

Introduction to Computing

EN2004

COURSE PROJECT

# Creation of Digital Board Game: Bringing Cultural Aspect to Computing

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PROBLEM STATEMENT:

You are a board game designer and programmer who knows problem-solving strategies, and you have been assigned the task of creating a board game that reflects the traditional nature of the games in a fun and interesting way!

DESCRIPTION OF GAME:

Nav SAR is an Indian board game which is mostly played in villages of India especially CENTRAL INDIA. In this game each players are having 9 “sars” (pebbles). This is a two-player game and the one who kills all the pieces of opponent player will win the game. It’s two players board game, both players posses 9 pieces/pebbles each.

AIM:

The basic aim of NAV – SAR is to make "mills" - vertical or horizontal lines of three in a row. Every time this is achieved, an opponent's piece is removed, the overall objective being to reduce the number of opponent's pieces to less than three or to render the opponent unable to play.

OBJECTIVE:

The game of NAV – SAR is played on a board consisting of three concentric squares connected by lines from the middle of each of the inner square's sides to the middle of the corresponding outer square's side. Pieces are played on the corner points and on the points where lines intersect so there are 24 playable points.

RULES:

* The objective of game is being to capture opposing pieces by forming lines of 3.
* To begin with, players take turns to play a piece of their own colour on any unoccupied point until all eighteen pieces have been played.
* After that, play continues alternately but each turn consists of a player moving one piece along a line to an adjacent point.
* During both of these phases, whenever a player achieves a mill, that player immediately removes from the board one piece belonging to the opponent that does not form part of a mill.
* If all the opponents pieces form mills then an exception is made and the player is allowed to remove any piece.
* It is only upon the formation of a mill that a piece is captured but a player will often break a mill by moving a piece out of it and then, in a subsequent turn, play the piece back again, thus forming a new mill and capturing another piece.
* Captured pieces are never replayed onto the board and remain captured for the remainder of the game. The game is finished when a player loses either by being reduced to two pieces or by being unable to move.

TIMELINE:

ALGORITHM:

* I used DEEP COPY- It makes the copy of the original object if we make changes in the copied object, it will not reflect to the original one.
* In this game, when a player connects 3 in a row, he can take one of the opponents pebble, here we use DEEPCOPY to create a newboard and removing the pebbles.
* It’s like every time one can make a move, the deepcopy creates a newboard and updates the changes,
* I will be defining FUNCTIONS for Displaying:

\* Information about the game

\* Rules

\* Functionality

\* Creating New Display

\* Move Pebbles

WINDOWS CODE:

from tkinter import \*

def intructs():

window = Toplevel(screen)

window.geometry("800x600")

window.title("How to play")

window.configure(background="blue")

heading = Label(window, text="Instructions", font="Times 16 bold italic")

lb1 = Label(window, text="The objective of game is being to capture opposing pieces by forming lines of 3.", font="Times",bg="blue")

lb2 = Label(window, text="To begin with, players take turns to play a piece of their own colour on any unoccupied point until all eighteen pieces have been played.",font="Times", bg="blue")

lb3 = Label(window, text="After that, play continues alternately but each turn consists of a player moving one piece along a line to an adjacent point.",font="Times", bg="blue")

lb4 = Label(window, text="During both of these phases, whenever a player achieves a mill, that player immediately removes from the board one piece belonging to the opponent that does not form part of a mill.",font="Times", bg="blue")

lb5 = Label(window, text="If all the opponents pieces form mills then an exception is made and the player is allowed to remove any piece.",font="Times", bg="blue")

lb6 = Label(window, text="It is only upon the formation of a mill that a piece is captured but a player will often break a mill by moving a piece out of it and then, in a subsequent turn, \n play the piece back again, thus forming a new mill and capturing another piece.",font="Times", bg="blue")

lb7 = Label(window, text="Captured pieces are never replayed onto the board and remain captured for the remainder of the game.\n The game is finished when a player loses either by being reduced to two pieces or by being unable to move.",font="Times", bg="blue")

heading.pack(side=TOP)

lb1.pack(side=TOP)

lb2.pack(side=TOP)

lb3.pack(side=TOP)

lb4.pack(side=TOP)

lb5.pack(side=TOP)

lb6.pack(side=TOP)

lb7.pack(side=TOP)

screen = Tk()

bg=PhotoImage(file="bk.png")

my\_label=Label(screen,image=bg)

my\_label.place(x=0,y=0,relwidth=1,relheight=1)

name=Label(screen, text="NAV SAR",fg="red",font="Times 16 bold italic",bg="orange")

name.pack(side=TOP)

btn2 = Button(screen, text="Start Game", fg="Blue")

btn2.place(x=730,y=250)

btn = Button(screen, text="Instruction", command=intructs, fg="Red")

btn.place(x=730,y=275)

screen.title("NAV SAR")

screen.resizable(False,False)

screen.geometry("800x600")

screen.mainloop()



