assumes that both players play optimally, trying to maximize their own gains and minimize their opponent's gains. By backtracking through the game tree, the algorithm chooses the best move for the current player.

The Minimax algorithm's basic concept is to search the entire game tree, which can be computationally expensive in games with large search spaces. For Tic-Tac-Toe, the search space is relatively small, making it feasible to implement the basic Minimax algorithm effectively.

Algorithm:

```
function minimax(node, depth, maximizingPlayer) is
if depth = 0 or node is a terminal node then
return the heuristic value of node
if maximizingPlayer then
value := -∞
for each child of node do
value := max(value, minimax(child, depth - 1, FALSE))
return value
else(* minimizing player *)
value := +∞
for each child of node do
value := min(value, minimax(child, depth - 1, TRUE))
return value
```

(* Initial call *) minimax(origin, depth, TRUE)

2.2 Alpha-Beta Pruning:

Alpha-Beta Pruning is an enhancement to the Minimax algorithm that reduces the number of nodes explored without affecting the final decision. It works by maintaining two values, alpha and beta, during the tree traversal. The "alpha" value represents the best (highest) option found for the maximizing player, while the "beta" value represents the best (lowest) option for the minimizing player.

During the search, if a node's evaluation exceeds the "beta" value for a minimizing player or falls below the "alpha" value for a maximizing player, the algorithm can prune the remaining branches below that node. This pruning ensures that the algorithm does not explore unpromising branches, significantly improving its efficiency.

Algorithm:

```
function alphabeta(node, depth, \alpha, \beta, maximizingPlayer) is
if depth == 0 or node is terminal then
return the heuristic value of node
if maximizingPlayer then
     value := -\infty
for each child of node do
        value := max(value, alphabeta(child, depth -1, \alpha, \beta FALSE))
if value > \beta then
break(* \beta cutoff *)
        \alpha := \max(\alpha, value)
return /alue
else
     value = +\infty
for each child of node do
        value := min(value, 1)phabeta(child, depth -1, \alpha, \beta TRUE))
if value < c then
break(* a cutoff *)
         := \min(\beta, value)
return value
```

```
(* Initial call *)
alphabeta(origin, depth, -∞, +∞, TRUE)
```

3. Methodology

3.1 Implementation:

The Tic-Tac-Toe game and both algorithms (Minimax and Alpha-Beta Pruning) were implemented in a high-level programming language Python. The implementation was designed to allow a human player to play against an Al using both algorithms. The game's user interface provided a visual representation of the game board, allowing the human player to make moves using mouse clicks.

Implementation of heuristic function of 3x3 tic-tac-toe :

For valid comparison the heuristic function to calculate score(node) of the both minimax algorithm and alpha_beta algorithm are same so they both requre same amount of resources.

Below I gave the code of the heuristic function:



In here we simply check whether in the game tree computer successfully get an wining combination or not, if they do, they get +10 as heuristic score, on the other hand if user can able to generate a wining sequence then he will get score of -10. and at last if the game is then the score is 0.

Implementation of heuristic function of 4x4 tic-tac-toe :

As written above the heuristic function of 4x4 tic-tac-toe game's minimax and alpha-beta version are same, but they are a bit more complex then the 3x3 ones, because a 4x4 tic-tac-toe game tree can able to expand far more than the 3x3 ones,

Below I gave the code of the heuristic function:



```
elif(real_pos[element[0]-1] == opponent and real_pos[element[1]-1] == opponent and real_pos[element[2]-1] == opponent):
       return ('leafNode',-100)
       if(real_pos[element[0]-1] == blank and real_pos[element[1]-1] == comp and real_pos[element[2]-1] == comp):
           score +=15# heuristic value for 'o' computer
       elif(real_pos[element[0]-1] == comp and real_pos[element[1]-1] == blank and real_pos[element[2]-1] == comp):
           score +=15
       elif(real_pos[element[0]-1] == comp and real_pos[element[1]-1] == comp and real_pos[element[2]-1] == blank):
           score +=15
       elif(real_pos[element[0]-1] == blank and real_pos[element[1]-1] == user and real_pos[element[2]-1] == user):
            score -=15 # heuristic value for 'x' computer
       elif(real_pos[element[0]-1] == user and real_pos[element[1]-1] == blank and real_pos[element[2]-1] == user):
            score -=15
       elif(real_pos[element[0]-1] == user and real_pos[element[1]-1] == user and real_pos[element[2]-1] == blank):
           score -=15
return ('notLeafNode', score) #stating that it is not a leaf node and there is ferther way
```

In here we check whether in the game tree, computer successfully get an wining combination or not, if they do, they get +100 as heuristic score, on the other hand if user can able to generate a wining sequence then he will get score of -100. and at last if the game is tie then the score is 0.

Additionally if computer manage to get any combination where he got 2 elements from a 3 elements wining sequence he will get +15 sore, and for the user he will get -15.

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4. Experimental Setup

The experiments were conducted on a computer with the following specifications:

- CPU: intel core i3
- RAM : 8gb

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- Operating system: Windows 10
- Language : python

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5. Results

The experiments were conducted by running the Tic-Tac-Toe game against both algorithms separately for each test case. The results were recorded,

First, for 3x3 tic-tac-toe game I recorded performance metrics(both the number of explored nodes and execution time)using minimax and alpha beta pruning to see which preforms better. For fair comparison, both the time the user will give the same input.

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<u>Computer's move</u> time taken for the minimax algo: 0.191026s total number of node visited: 55504

Computer's move

time taken for the alpha_beta algo: 0.03187310s total number of node visited: 6138





As we can see from the following observation, for same input, both the algorithms will give same move as output but the preformance metrics are different.

For minimax the number of node visited are greater than the alpha-beta pruning algorithm, But the execution time in 3x3 tic-tac-toe for both the algorithm is kinda similar.

It improvise tha for the 3x3 tic -tac-toe the alpha-beta pruning algorithm is a little efficient than the minimax algorithm.

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Now we have done the same experiment for the 4x4 tic-tac-toe, we recorded the performance metrics(both the number of explored nodes and execution time)using minimax and alpha beta pruning to see which preforms better. For fair comparison. both the time the user will give the same input.



<u>User input</u>

<u>user input</u>



Computer's move

Computer's move

time taken for the minimax algo: 8.9612218s

total number of node visited : 372051

time taken for the alpha_beta algo: 0.6323613s

total number of node visited : 23376



<u>User input</u>

<u>user input</u>



Computer's move

time taken for the minimax algo: 3.4456828s

total number of node visited : 132429

Computer's move

time taken for the alpha_beta algo: 0.1248282s

total number of node visited: 4133



User input

<u>user input</u>



Computer's move

Computer's move

time taken for the minimax algo: 1.1046676s

total number of node visited : 47657

time taken for the alpha_beta algo: 0.057936s

total number of node visited: 1894



User input

<u>user input</u>



Computer's move

time taken for the minimax algo: 0.2560964s

total number of node visited : 11837

Computer's move

time taken for the alpha_beta algo: 0.0341719s

total number of node visited : 979



<u>User input</u>

<u>user input</u>



Computer's move

Computer's move

time taken for the minimax algo: 0.0248778s

total number of node visited : 1121

time taken for the alpha_beta algo: 0.012187s

total number of node visited : 330

As we can see from the following observation, for same input, both the algorithms will give same move as output but the preformance metrics are very different for the 4x4 game.

For minimax the number of node visited are much greater than the alpha-beta pruning algorithm, and also the execution time is For minimax is much greater than the alpha-beta pruning algorithmtic.

It improvise that the alpha-beta pruning algorithm is much more efficient than the minimax algorithm, for a more complex games with larger search spaces.

To achieve greater accuracy we will test those programs multiple times:-

After running the programs multiple time the following observations were made:

Execution time difference between minimax and alpha-beta pruning algorithm measure in 3x3 and 4x4 game:-

	3x3 minmax			3x3 alpha_beta			4x4 minmax			4x4 alpha_beta		
observation no	first move	second move	third move	first move	second move	third move	first move	second move	third move	first move	second move	third move
1	0.294957	0.003831	0.000223	0.028164	0.003145	0.000337	9.263667	3.179981	1.487459	0.576141	0.103277	0.0464902
2	0.291479	0.003607	0.000413	0.026602	0.001341	0.000224	8.973975	3.270207	1.284134	0.645763	0.061067	0.0129015
3	0.289378	0.003980	0.000176	0.037362	0.002801	0.000215	9.757364	2.697381	0.860252	0.5547	0.105438	0.054253
34	0.235434	0.005161	0.000234	0.032461	0.004347	0.000372	8.861584	2.515942	0.597761	0.67299	0.151809	0.0328236
5	0.193342	0.003758	0.000179	0.038612	0.001295	0.000163	9.800452	3.109311	0.671873	0.683854	0.152278	0.039434
	0.203024	0.003429	0.000175	0.032678	0.001511	0.000179	9.379912	3.980824	1.425754	0.223997	0.1720684	0.0419241
7	0.215759	0.006438	0.000207	0.023285	0.001363	0.000158	9.028996	3.009351	0.542635	0.473978	0.173144	0.031657
8	0.225495	0.003487	0.000168	0.022764	0.001591	0.000164	9.193013	3.649307	0.668021	0.668813	0.125949	0.048065
9	0.338527	0.004638	0.000193	0.041242	0.000843	0.000113	9.304999	2.393814	0.576861	0.60455	0.102446	0.05984
10	0.280359	0.004258	0.000164	0.027713	0.001308	0.000157	9.310627	3.699277	1.367265	0.696729	0.08475	0.02827
average	0.2567754	0.0042587	0.0002132	0.0310883	0.0019545	0.0002082	9.2874589	3.1505395	0.9482015	0.5801515	0.12322264	0.03956584

Difference of number of node visited between minimax and alpha-beta pruning algorithm measure in 3x3 and 4x4 game:-

	3x3 minmax			3x3 alpha_beta			4x4 minmax			4x4 alpha_beta		
observation no	first move	second move	third move	first move	second move	third move	first move	second move	third move	first move	second move	third move
1	59704	926	60	6138	373	36	372051	132429	47657	23376	4620	1857
2	55504	932	50	6200	368	55	372051	134717	52331	26785	2504	431
3	59704	934	46	6200	368	55	372051	104393	34247	23376	4133	1894
4	63904	1464	60	7641	635	52	372051	104393	23319	27678	5418	1406
5	55504	1054	44	6138	339	38	372051	129153	27377	27678	5418	1480
6	59704	1052	46	7641	307	40	385779	157565	54239	8674	6505	1460
7	63904	1404	52	6138	339	38	372051	130753	24312	18387	6998	1435
8	59704	1052	46	6200	459	42	372051	151805	30089	23376	4133	1894
9	55504	932	50	9785	237	29	372051	104393	23319	23376	4620	1857
10	63904	1228	44	6138	339	38	372051	151805	42325	26785	3678	1216
average	59704	1097.8	49.8	6821.9	376.4	42.3	373423.8	130140.6	10573.2	22949.1	4802.7	1493

From the above chart we can see that the average difference between t

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Data of Wining and losing of minimax and alpha-beta pruning algorithm measure in 3x3 and 4x4 game : -

	3x3 minmax	3x3 alpha_beta	4x4 minmax	4x4 alpha_beta		
observation no	wining	wining	wining	wining		
1	0.5	0.5	0	1		
2	0.5	0.5	1	1		
3	0.5	0,5	0	0		
4	0.5	0.5	0	0	win	1
5	1	0.5	1	0	lose	0
6	0.5	0.5	0	1	draw	0.5
7	0.5	0.5	1	0		
8	0.5	0.5	1	1		
9	0.5	1	0	0		
10	1	0.5	1	0.5		
11	0.5	0.5	0	1		
12	0.5	0.5	0	0		
13	0.5	0.5	1	1		
14	0.5	1	1	0		
.15	0.5		1	1		
total	8.5	9	8	7.5		

As we can see the sum of wining score in 3x3 tic-tac-toe's minimax and alpha-beta version are very much similar, and also the sum of wining score in 4x4 tic-tac-toe's minimax and alpha-beta version are also similar. As because their heuristic function is same and given same input they provide the same output, so their wining performance is similar.

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From the above tables we observe that :-

The Minimax algorithm performed reasonably well in terms of choosing the optimal move. However, it explored a considerable number of nodes, especially in scenarios where the game tree was extensive. As a result, the execution time for the Minimax algorithm was relatively high, making it less efficient compared to Alpha-Beta Pruning.

The Alpha-Beta Pruning algorithm significantly reduced the number of explored nodes compared to the basic Minimax algorithm. This improvement became more evident as the game tree complexity increased. Moreover, Alpha-Beta Pruning consistently demonstrated faster execution times than the basic Minimax algorithm.

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7. Conclusion

In conclusion, the performance measurement of Minimax and Alpha-Beta Pruning using the Tic-Tac-Toe game demonstrated the superiority of Alpha-Beta Pruning in terms of efficiency. By reducing the number of explored nodes, Alpha-Beta Pruning outperforms the basic Minimax algorithm while producing the same optimal gameplay. These findings reinforce the importance of efficient search algorithms, such as Alpha-Beta Pruning, in creating competitive and strategic AI agents for various two-player games. Additionally, the knowledge gained from this project can be extended to more complex games with larger search spaces, where efficient decision-making becomes paramount for a successful AI player.

References:-

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https://www.geeksforgeeks.org/finding-optimal-move-in-tic-tac-toe-using-minimax-algorithm-in-game-theory/

https://www.researchgate.net/publication/343021763 An Intuitive Implementation Of Alpha-Beta Pruning Using Tic-Tac-Toe

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PROJECT REPORT(2022-23)

1.Name of Department	COMMERCE
2.Name the part of the syllabus covered for Project Work	Paper Code-FACACOR14T Paper Name-Research method and Project work
3. Duration	February to June,2023
4.Number of Students attended and mention the semester details	39(Sem -VI)
5. Number of Faculty members and NTS attending	Faculty: Three NTS: Nil

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PROJECT REPORT

(Submitted for the Degree of B.Com (hons) in Accounting and Finance under the West Bengal State University)

TITTLE OF THE PROJECT

A STUDY ON DIGITAL PAYMENT APPLICATIONS IN INDIA

Submitted by:

Name of Candidate: Tanushree Das.

Registration No. 1292021400346

Roll:6232130

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College Roll No: 159

Name of the College: PRASANTA CHANDRA MAHALANOBIS MAHAVIDYALAYA

Supervised by:

Name of the Supervisor: Prof. Parthasarathi Dutta.

Name of the College: PRASANTA CHANDRA MAHALANOBIS MAHAVIDYALAYA

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ACKNOWLEDGEMENT

It is a great pleasure to present this project on

Study on "A STUDY ON DIGITAL PAYMENT APPLICATIONS IN INDIA"

At the successful completion of this project, I would like to express my sincere gratitude to all the people without whose support this project would not be completed.

At the onset, I would like to thank West Bengal State University, my institute "PRASANTA CHANDRA MAHALANOBIS MAHAVIDYALAYA, Kolkata

I am very Thankful to my supervisor Prof. Parthasarathi Dutta For giving us the opportunity to understand the research project at the very under graduate level.

I would also like to acknowledge the constant help and encouragement of my parents, who have given their valuable suggestions and expert guidance and support.

I would also like to thank who have directly or indirectly helped us in the preparation of this report.

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<u> Annexure – I</u>

Supervisor's Certificate

This is to certify that TANUSHREE DAS a student of B.com. Honors in Accounting And finance, of PRASANTA CHANDRA MAHALANOBIS MAHAVIDYALAYA the West Bengal State University, Barasat, has worked under my supervision and guidance for her project work and prepared a Project Report with the title A STUDY ON DIGITAL PAYMENT APPLICATIONS IN INDIA.

The project report, which she is submitting is her genuine and original work to the best of my knowledge.

Signature: Palhapelethi Dutta

Name: Parthasarathi Dutta. ASS o el de Profession

PLACE: KOLKATA

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DATE: 68-8-2023

Name of the College: PRASANTA CHANDRA MAHALANOBIS MAHAVIDYALAYA

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Annexure-II

Student's Declaration

I hereby declare that the project work with the title A STUDY ON DIGITAL PAYMENT APPLICATIONS IN INDIA submitted by me for the partial fulfilment of the degree of B.com. Honors is Accounting and finance under the West Bengal State University is my original work and has not been submitted earlier to any other university/Instruction for the fulfillment of the requirement for any case of study.

I also declare that no chapter of this manuscript in whole or in part has been incorporated in this report from earlier work done by others or by me. However, extracts of any literature which has been used for this report has been duly acknowledged providing details of such literature in the references.

SIGNATURE

PLACE: KOLKATA DATE: 08 - 08 - 2023 Tanushice Das, NAME: TANUSHREE DAS. ADDRESSES: 3, Bonhoogly Government Colony, Kolkata- 700108 REGISTRATION NO: 1292021400346 ROLL: 6232130 No:17694 College roll no. 159 4 | Page

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1. INTRAODUCTION

1.1 BACKGROUND:-

Now-a-days world is becoming digitalized in every field and one of the best example of this is various countries in the world are moving towards becoming a cashless society. A cashless society is the one which doesn't use cash for any of its transaction instead all the transactions are done digitally. There are various countries in the world which have more than 50% of their transactions through cashless methods.

In India 98% of the total transactions used to be done through cash but after the Demonetization of the Government on Nov 8 2016, our country has also started getting steered towards a cashless society. Due to the Demonetization act already existing mobile payment applications came into the limelight like Paytm, Google pay, phone pe etc.

The Digital India program is a flagship agenda of the Government of India with vision to transform India into a digitally empowered society and a knowledge economy. "Faceless, Paperless, Cashless is one of the professed role of Digital India.

Government of India is also encouraging various digital payment apps such as Aadhaar Payment app, UPI App, Bharat Interface for Money (BHIM) app along with private sector apps like Paytm, MobiKWik, free charge etc. Such new apps are beneficial to transfer funds across various parts of our country. Digital payments industry in India is growing on a rapid pace providing a highly attractive platform for foreign investors to invest in India.

1.2 Need for Study :-

- To study the consumer behavior towards using digital payment apps.
- To study the benefits and safety of using digital payment apps.
- To study the issues faced by the customers towards digital payment apps.
- It also determines the customers' adoption towards digital transactions.
- To study the importance of digital payment apps among customers.

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1.3 LITERATURE REVIEW :-

1) According to Mamta, Prof. Hariom Tyagi and Dr. Abhishek Shukla (2016): The article entitled "The Study of Electronic Payment Systems". This study aims to identify the issues and challenges of electronic payment system and offer some solutions to improve the e-payment quality. The successful implementation of electronic payment system depends on how the security and privacy dimensions perceived by consumers as well as sellers are popularly managed in turn would improve the market confidence in the system.

2) According to Sujith T S, Julie C D (2017): The article entitled "Opportunities and Challenges of E-Payment System in India". This study aimed to identify the issues and challenges of electronic payment systems and offer some solutions to improve the e-payment system. E-Payment system not only provides more opportunities but many threats also. The study found that, the reach of mobile network, Internet and electricity is also expanding digital payments to remote areas. This will surely increase the number of digital payments.

3) Ahuja & Joshi (2018): Have studied about the customer perception concerning Mobile wallets. In this study they examined that the factors exploration technique is used to classify the factors which influence customer opinion towards Mobile wallets. The study has been conducted about the different types of mobile wallets in India. The data is collected from both secondary data and primary data.

4) Anshari, Muhammad, et al. (2021): Adoption of e-wallet can potentially enhance the efficiency of financial institutions and the provision of new services for the convenience of the customers. The youngsters really adapted to this payment apps. It really satisfy the customers in easy transaction and payment.

1.4 OBJECTIVE OF STUDY:-

Research objectives state or describe what the research is trying to achieve or what we expect to achieve by the project. The objectives of the study gives a brief idea about the areas of the research which is studied. Research objectives help in the formulation of Hypothesis for the study and it also helps in narrowing down the research and helps in focusing on the point.

Here are some of the objectives of the study:-

1.To study the impact of digital payment applications on consumers.

2.To analyze the problems faced by the users while using digital modes of payment.

3.To know whether going cashless has helped the Indian economy.

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1.5 RESEARCH METHODOLOGY:-

Research Methodology is a way to solve the research problem in a systematical way. The research strategy which forms the basic structure of the entire research project is methodology which helps in identifying the methods to be used. Research methods and Research Methodology are two different concepts which has to understood research methods can be understood as all the methods or techniques that will be used in the research project, various research types has various methods and techniques. Research Methodology forms the base of every research and the scope of research methodology is much wider than that of research methods because research methodology also means specifying the logic behind the methods or the techniques we use to conduct a research.

Research Methodology also explains how to conduct a research, how to find the information and how to present the collected data. For example how an architect designs a building he has to specify every single detail and has to evaluate every single decision that he has taken and specify the result. Research Methodology can be different for every research problem.

1.6 TYPES OF STUDY :-

There are various types of study for doing a research and they are:

1. Quantitative Research:-

Quantitative research is based on the measurement of quantity or the amount. It is applicable to the phenomena that can be expressed through quantity. Quantitative research is used to solve problems through numbers. It is a systematic investigation by collecting quantifiable data and performing mathematical and statistical techniques.

2. Qualitative Research:-

Qualitative research is concerned with qualitative phenomena which means the quality or the kind. This type of research is used in behavioral sciences in which it is important to find the underlying motives and desires of human behavior. Qualitative research can be applied using words, feelings, emotions etc.

3.Applied Research:-

Research can be applied (action) research which aims to finding the solution for an immediate problem facing by the society or any business organization. In applied research the main aim is to find the solution to a particular problem.

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1.7 DATA COLLECTION METHOD:-

Data for the study was collected from primary as well as secondary sources.

1.Primary Sources of Data Collection :-

For this research primary source of data collection was done by survey method. The survey was conducted through Structured Questionnaire which was asked to the respondents. The questionnaire was prepared keeping in mind the objectives of the study and also the hypothesis of the study. The questions asked to the respondents were close end so that the respondents could answer quickly without any problem. The questionnaire was prepared with the help of Google forms.

questionnaire was prepared with the help of Google forms. The questionnaire was divided in to 2 main parts age, name, and other details of the respondents and the questions relating to the topic.

2. Secondary sources of Data Collections:-

Secondary sources of data means the data that is already available on various platforms. Secondary data can be obtained by various publications by the central or the state government or by any organization, and event newspaper, reports published by various organizations, university etc.

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2. CONCEPTUAL FRAME WORK:

2.1 DIGITAL PAYMENT:

Digital Payment means when any goods or services are purchased through the use of various electronic modes of payments which means there is no use of physical cash or cheques in digital payment. Now-a-days people use Digital Payments more is because Digital payment methods are easier and more convenient and they also provide customers the flexibility to make the payment from anywhere at any time which proves as a good alternative to the traditional methods of payment and which fastens the transaction cycles.

10 Types of Digital Payment methods in India:-

- 1. Banking Cards- Debit/Credit / Prepaid Cards.
- 2. USSD (Unstructured Supplementary Service Data).
- 3. AEPS (Aadhar Enabled Payment System).
- 4. UPI Mobile (Unified Payments Interface).
- 5. Mobile Wallets.
- 6. Bank Pre-paid Cards.
- 7. POS Terminals.
- 8. Internet Banking.
- 9. Mobile Banking.
- 10. BHIM App (Bharat Interface for Money).







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PROJECT REPORT (2022-23)

1.Name of Department	GEOGRAPHY
2.Name the part of the syllabus covered for Project Work	
3. Session	January-May, 2023
4.Number of Students attended and mention the semester details	29 students (Sem III & IV)
5. Number of Faculty members and NTS attending	Faculty member:2 Teachers NTS: NA

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FLOOD HAZARD AND MANAGEMENT: A Case Study In Khanakul I And II, Hooghly District , West Bengal (2017)









WEST BENGAL STATE UNIVERSITY CBCS, SEM VI, 2023 B.SC. (HONOURS) IN GEOGRAPHY

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PAPER TITLE : DISSERTATION REPORT		
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CERTIFICATE OF THE SUPERVISOR

Certified further that to the best of my knowledge, the work documented and reported here does not from a part / basis of any other award by this candidate or any other candidate.



(Signature of Supervisor)

Date: 1.07.2023.

FLOOD HAZARD AND MANAGEMENT ? A CASE STUDY IN KHANAKUL I AND II, HOOGHLY DISTRICT, WEST BENGAL (2017)

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CHAPTER - 3 (Eeffect Of Flood In West Bengal) Introduction 0 o general Impact of flood a general case study about affected Agricutural region 0 est the time of flood (2017) o Conclusion CHAPTER-4 (Flood Management and the note of Rople) O Introduction o yourment flood shelters in flooghly Stuctural Action Plan of Managent, Hooghly District 0 o Conclusion -> Appendix > References + Weblingraphy

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LIST OF TABLES List of the deadliest floods worldwide (2017) D State wise geographical area under flood in India. \Box Ageneral overview of flood affected area of D Jehanakul block Name of important rivers and canalo, causes of flood. - in Study area. Flood affected agnicultural area □ Name of some government flood shelters in Hooghly district, Khanakul I and I Block. Base camp Station . In charge in study area and a flowchant of stoucture of management of flood disaster

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LIST OF THE MAP AND DIAGRAMS D Location Map □ Intensity of rainfall during flood (2017)

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ACKNOWLEGMENT

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Sconty words can hardly do justice to express the heartfelt gratitude for all who are related to this dissertation report. Tinst of all I would like to explain my heartiest gratitude to honorable guide. Smt Alpana Ray who provided valuable guidence and helped us tremendourly during the collection of different secondary data related to the topic. I am also grateful to all my classmates for helping me during the preparation of this project work. I would like to convey my gratitude to the different websites from where I got all the secondary data for this week. Finally I feel a deep sense of gratitude to my respected parents coho also have beades of one during this project work.

Date: 01.07.2023 Name : Ankita Bose Place: Prasanta Chandre, Mahalanobis Mahawidyalaya, Kolkata

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CHAPTER -1 (PROLOGEE)

"I INTRODUCTION

Kireen flooding is a natural phenomenon. Ilood occurs when a suver carries an extreme volume of water and when water cannot drain properly. Hazard is a physical phenomenon and it has dereastating impacts on the environment, economic and socio-cultural fronts especially in developing countries like India. Actually, due to the roulnerability of humans and the system, the impact of disasters is multiplied. In the present time there has been a change in the process of 'disaster management'.

1.2 RESEARCH ROBLEM

West Bengal, a point of the Ganga detta, has a long recorded history of floods. It is because the major port of land of the state is formed by the yanga-Padma siver system through the delta building process. dood is an adjunct being the main carrier of sediments, the bulk of fluvial deposit, in huge volumes. At present 42.3% of the total area of the state is susceptible to flood spread over 110 blocks in 18 districts. Among the mostly affected districts, Murshidabad is most prominent due to its vulnerability and location. Almost each and every year this district suffers

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PROJECT REPORT (2022-23)

1.Name of Department	PHILOSOPHY
2.Name the part of the syllabus covered for Project	Paper Code: PHISSEC02M Paper name: Business Ethics
4. Duration	February to april 2023
5.Number of Students attended and mention the semester details	14 (Sem-IV)
7. Number of Faculty members and NTS attending	Faculty Member 2 NTS- NA

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topera. न्यत्रा (विश्वेत्व नग्रहारी, 2000, (वरणवा?, व्यन्ति कानक, "भाषायेण आन्नय नाष्ट्रवायों, "कार्मा न विष्णान र्मिट्रेयर 3 मि मि मेर को के मेर मि मि मि मि मि मेर मेर "ताला धात्र ७ (आण्ड्रेल का नाना ला असि , आगर नान्यमा (वार्व्यितायन अहित दिस्पर्याणाम् रात्वार्य आदि राग, वाग्या , 9 राड Empian नग्ना, जिन्द्री नामका निम्लाम स्ट्रिया हो रहनाह ह जाया हा वांस्वालिं (ADION CA MONTERAZ GOUZ GEO CA SURDAN CALONDINO Augue and a supplied and a currence and a content on a content of a supplied on the content of a supplied on the content of a supplied of a supplicit of a suppl निम्नास स्वायातान (भि जिम्ना विमर्कालान कुलान, त्रा अन्वन 12/2/22 2101 21 (als pile & - only Co i dort 3.02 Lague alis prover preverence concer Doul 3 अग्रेम्ले हेलाने सिटन नगुन के का हा हालान गांचा-19हार्ष स्वार्थ शिकाया लि। (303412 - 206/08/08 - 101न विकाल के कार्यान मार्ट मार्ट के 10 की के 100 की व्याभ्य जिलाइ , व्यावाइ व्यक्ति कि जिलाइ (2007) Pris d'ar about Bous, Durchilors Outo - मांग्ले जाव्या के विद्युद्धि के व्याप्र के विद्या में स्वाय के स्वय a madematina Drowing Coma, Draghylaro Cato मार्ग्रे भाषाल जिने के के मार्ग्रे भाषा है के के कि का कि का कि 3 कार्यालेग्री मुन अल्लान दिलान, अल्लामाशन (ato P.T.O

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108274. . (दा विवग-7, राजना जो जीका हा कार्टन (दा गार) का गाउ अंग्रे (ala selon al alanzi Carou 351, (al 3 alal विकास नियाय वर्जन्य, Onviar Eron यहां के भाष Ouges and Care Couge and a star and the care an विभाषित भूमित, आधार दायांत बाह्य की की की भार enjerenal desirens and a curada constant a supera प्रस्थ अध्यात्र अग्रहन्मि प्रिल्याह्र नेव्र ने भाष्ट्रान्न, शाष्ट्रान्न, व्ययसे मात्रि कार्यने कार्यने में कार्य के कार्य कि मित्र कि कि Alla de de de la land de tant alla ser an en la land and reported the area and and marging सिमिया वियान विमान विममने किम्लियेग विमियेग Divis Cost- 12 Cost No Paral Slor service an (क्षेत्रांका स्वाय स्वाय स्वाय, निर्वाय (912) (92) (92) Contrata and takin on the ranta asin an acontacontar,

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108278. नान्त्रभ कोिनियमालन निन कि आन्त्रकार अ दिलाय रेजार दिन् लियरतां दुर्ग्याय युग्राया युग्राय तिलाव अहिं न करील हाहा हा हा होगा क ही हा जान का हा हा हा हा ह 6 and love and deal of an for the love and and the 9 राहिन किटिन कुए बार्टी, जियमेक सिका त्या भार Theoreman oracionis Mont-Drangia Suplan Silon Conta व्यक्ति न्यू में मार्ग मार्ग हिंग मार्ग हिंग मार्ग प्राधित क्रालां निग्रायातां ट्रास्ट्रियां दिल्ला का विद्या दि ह go or success ou prostation out and Lanor अलाही ७ आ स्त्र दिलाई क्रानि डा आ का तमा न रहे कर, and a proper and a proper price of the many (अन्वकाल मा राजा कि निर्माल कि जिया मानग के मान कि भाजात ? (9 3101 - 2 11 ने 9 वर्ष्ण पछ्य - कि छा श्री - दिलि उठ Sity Lanaroug to tout a cousilo or such a guit ग्रेटिल न्वांग्रे हिंग्रेट्र हो लाने हार्या हो भे Contara Jusi & de la proventa proventa cons - Broch Leve relation with P.T.O

108279. Lou log alou anous eron , anon singers متحامد في العرميد في حالمة مراكم معالم معالم معالم معالم معالم معالم معالمة مع معالمة مع معالمة مع معالمة مع - (वार्युक - किल्ला के जाय का का का की मार्गित वादिन, स्विग्लाने ट्योन के त्वा का त्वा है ट्या के वहा, त्वा का प अन्द्रिक राडाता भाषा द स्वा जाता है आ दि हैने हैने कर दिन के द Buonzones enter a conquerce all we wantered autorian and a construction and de and कारि, टिमेजिय जार्डाति चलाए र्गो नेवेन्द्र भी शाया का aldanzia avitagiona alinais Lastar alinata der Oratelis , der suis, la sear stal ler' allado sois (9-2017) मिं में द्राठा निग का द्राय के द्राय के त्राय के त्राय के द्राय के द अण्ठिमधा आत्रीक्ति न न ला डाधा मुख माही मुल् थे, of Congas oralas - origionia pront -> Onoucha. Consolo contractions de des los de la la contractiones अभग्नालम मन्द्राण जिल्लाहि रहा, त्रिलि भग्नाहि - िमि जिन्ह में राजा न में का मान हो का रिया में निम्ने, जिन्हा में - Education lacer - such to the income while प्रकृति हिमा का के का का का का का की निर्म कर के मार्गार्थिय न्द्राराही हर विहाद किया, त्याही प्राय P.T.O

हिला खंखा के खाने ' दिन का प्रेय अवेव खाने सम्प्रित or sal a coop a contract of Caroal Inise रेंग किया ह किल्लां है। युवेय के स्थित का सिंग Gradento and a series and a man alala छित्र न्वां , त्वाग प्राण प्राणित को िका भा ordonia wish SLB Outs show wind and server solis वेंधवरित कारवचा राममे निर्मारिका का जी मुझ विटिन्द ig Cara Lyce antis and and log (भार्तिने चिनिन) आनमा अत्य आ ओ छोत्रोगन gona 19 (dena toba) किलियोइन्स्त के हिल्लान वित्री विभिन्नित नक्यांचे प्रकार द्वा या या या या गि (छा ि चिन्नार भाषा चागवन्त्र) राष्ट्री मार्ट्य (शाभ न्यहान (), 2 आनम्भ - आणिया चिण्लान्त्र (प्राणि अन्ति) आण्न स्वान (), Uter, मत्रायाय (केर्य विद्राधिकाल राजनित्र किर्ण के कि संग्रि (mis (rever up on on a she and the यात्र िणांच हाल होत होते. दिन इति विवाय हा (out (भाषा प्रधा भाषि आभाश्यम् आभ चल्ल आधन हात्यामा आपि आपि मन्द्र जामाह्यम् आभ चल्ल भीर्थ मिल आदि कार्या अखिन त्रिय जावा को कि जिल्ल कार्या कार्या के कार्या के कि 9707: 10129 वाणाप्य आगु होत्या फिछि जन्म स्विरिक द्वान्य प्राप्ति कि हो कि मि में प्राप्ति के मि मि में प्राप्ति के का मि में कि - द्यारी अग्रेतियन मुख्ये जान्या, P.T.O

ale 7 11. 92 ि, Colore जानआ 9 (Gra Duppilore 2002) भा Starter Story Sundayore Additer and aller न्वन्ति सिलिम् इतिष, स्क्रेम लम्ह्यालं म्यामारित अफिग्राचाम १७ २ महेन जाकित, राध्यका के जिन्छ अफाराख्य का का कि अफाराजी के विद्याल जा शर, (orous a cala @ Drata das a ala bis) Lever Bis of a rear will real and real and मि अमिलन किंग किंगने होगी, आर राज्य को कि म्हान्य का कार्याया गा कार्यायह का का नियाय वेंच्यात्र toigues (and a day and Corta alouther stoutho outri, P.T.O

1080-712. Allor maria -> 22 Grant des () and man, Partoria dour laices or on a Subley super dasc भेज विद्राला 6 आहर की नवाहार , जाल र क अपनी- जिन्न तलादु िमारी- ने विष्ठे, Freachers Signature.



Prasanta Chandra Mahalanobis

Mahavidyalaya (Accredited by NAAC)

111/3, B.T. Road (Bon-Hooghly), Kolkata – 700108 Phone : 8697169513 E-mail :pcmm.principal@gmail.com Website: www.pcmm.edu.in

PROJECT REPORT (2022-23)

1.Name of Department	EDUCATION
2.Name the part of the syllabus covered for Field work / Project Work/ Internship(Specific Paper name) / PRORAMME NAME/COURSE NAME (Attach syllabus)	Paper Code- EDCSSEC01M Paper Name- Skill development for social awareness
3. Duration	September to december, 2023
4.Number of Students attended and mention the semester details	88(Semester 3)
7. Number of Faculty members and NTS attending	Faculty Member-2 NTS- NA



Baseda 4121:-

(HIV) - Human Immunodeficiency Visus Infection. (AIDS) - Acquired Immune Deficiency Syndrome.

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- गरे राष्ट्र के नारे राष्ट्र איזאיזאנגי איזאיגאני איזאיז אריאיז אריאינגער איזאיני גיגאונגיער איזאין couloustot; Wasalory unight wave in the states with a partie was stated as we we show Bon Brown stand again on a state Marter 2024/2000 . Derfordes desitions southingle marter outofuture alexales or so ar all susalering oundage the י האציע הבייצרי באי אותבי ליצרי والمعالية المانغ المانية المعالية وكالمالية المالية المالية المالية المراجعة وحابة فهايدين . الد بهالالا - الاسلامة الجراب الماليد خابد ' زند مدامد الم المعالية Lalis rui Acres Norses 31 - Seviler's ware ster ware our Bis arsonal to Witer Alar' (aliterine 542 and a pylor in the product of the • 1926 ज्यार - 10 - 92031 - बिलाइ - 20013 => ABIELLO CALLE SIGLER SUNTION المك في المالية المالية المالية في المالية ماليونونة في دورة مالالدون المر religion i the signer on age age under ולאור היצוחת הערץ איזה אינדשוב כאהרי תי-ואני



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Phillippe de Alige de la

אי שצו האש קים שלשיא יושיניות איייאי מירין => is concers alon ' मुश्र ' में ' ' יוול האומידיות אומידיות אומידיותי, האושותי אולטיאה אומיד זוואיציד, להצורוים ישוניה, אומידיות צור ביים, ווון ביורט, באותר בשירותים האותרובה, int surveyed as hereurlowers : suspersed , foreners, dorigities , Liste free אי שולשישוני האמוראותי ביציער, גונים ואומורותי, שולייני איוו · L'us pieres indrader · भाषा, भगम् भुमा म्यायल भहारताम्य हिमल हाम्याहमहाद्य हाखाम् स्टब्स् स्ट्र Stour alevator mu sustay astante as alor an ast out outones l'insits allet app anterarour aner suster sir anotar anis स्ताल खाह सामा हो हो हो हो हो हो है। outister 52 lour inter autre autre and the super super site and the aiston musis lore sides vier and i willing will' · tex prov ever exer . > our aparister losso averteran collece outri dane our المعالية بنهد وه مالال على محالي سالد عليه ولا المالي wa run fullat departe auto sur virt. Anur in consistent לשנטילאי היצוע בעוצוא שניינה ועד ומעונדיו אות לאומר בעוצואי שניינה ליצוא הידיוסו מעיני אוצו ירטקאי יעבאיר אין ארי ערש אוור לטומן יוס וויצו געו נשצוא הויינטיר עד אוצו ירטקאי יעבאיר אין ארי



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entister of the section with such is and inter such allering יציאייה שוצורו יאושיאו אונוניא יריין רמן. אילא אורע אונידור ערושודער אבייה and a far starter to Bares . Tous after willing in the and a fares لماندليه في مالك محمد المتعام المن " فكالم هاي عمد الله من الحديث خد باللغام مالغالا المالة المالة المعادة المالة المالة مالك والمالة بالعد فالمالة الله على عدل على الله المر المر المراحة ال مراحة المراحة الم י דאשר אלי שרו א אין > Guerpuerter min alignes alignes aliens alienter Brainly Guer ביונטי שרידגר יותוונגבויני, יוואג בווט שרי יוצ אוווי באוליון על יוצי אוווי ביווטי שאותי अप्रिल्यायं अक्तूम न लेगाना गाना · 335- 46 :042 - - 92 - 0005 + 3+ (m - 120) = - 935 - - 92 most zylan 270r יץ צוררונא אוס , NIT at 20 pur Galere il asact, il orgenes stimmer int and experience nt out and and



י האי מקשתוב דלקותי ב - צוופי שי הבתי פה שי צורים שלברי تحديث سائي بالمخدة الله وعدة بمراساتين سائية في عالين على الحديث الم علق على عليم من علي من الله على على على علي مالي مرد الله عليه عليه على عليه الله عليه على عليه على عليه الله ع صابع مدامر بجامع محماء مع مار عالم عمامه عمامه عمامه عمام عرام عمامة مارد مع م • अर्वोक्त नग्रुप्त, द्वालिकिए आय्यतन् ى- كالحساف المك أحساب المساحق لا المعلاق كالمواردان ولى لا المركبان عالى المعالية المعافلة وهذ قال المنالد المذهرة مرموسا ويكاهم بعالم المعالي المعالية الم ster sam les laluts en 5131212 Lalue 51312 mainer 2534 gistorior and singlet Sisterior out and the of Stocklard sweet asurar sich si • بهجه مس مرح عمل: معمود عاندر مراس مع معرف ف אשמושונות יז שווי ידע באדי או או איד שווי ארעיער אידער אידער אידער או אידער אור אידער או אידער און אידער אידער און אידער און אידער און אידער א לואישורים ענטיי יש האיז ידר (אווניר באל הוציאנט ושיעו אין אינטיר איז איני אין אינטיר א איז אין אין אינטיר א איז ' zieve handere parter יהמיובה אוציוצ האצייציה של עות בצר האוש אוא גוויבי גי xels J ישווא אב אור אוריגיאר אוווידוגר בשור עווע איר אוויד אוויד אוויד אוויד אווידי אווידי אווידי אווידי אווידי אווידי Bree for ance of souther twild will supply the res of the areanication and a property of the rest of the services and العكر. مكرى بكرون كالمعدان بالمالكان الماليم فيكر فيكر فيكر


" and to the state is - Sh into the לדיקוסיזים להוצר היישוי ביות ורוצווה היותי וואי ובהשוע ליון . यहेर काम्ये - कि अरहार आर काम रालक संत्याप्री यहां राषाछ אין אואציבי אודאי בוות אין. ירחשון אין ישופיראד בידיור איז אין אין וו אותי חד דיאו, מד צריאיר ממצי - שבושל עם אימי - אברי מונצה מר, إذار عليه مدرو عنعد راوري والور سال والعامة عبيهما فصاله معارض المتركة عضور fimily with with signed starts present with with יאר אעיזונים שוואוא דישיטרי בענה לענה אער איז ג בעני טווצינים n's for when it will be a compared - with the stand and the stors ther, forman deter, vir signe and man man in parties and and and and and sundy zesteren' vij suraris energen singer and and surger inter summers provis xeleter used sized

bCWW recentary orginary and elegender anorabit water outration without a sustant of the second and the second الخلكالة "الما هك لالأراد وهاره فالعلاق الخد بما عسد وكالعسيد هي مخاللا لك aufat zoospor allerting communities released organoras way corg الم تابع مدفر من فيكاليوسون وكالم ووافيك ووافعه المعاد من فيكر المسالية المعالية المراس العلام العلام محاليسات لأعوا فبالمنامخ عا الاعديد الدفيك אותינין דינגרער לאיז אונצר לרואות שרומוריצ שובאר איש לאיאאיאאיאייליי Min 25 Haver 12, Fourily's Bald Sale on Sucreal 2 Restaugator xily (rout outigenter super superior survey or sund per Restaurents of senter of and after the stage of the senter of the senter and the senter of the sente Hausers Sentar mist fangerenters ougrene is 21. Orenand anorganicus Huest South of wal success are surger and mension relation of the super of the





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PROJECT REPORT (2022-23)

1.Name of Department	PHILOSOPHY
2.Name the part of the syllabus covered for Project	Paper Code: PHISSEC02M Paper name: Business Ethics
4. Duration	February to april 2023
5.Number of Students attended and mention the semester details	14 (Sem-IV)
7. Number of Faculty members and NTS attending	Faculty Member 2 NTS- NA

WE Prasanta Chandra Mahalanobis Mahavidyaaya 111/3, B. T. Road, Kolkata-108 Principal

PRASANTACHANDRA MAPHALA NOBISHG MADHA VIDJAZAZA MAMES SOUPETKSALGA? SEM> IX STREM->B.A.G.ENARED REG2 NO>1292111400415. COLDAAGE RODDAD > 5930, SUB>PHILOSOPHY,



topera. न्यत्रा (विश्वेहालन नग्रहान, Tonor, acyor, व्यन्ति कानक, "भाषायेण आन्नय नाष्ट्रवायों, "कार्मा न विर्णाय र्मिट्रेयर 3 मि मि मेर को के मेर मि मि मि मि मि मेर मेर "ताला हात्र & आग्रता क नाता ला र सिष्ठि , जिनिर नान्यमा (वार्व्यितायन अहित दिस्पर्याणाम् रात्वार्य आदि राग, वाग्या , 9 राड Empian नग्ना, जिन्द्री नामका निम्लाम स्ट्रिया हो दम्हान हि महाया हि वर्म्याति ह छित्रा मेरे हिंगांध - शिहिन मान्स , Cato 20 with a - Fint (ADION CA MONTERAZ GOUZ GEO CA SURDAN CALONDINO Augue and a supplied and a currence and a content on a content of a supplied on the content of a supplied on the content of a supplied of a supplicit of a suppl निम्नास स्वायातान (भि जिम्ना विमर्कालान कुलान, त्रा अन्वन 12/2/22 2101 21 (als pila @ - Only Co dove 3.02 Lague alis prover preverence concer Doul 3 अग्रेम्ले हेलाने सिटन नगुन के का हा हालान गांचा-19हार्ष स्वार्थ शिकाया लि। (303412 - 206/08/08 - 101न विकाल के कार्यान मार्ट मार्ट के 10 की के 100 की व्याभ्य जिलाइ , व्यावाइ व्यक्ति कि जिलाइ (2007) Pris d'ar about Bous, Durchilors Outo - मांग्ले जाव्या के विद्युद्धि के व्याप्र के विद्या में स्वाय के स्वय a madematina Drowing Coma, Draghylaro Cato मार्ग्रे भाषाल जिने के के मार्ग्रे भाषा है के के कि का कि का कि 3 कार्यालेग्री मुन अल्लान दिलान, अल्लामाशन (ato P.T.O

-tode 7.3. Liperent elaboration of an and the manual and and Brogenial the molaring and " Roland Bar (हात्कनच्चे के कार्यन दिया कार्य के कार्य के का ान्त्रियान चल्याने भान, • भगा गर्धाव्यन्त १२० - रे राजना -- अिल्ल भाषाने राज्यात्र ह आधा गरा ह आधार Callo alla so starto sugar of such of such as a ato anon for conto as contos as, the Caron विकि विचन्त्रीय - विविद्य व्यक्त्य क्षित्र कार्य या साल सालावी aloilay terrisilan for par genting march desider la Draftas Onlay Doil Jalen on al o of contact and and all of the of the second and the of the second and the of the of the second and the of t atorial and with a parties of the proverse the formation मामान (७२०) जन्म, अग्रेगिमिन केला ७ अएफले 5000 कार्याक्षाचा भाषा क्रमिक्सितान नेकि शामि का राष्ट्र -ित्रि के निका कि का कि P.T.O

a8e-74. and appendix pratases aller avient -> / बाबआज नगए) १९४ नामआ नग्न -> (१ २०(७३ भाषाय करिमिल भाषा हे भाषाय कार्य कार्य के भाषा के भाषा है। म्बिछि लि लि लि हिन्द्र हो है जिल्ला राज के स्टब्स सिद्र ह Coveria आमान - All द्यास, अलिनि राजारी के शाल onlors & papia dois loworougialorge - this & arour Longerous and hur indered and sing alonging वान्त्रामक भूमे के हेगा नगा कि जीन आ कि जी के गिर आणि जमाम माहाद एम्प्रिं बग्दा, अस्ति - हिमिर (HOLA STOR & HOLA STORE STORE A STORE STORE) AND A MARTINE STORE अर्थे कि विशय रिये कि मिरि में भिर्म कि रिये हैं। Manglois Pill यात्र आय आय असिलिय न Q 3 हा (010) हैं। या र 201 के (010) (012) (012) व्यान भेगा के में में में में में मिल में मिल में में मिल में मिल का में मिल में मिल के में में मिल के में में म alon alazien grege in sur sur sur al de la commenta न्वन्त्र भगा स्थितिः, Cartilorat Engratematicizety Maria (आक्षण मजाने कि मि मि मि यात्र भाग के कि काने, भगमा गांधा होया हार्य प्राय गांधा गर हार्य हार यात्रमें आख्रियलं आख्र अल्भिलया याजियहान आर्या चर्म्या, न्यायडगान रेथे कि आखा रि

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108e75. வ्यूरियंत्र आदि असिति जेका अध्यां किति खाल मार्ग्रिय Suspard and a sear out and an estar pular is tercor al alle on all alla chal alla suisa alla And of 33, 012 Con Calos on the star of the ori व्हालां न किंग्रिं ज्या नगरन किंग, आदिवान भेगरियालका स्वेम्स् हार्डि कि कार्याप्र के स्रह के स्रह कि मार्ट के स्र न्यान्वरुग वित्तिहोने भेगालागुर ७ (भागावा नर्भागानीता न Conter a forges tribil 26 outor dron a suis यांचिति सम्प्र प्रथाने मुखुिगांच आह्य वर्त्रियाम् प्रम्य, राख्या - जा मिला - (मिलिन - किंग्रे भिर्म अल्य स्वा जा जा के का के के आभा टिलांच किर्मान्यवादि, अग्रेशत का भाषा ठांचला ठांचली दिने अञ्चलकी, जिलका मा आ कि जिनेपात कि कि जात का का कि कि के dointo on do consuguidor Capada Onia Con Laulai dal ang ang ang beneg bing tong lang ang mal-louisit (छार् - लिंड, चल, एगाए, जग्र क्वामान साए- न्येणन (क 10500 जी खाल के 5101, 213 18 - 64 20 20 20 10 10 10 10 10 orton consist & find any anero, the down on one

108276. and regulation of the strong here and the strong an Judivisor & alaswing prever programme and water that न्मेल क्रिमिया के मार्ग गिर्णा के मान का क्रि का के के कि का के कि का के कि का कि का कि का कि का कि का कि का कि मान्यमा जारित्विमान्द्र मीर्झालाव (इंडिंगाण) (क मान्यर्थ), eleanting a the autor to the stand on the and the st अ शालना िर्धियां भेग यहां के स्वीय त सिर्म त ्राधावर के स्वार्थ्य वार्थाय के व्यक्ति का Btoro, Onlow Concontras - Current of Contration Callo derever enderer enderer enderer on la contrate of the co माठा नग्रा भारत के दिल्लाई प्रभाग जार्ष्य , अन्द्रिमें भारत के कार्य जार्य के जार्य के जार्य के जार्य के जार्य out four Lacare La alungare a alarge Plan - Dy gout Way Ouge as Shours - Words Sir Pulsice a long a four for a sugar outre or and a व्याहिष्ठाव्या त्याने संख्या स्थित वित्र ' त्यानां युक्ति -छार्थ्रे की ि ज्य न भा का लिए। के प्रेम न में के का कि Ouragin of a rel tor our phisulf de soult o designe चा Grang स्वागास मार्च के देशक, (9 20 कोंग) (200 किंगि 200 - Caloro toing - Calques - Asing a lough a ala oula, P.T.O

108274 , जल्म की जीम ग का कि के की की का कि . दिम् भेनग-7, राजया जो जी से हा का कि जि हो हो जो हो का र र्ये कि तिपित्र होता त्य हि जिया दिया की है () भी के अदि विचारि आहि आहि कार्य कि मार्ग कि मार्ग हिराम यहां के भारत र्गात देखला न का कर मिर्ट के वा का मिरा के मान मा mason - Dir in 360 maler of Dialout ong 20 malou Qanlero oferer, onere Envir नम्पि मिनिमान (9 छन खिला जन अस् अला आर (भ, Orango Ortozonoras for or on or on or on or on or on or on one origiational abis rola's mais Quality is proportional प्रेन्भ अप्रेणान्त्र किर्म्न्न विस्वित्यास्त्र निर्वत्रे भाष्ट्रान्त्र, शाह्यान्त्र, Allocida dois to rate 35, 4 dollar on our man Plage and reported area and area or all marging भग्निह्यास्त्र अन्त्र स्ट्रां राषेष स्ट्रां राष्ट्र स्ट्रा सेप्र नि सिंधावा (वासं दिवारं विशव दिस्वासं टिम्बिस्टिमित से दिलिस्टिव Chine Over- 4000 216 March Stor seconder al - प्रश्ने आठम जन्म जाम, म्लन्स (912 (920) (91), Contrata and any on the sector discontacontas,

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108274. . (दा विवग-7, राजना जो जीका हा कार्टन (दा गार) का गाउ अंग्रे (ala selon al alanzi Carou 351, (al 3 alal विकास नियाय वर्जन्य, Onviar Eron यहां के भाष Ouges and Care Couge and a star and the care an विभाषित भूमित, आधार दायांत बाह्य की की की भार enjerenal desirens and a curada constant a supera प्रस्थ अध्यात्र अग्रहन्मि प्रिल्याह्र नेव्र ने भाष्ट्रान्न, शाष्ट्रान्न, व्ययने छात्रि कार्यने कार्यने मेहत्र के विगित्रियेक Alla de de de la land de tant alla ser an en la land and reported the area and and marcher अंग्रिसि अर्थि स्टंग्रेश रेथे में के रागे के मिर्ग से मिर्ग रागिति सिमियातां के तां द्वारा द्वारा द्वारा द्वारा के तिम्हियेगा कि रहे दिलिये क Divis Cost- 12 Cost No Paral Slor service an (क्षेत्रांका स्वाय स्वाय स्वाय, निर्वाय (912) (920) (92) Contrata and takin on the ranta asin an acontacontar,

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108278. नान्त्रभ कोिनियमालन निन कि आन्त्रकार अ दिलाय रेजार दिन् लियरतां दुर्ग्याय युग्राया युग्राय तिलाव अहिं न करील हाहा हा हा होगा क ही हा जान का हा हा हा हा ह 6 and love and deal of an for the love and and the 9 राहिन किटिन कुए बार्टी, जियमेक सिका त्या भार Theoreman oracionis Mont-Drangia Suplan Silon Conta व्यक्ति न्यू में मार्ग मार्ग हिंग मार्ग हिंग मार्ग प्राधित क्रालां निग्रायातां ट्रास्ट्रियां दिल्ला का विद्या दि ह go or success ou prostation out and Lanor अलाही ७ आ स्त्र दिलाई क्रानि डा आ का तमा न रहे कर, and a proper and a proper price of the many (अन्वकाल मा राजा कि निर्माल कि जिया मानग के मान कि भाजात ? (9 3101 - 2 11 ने 9 वर्ष्ण पछ्य - कि छा श्री - दिलि उठ वाह्य अन्ध्र न्यत्र का हा कि हा का न्या के के मा कि Sity Lanaroug to tout a cousilo or such a gui ग्रेटिल न्वांग्रे हिंग्रेट्र हो लाने हार्या हो भे Contoras Jusi & de la proventa proventa cons - Brocher Leve relation with P.T.O

108279. Lou log alou anous eron , anon singers متحامد في العرميد في حالمة مراكم معالم معالم معالم معالم معالم معالم معالمة مع معالمة مع معالمة مع معالمة مع - (वार्युक - किल्ला के जाय का का का की मार्गित वादिन, स्विग्लाने ट्योन के त्वा का त्वा है ट्या के वहा, त्वा का प अन्द्रिक राडाता भाषा द स्वा जाता है आ दि हैने हैने कर दिन के द Buonzones enter a conquerce all inclused autorian and a construction and de and कारि, टिमेजिय जार्डाति चलाए र्गो नेवेन्द्र भी शाया का aldanzia avitagiona alinais Lastar alinata der Oratelis , der suis, la sear stal ler' allado sois (9-2017) मिं में द्राठा निग का द्राय के द्राय के त्राय के त्राय के द्राय के के द्राय क अण्ठिमधा आत्रीक्ति न न ला डाधा मुख माही मुल् थे, of Congas oralas - origionia pront -> Onoucha. Consolo contractions de des los de la la contractiones अभग्नालम मन्द्राण जिल्लाहि रहा, त्रिलि भग्नाहि - Education lacer - such to the income while प्रकृति हिमा का के का का का का का की निर्म कर्म मार्गार्थिय न्द्राराही हर विहाद किया, त्याही प्राय P.T.0

हिला खंखा के खाने ' दिन का प्रेय अवेव खाने सम्प्रित or sal a coop a contract of Caroal Inise रेंग किया ह किलांग थिंग लेंग लग लग Gradento and a series and a man alala छित्र न्वां , त्वाग प्राण प्राणित को िका भा ordonia wish SLB Outs show wind and server solis वेंधवरित कारवचा राममे निर्मारिका का जी मुझ विटिन्द ig Cara Lyce antis and and log (भार्तिने चिनिन) आनमा अत्य आ ओ छोत्रोगन gona 19 (dena toba) किलियोइन्स्त के हिल्लान वित्री विभिन्नित नक्यांचे प्रकार द्वा या या या या गि (छा ि चिन्नार भाषा चागवन्त्र) राष्ट्री मार्ट्य (शाभ न्यहान (), 2 आनम्भ - आणिया चिण्लान्त्र (प्राणि अन्ति) आण्न स्वान (), Uter, मत्रायाय (केर्य विद्राधिकाल राजनित्र किर्ण के कि संग्रि (mis (rever up on on a she and the यात्र िणांच हाल होत होते. दिन इति विवाय हा (out (भाषा प्रधा भाषि आभाश्यम् आभ चल्ल आधन हात्यामा आपि आपि मन्द्र जामाह्यम् आभ चल्ल भाष्ट्र काला आधि आपि त्राय जाय का का का का नामा का का का का का का त्राय जाय का का चल्ल का 9707: 10129 वाणाप्य आगु होत्या फिछि जन्म स्विरिक द्वान्य प्राप्ति कि हो कि मि में प्राप्ति के मि मि में प्राप्ति के का मि में कि - द्यारी अग्रेतियन मुख्ये जान्या, P.T.O

ale 7 11. विविच म्यादा क्रिकी के प्रिक के के कार्य के के 92 ि, Colore जानआ 9 (Gra Duppilore 2002) भा Starter Story Sundayore Additer and aller न्वन्ति सिलिम् इतिष, स्क्रेम लम्ह्यालं म्यामारित (orous a cala @ Drata das a ala bis) Lever Bis of a rear will real and real and मि अलालन आग जिलंद्रेश्म, आर राज्यामा म्हान्य का कार्याया गा कार्यायह का का नियाय वेंच्यात्र toigues (and a day and Corta alouther stoutho outri, P.T.O

1080-712. Allor maria -> 22 Grant des () and man, Partoria dour laices or on a Subley super dasc भेज विद्राला & आकृत्य प्रतास के आणज क अपनी- जिन्न तलादु िमारी- ने विष्ठे, Freachers Signature.





111/3, B.T. Road (Bon-Hooghly), Kolkata – 700108 Phone : 8697169513 E-mail :pcmm.principal@gmail.com Website: www.pcmm.edu.in

PROJECT REPORT (2022-23)

1.Name of Department	BENGALI
2.Name the part of the syllabus covered for Project	Paper Code: BNGSSEC01M Paper Name: Chalochitto o sahitto
3. Duration	February to april 2023
4.Number of Students attended and mention the semester details	46(Sem-IV)
5. Number of Faculty members and NTS attending	Faculty member:2 NTS: 0

Principal Prasanta Chandra Mahalanobis Mahavidyaaya 111/3, B. T. Road, Kolkata-108



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1.Name of Department	POLITICAL SCIENCE
2.Name the part of the syllabus covered for Project Work	PLSSSEC01M : Democratic awareness with legal literacy PLSSSEC02M: Public opinion and Survey Research
3. Session	January-May, 2023
4.Number of Students attended and mention the semester details	36 students (Sem III & IV)
5. Number of Faculty members and NTS attending	Faculty member:2 Teachers NTS: NA

PROJECT REPORT (2022-23)





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a OTTAST - 12/08/2023

Tima Karomakaro

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