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HERALD COLLEGE KATHMANDU

TRAP THE TIGERS.

Academic Year	Module	Assessment Number	Assessment Type
A19	Introduction to Programming I(DipIT04)	A2	Group Report

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Group Name : Group 4(DC5)
Submitted on : 15/02/2020

MARKING SCHEME

S. N	Title	Full Marks	Marks obtained	Comments
1	"Format of Report [Report title, Module title, Student names, Group Name] "	2		
2	Abstract	2		
3	Acknowledgment	2		
4	Table of contents and list of figures	2		
5	Project description and applications	3		
6	"Project algorithm, pseudocode and flowchart"	10		
7	C Source Code	3		
8	Testing with screenshots	3		
9	Conclusion and References	3		
10	**Continuous Assessments (5%)**		**Total Marks**	**Total Marks Obtained**
	Kunga Nyima Gurung (NP03A190113)		15	
	Kiran Yogi (NP03A190122)		15	
	Mahim Adhikari (NP03A190079)		15	
	Manjil Shrestha (NP03A190055)		15	
	Full Marks		35	

S. N	Title	Full Marks	Obtained Marks	Comments
1	CRUD operations with file handling (or Partial gaming functionality)	25		
2	Search functionalities (CRUD in game high score)	5		
3	Menu driven (same for gaming)	3		
4	Password authentication with hidden password (or Use of some graphics. h functions)	2		
5	At least 6 user defined functions (same for gaming)	8		
6	Use of structure (or full gaming functionality)	5		
7	Programming styles i.e. indentation, readability, comments (same)	5		
8	**Individual viva and contribution to the project**		**Full Marks**	**Total Marks Obtained**
	Kunga Nyima Gurung (NP03A190113)		12	
	Kiran Yogi (NP03A190122)		12	
	Mahim Adhikari (NP03A190079)		12	
	Manjil Shrestha (NP03A190055)		12	
	Full Marks		65	

ABSTRACT

Trap the Tigers is a traditional Nepali game. This game is be played by two players at a time, the offender and the defender. The aim of this game is that the offender has to choose tigers and try to eliminate the goats and the defender has to save the goats and trap the tigers to its moveless position. There consists of 20 goats and 4 tigers. This game end when the defender traps all the tigers successfully or the offender has eliminated more goats and defender has no more moves left to trap the tigers.

ACKNOWLEDGEMENT

We would like to thank Herald College for giving the opportunity to prepare our own project. Moreover, we would like to thank our module leader Mr. Raj Prasad Shrestha and our lecturer Mr. Subiran Shrestha who has helped us greatly in preparing our project. With this project we learned many things. We learned what cooperation means and the benefits that we can obtain from working cooperatively. We also learned how to be dependent on your team members and working together leads to a successful result. We would also like to thank Mr. Biraj Dulal for teaching us what cooperation means by showing some of the important animated videos regarding cooperation.

Sincerely,

Kunga Nyima Gurung.
Mahim Adhikari.
Manjil Shrestha.
Kiran Yogi.

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INTRODUCTION

Trap the Tigers is a traditional Nepali game. It is also popularly known as Baagchal in Nepali language. The main aim of this game is that the offender tries to eliminate the goats as more as it can whereas the defender tries to trap the tiger to its moveless position.

Generally, this game is being played by our previous generations people in the country side of our country. They draw a graphical picture on the ground and play with small pebbles. It can be harmful for their health due to germs and dust. With our app they can prevent all those harmful effects as it is mobile based application.

Likewise, we have used file and structure to store the players name and the number of games he has played. We have used switch case statement to select the required case from multiple options.

RULES OF THE GAME:

In the beginning of the game, all four tigers will be placed at each edge of the board. Then the defender needs to place the goats in the grid turn by turn alternately with the offender's tiger move. There are twenty goats available in the game and once the defender finishes placing all the goats in the grid then the move should be made from the placed goats in the grid. The offender can eliminate the goats only by jumping over the goats to an adjacent free position. The number of goats decreases each time it is eliminated by the tigers and the defender faces more difficulty in trapping the tigers.

PROJECT DESIGN

ALGORITHM:

Step 1: Start.

Step 2: Choose your character.

Step 3: Is your character tiger?

Step 4: If true, eliminate the goat.

If success, you win the game.

Else, you loose the game.

Step 8: If false, go to step 2.

Step 9: Is your character goats?

Step 10: If true, trap the tigers.

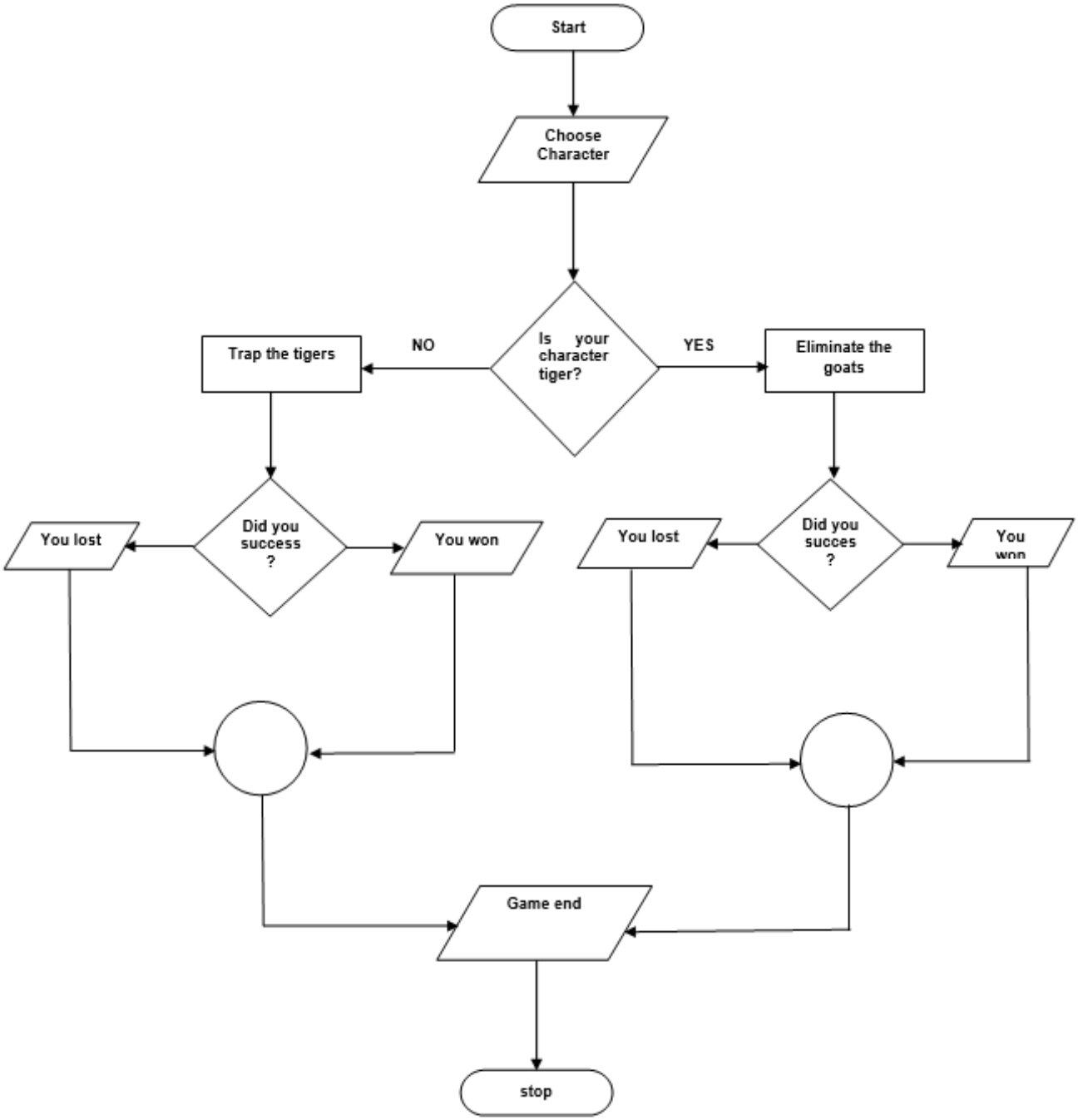
If success, you win the game.

Else, you loose the game.

Step 12: Game ends.

Step 13: Stop.

FLOWCHART:


Start
Choose Character
Is your character tiger?
NO
YES
Trap the tigers
Eliminate the goats
Did you success ?
You lost
You won
Did you succes ?
You lost
You won
Game end
stop

C SOURCE CODE

```
#include <stdio.h>
//using structure to save players detail
struct players{
        char playername[20];
        int gameplayed;
};
enum { FALSE, TRUE };
enum { EMPTY, TIGER, GOAT };

int position_ok(x,y){return 0<=x && x<5 && 0<=y && y<5;}

void print_board(int board[5][5]){

        printf("welcome to the game\n");
  int x,y;
  for(y=0;y<5;y++){
    if(y==0) printf("  0 1 2 3 4\n");
    printf("%d ",y);
    for(x=0;x<5;x++){
      switch(board[y][x]){
      case EMPTY:
        printf("_");
        break;
      case TIGER:
        printf("T");
        break;
      case GOAT:
        printf("G");
        break;
      default:
        fprintf(stderr, "Position is not valid!");
        break;
      }
      printf(" ");
    }
```

```
    printf("\n");
  }
  fflush(stdin);
}
//code to select the position to put goats
void put_goat(int board[5][5]){
  printf("select the position to put your goat\n");
  fflush(stdin);
  int x, y;
  while(TRUE){
    scanf("%d %d",&y,&x);
    if(position_ok(x,y)){
      if(board[y][x]==EMPTY) break;
      else printf("that position already exists animal!\n");
    }else printf("position is invalid!\n");
    printf("please position to put goat\n");
    fflush(stdin);
  }
  board[y][x]=GOAT;
  print_board(board);
}
//codes to select the position and move the tigers
void move_tiger(int board[5][5]){
  printf(" select the tiger to move\n");
  int x, y;
  while(TRUE){
    scanf("%d %d",&y,&x);
    if(position_ok(x,y)){
      if(board[y][x]==TIGER) break;
      else printf("doesn't exists tiger that position!\n");
    }else printf("position is invalid!\n");
    printf("select the tiger position");
    fflush(stdin);
  }
  printf("please select the direction to move your  tiger\n");
  int dx,dy,next_x,next_y,eat_goat=FALSE;
  while(TRUE){
    scanf("%d %d",&dy,&dx);
    if(dx!=0 && dy!=0 && ((x-y)%2)!=0){
      printf("you can't move that direction!\n");
```

```
    }else{
      next_x=x+dx;
      next_y=y+dy;
      if(position_ok(next_x,next_y)){
        if(board[next_y][next_x]==EMPTY) break;
        else if(board[next_y][next_x]==GOAT) {
          next_x=next_x+dx;
          next_y=next_y+dy;
          if(position_ok(next_x,next_y)){
            if(board[next_y][next_x]==EMPTY){
              eat_goat=TRUE;
              break;
            }
          }
        }
      }
      printf("you can't move tiger there!\n");
    }
    printf("please select the  direction to move tiger\n");
    fflush(stdin);
  }
  board[y][x]=EMPTY;
  board[next_y][next_x]=TIGER;
  if(eat_goat)board[y+dy][x+dx]=EMPTY;
  print_board(board);
}

void main()
{
        //creating a file to save the details of a player
        printf("Please Enter the Player Details to save\n");
    struct players p;
    FILE *a;
    a= fopen("players.txt", "w");
    printf("Enter the Player Name\n");
    gets(p.playername);
    printf("Enter the number of game played\n");
    scanf("%d",&p.gameplayed);
    fprintf(a,"Player Name= %s \n Game Played= %d", p.playername,
p.gameplayed);
```

```
   fclose(a);
{

        //switch case to select the options
        printf("TRAP THE TIGERS\n");
        int a;
        printf("1--new game\n");
        printf("2--continue\n");
        printf("3--instructions\n");
        printf("4--exit\n");
        printf("enter the character\n");
        scanf("%d",&a);
        switch(a)
        {
                case 1:
                printf("new game\n");
                break;
                case 2:
                printf("continue\n");
                break;
                case 3:
                printf("Command the position of the goats and tiger in binary
form.(rows*column). example-0 press enter 0,1 press enter 1.\n You are suppose to
trap the tigers to its non movable place to win the game.\n GOOD LUCK!\n");
                break;
                case 4:
                printf("THANK YOU FOR PLAYING!\n");
                fclose(a);
                break;
                default:
                printf("you entered wrong character\n");
        }
  int remaining_goat=20;
  int board[5][5];
  int x, y;
  for(y=0;y<5;y++){
    for(x=0;x<5;x++){
      board[y][x]=EMPTY;
      if( ((x==0)||(x==4))&&((y==0)||(y==4)) ){
        board[y][x]=TIGER;
```

```
      }
    }
  }
  //code that shows the remaining goats after each move of goats
 print_board(board);
  while(remaining_goat!=0){
    put_goat(board);
    remaining_goat--;
    printf("remaining goat is: %d\n",remaining_goat);
    move_tiger(board);
}
}
}
```

(Anon., 2011)

IMPLEMENTATION

STORING THE PLAYERS DETAILS IN A FILE:

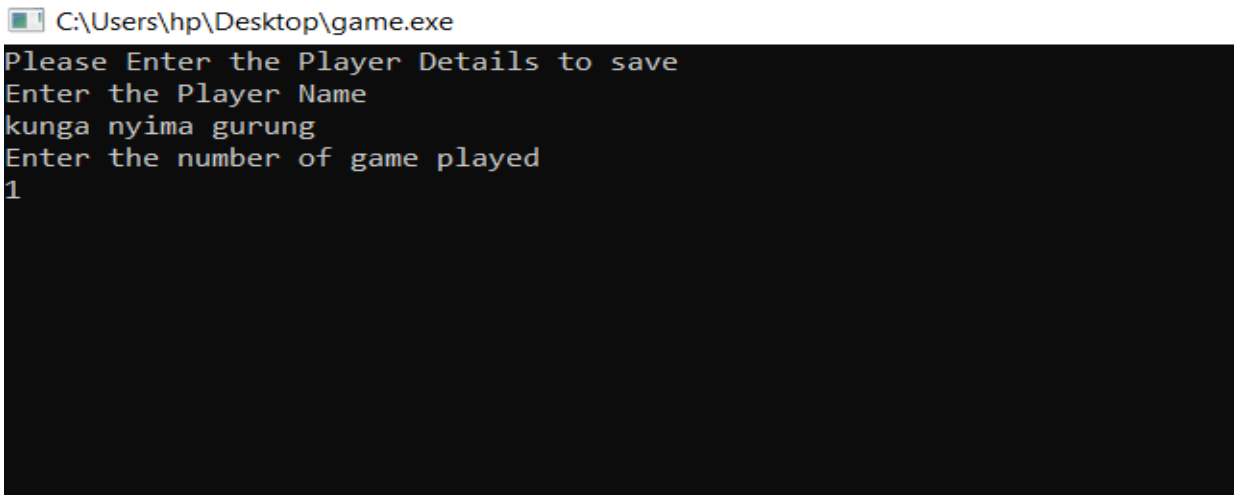


Figure 1:storing the players detail in a file

PROVIDING INSTRUCTION TO PLAY GAME:

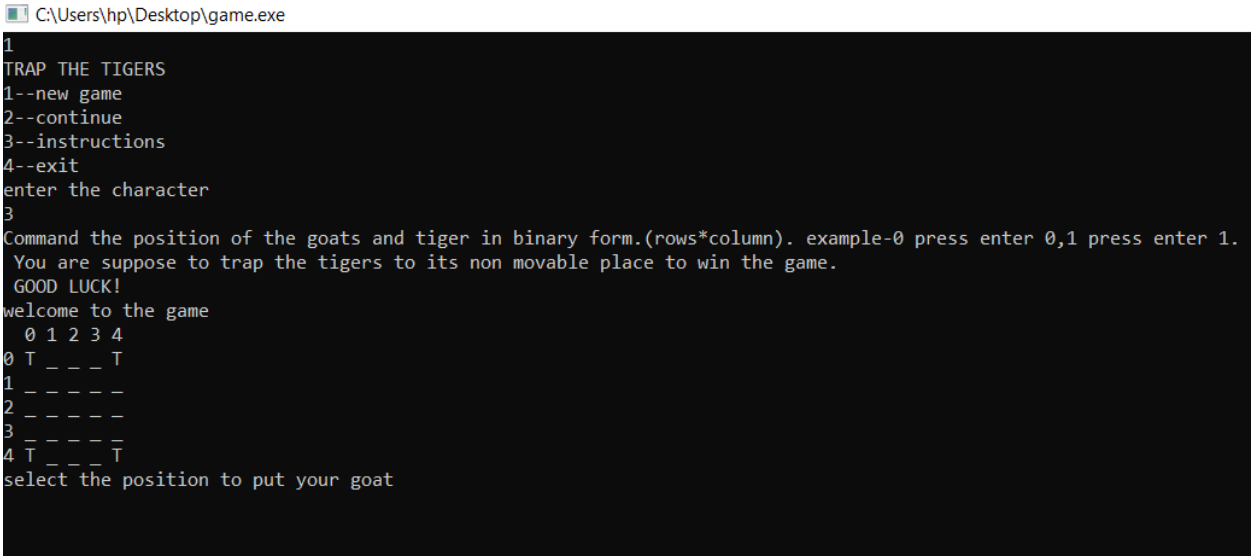


Figure 2:providing instruction to play the game.

STARTING THE GAME:

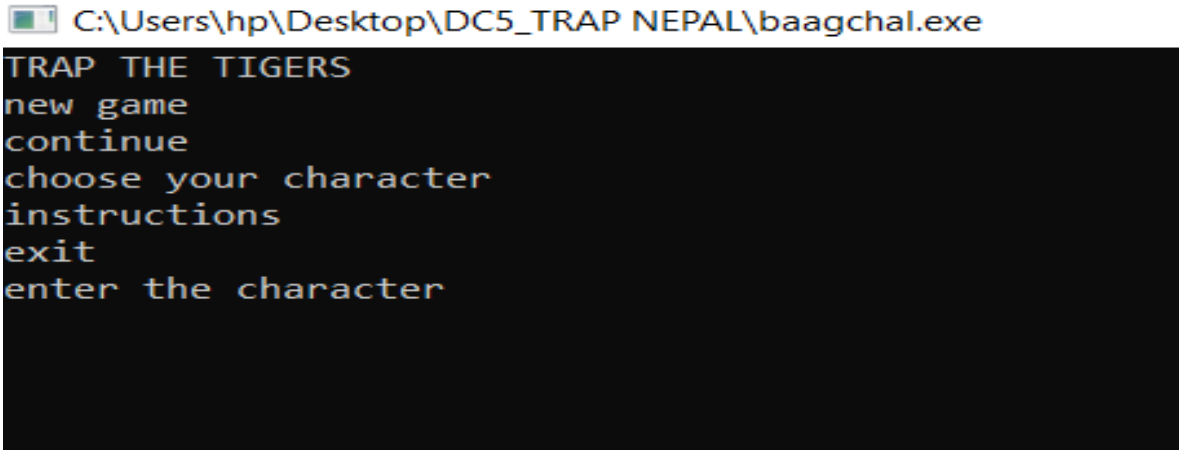


Figure 3:starting of the game

SELECTING THE OPTION:

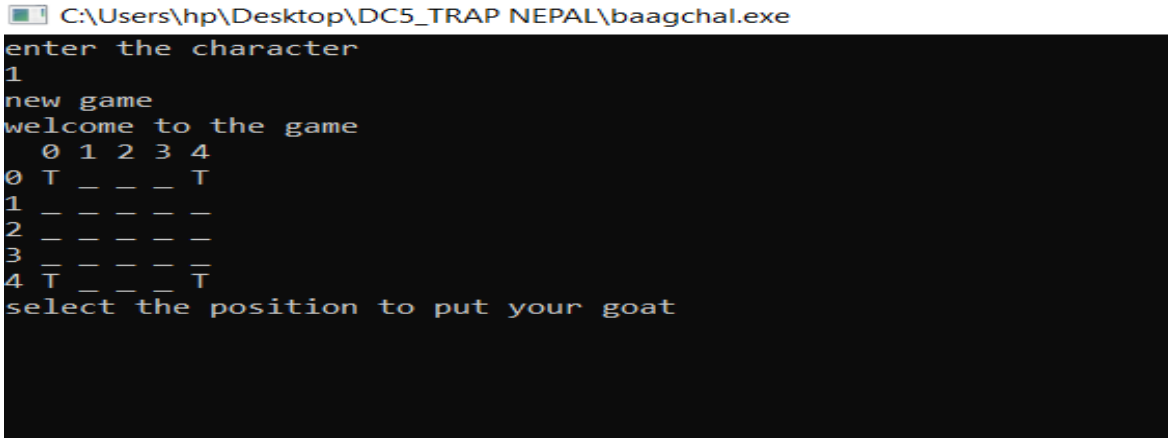


Figure 4:option selected as New Game.

SELECTING THE POSITION TO PUT GOAT:

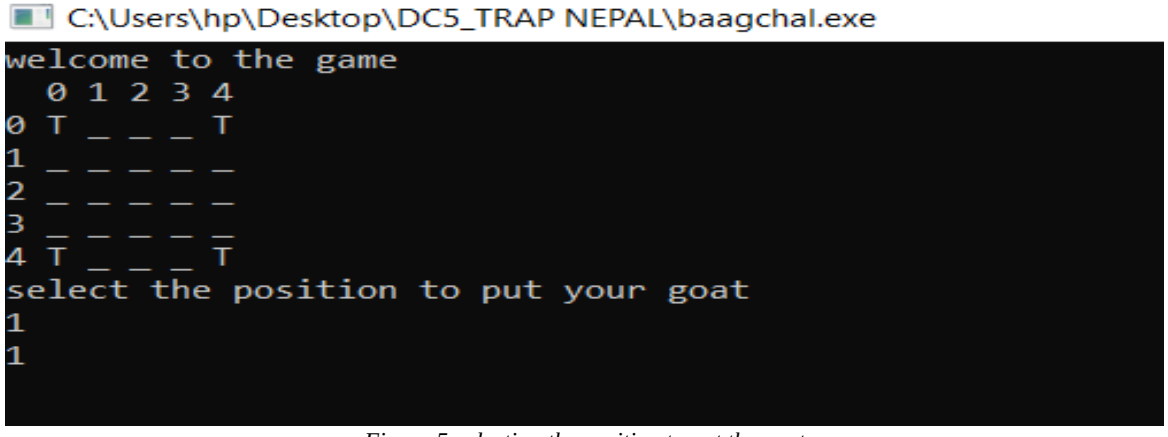


Figure 5:selecting the position to put the goat

SELECTING THE TIGER TO MOVE:

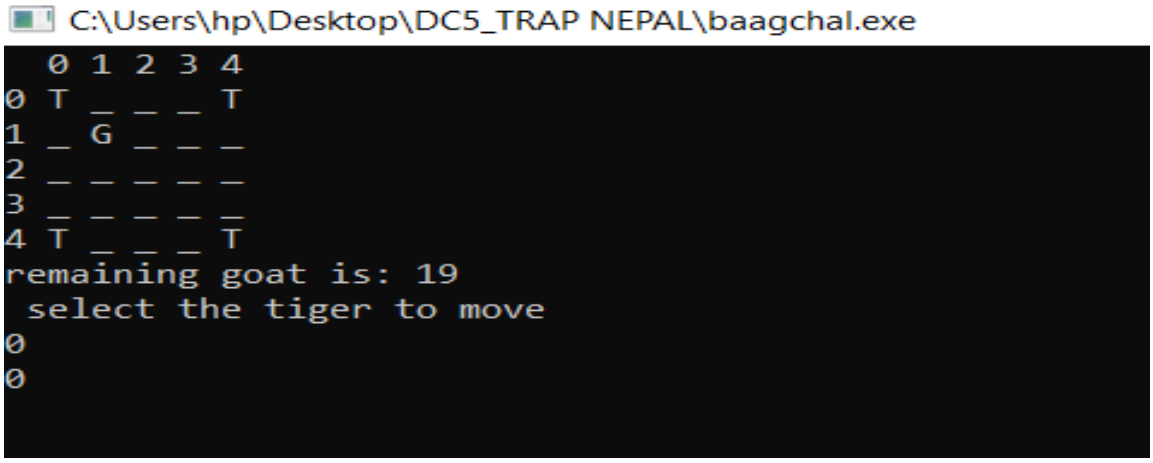


Figure 6:selecting the tiger to move

DETERMINING THE DIRECTION TO MOVE TIGER:

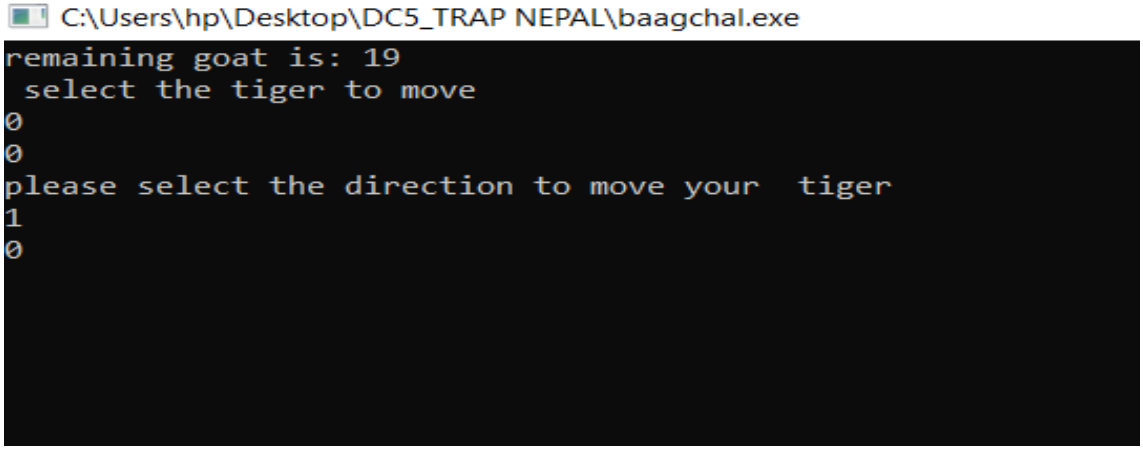


Figure 7:determining the direction to move the selected tiger

TIGER IN SELECTED POSITION:

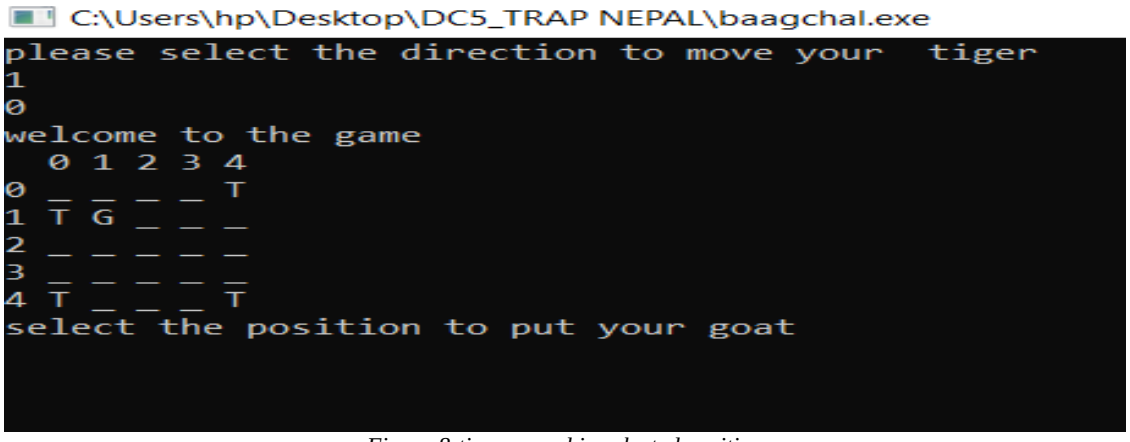


Figure 8:tiger moved in selected position

SECOND GOAT IN ITS SELECTED POSITION:

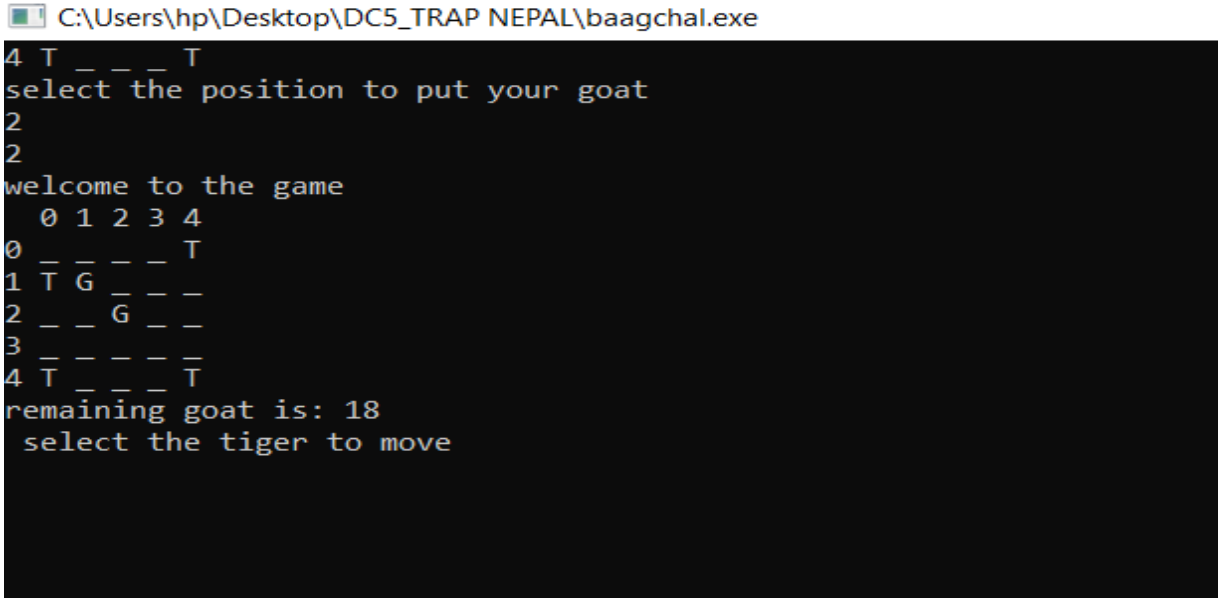


Figure 9:second goat in its position and remaining goat is 18

EXITING THE GAME:

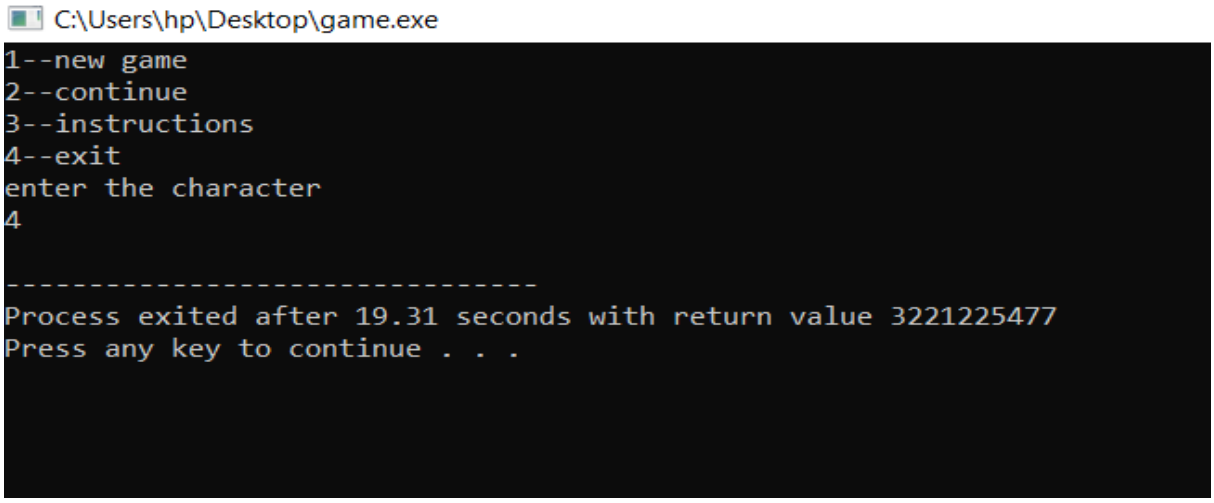


Figure 10:Exiting the game.

CONCLUSION:

The gaming application that we have developed turned out to be satisfied. But it could have been better if we have used some graphics. Moreover, it could be an amazing gaming application if java was used since it is a mobile based gaming application. The game is easily understandable by the programmer but it can be difficult for the public user if it has been developed properly and launched.
Thank You!

References

Anon., 2011. *Hamro Paathshala*. [Online]
Available at: https://hamropathshala.wordpress.com/2011/01/16/i-wrote-program-of-nepal-traditional-board-game-bagh-chal/
[Accessed 25 DECEMBER 2019].