1. Game

1.1 What is a game?

A game is a recreational activity involving one or more players. This can be defined by A) a goal that the players try to reach; B) some set of rules that determines what the players can or cannot do. Games are played primarily for entertainment or enjoyment, but may also serve an educational or simulative role.

A game is a structured or semi-structured activity, usually undertaken for enjoyment. Key components of games are goals, rules, challenge, and interactivity. Games generally involve mental or physical stimulation, and sometimes both. Many games help develop practical skills, serve as a form of exercise, or otherwise perform an educational, simulative or psychological role.

Known to have been played as far back as prehistoric times, games are generally distinct from work, which is usually carried out for remuneration, and from art, which is more concerned with the expression of ideas. However, the distinction is not clear-cut, and many games may also be considered work, art, or all three.
Ludwig Wittgenstein was probably the first to give serious thought to the definition of the word. In his *Philosophical Investigations*, Wittgenstein demonstrated that the elements of games, such as play, rules, and competition, all fail to adequately define what games are. He subsequently argued that the concept "game" could not be contained by any single definition, but that games must be looked at as a series of definitions that share a "family resemblance" to one another.

Computer game designer Chris Crawford attempted to define the term *game* using a series of dichotomies:

1. Creative expression is *art* if made for its own beauty, and *entertainment* if made for money.
2. A piece of entertainment is a *plaything* if it is interactive. Movies and books are cited as examples of non-interactive entertainment.
3. If no goals are associated with a plaything, it is a *toy*.
4. If a challenge has no "active agent against whom you compete," it is a *puzzle*;
5. Finally, if the player can only outperform the opponent, but not attack them to interfere with their performance, the conflict is a *competition*. (*Competitions include racing and figure skating.*) However, if attacks are allowed, then the conflict qualifies as a game.

Crawford's definition may thus be rendered as: an interactive, goal-oriented activity which features opposition with which the player can interfere and is not done primarily for aesthetic or monetary concerns.

Crawford also notes these other definitions:

- "A form of play with goals and structure." (Kevin Maroney)
- "A game is a form of art in which participants, termed players, make decisions in order to manage resources through game tokens in the pursuit of a goal.” (Greg Costikyan)
- "An activity with some rules engaged in for an outcome." (Eric Zimmerman)

1.2 Single-player games

Single-player games are unique in respect to the type of challenges a player faces. Unlike a game with multiple players competing with or against each other to reach the game's goal, a one-player game is a battle solely against an artificial opponent, against one's own skills, or against chance.

Playing with a yoyo or playing tennis against a wall is not generally recognized as playing a game due to the lack of any opposition. However, this is not the case in a single player computer game where the computer provides opposition.

1.3 Play and Game play

Games can be characterized by "what the player does". This is often referred to as game play. Major elements identified in this context are tools and rules which define the overall context of game and which in turn produce skill, strategy, and chance.

The term game play arose along the development of computer game designers in the 1980s, and was used primarily within the context of video or computer games, though now its popularity has begun to see use in the description of other, more traditional, game forms.
1.4 Tools

Games are often classified by the components required to play them (e.g. a ball, cards, a board and pieces or a computer). In places where the use of leather was well established, the ball is a popular game tool, resulting in a worldwide popularity of ball games (rugby, basketball, football, cricket, tennis, volleyball). Other tools are more idiosyncratic to a certain region. Cards, for instance, display great variations between the countries of Europe where they were originally popularized. Other games such as chess may be traced primarily through the development and evolution of its game pieces.

Many game tools are tokens, meant to represent other things. This may be a pawn on a board, fake money, or even intangible things such as points earned by scoring a goal.

In computer games, the evolution of user interfaces from simple keyboard to mouse, joystick or joy pad has had a profound impact to game development. Moreover, computer games can create virtual tools to be used in a game, such as cards or dice.

Game such as hide and seek or tag do not utilize any obvious tool. Rather its interactivity is defined by the environment. Games with the same or similar rules may have different game play if the environment is altered. For example, hide and seek in school building differs from the same game in an outside field; a car race can be radically different from one track to another.
1.5 Rules

Whereas games are often characterized by their tools, they are often defined by their rules. While rules are subject to variations and changes, enough change in the rules usually results in a "new" game. For instance, baseball can be played with "real" baseballs or with whiffleballs. However, if the players decide to play with only three bases, they are arguably playing a different game.

Rules generally determine turn order, the rights and responsibilities of the players, and win conditions. Player rights may include when they may spend resources or move tokens. Win conditions are often measured in meeting a certain quota of tokens (as in Settlers of Catan), having the greatest number of tokens at the end of the game (as in Monopoly), or some relationship of game tokens (as in chess's checkmate).

Ludwig Wittgenstein went as far as arguing that language was itself a game consisting of tokens governed by rough-and-ready rules that arise by convention and are not strict.

1.6 Skill, Strategy, and Chance

The emergent effect of a game's tools and rules applied by players is to display skill, strategy, and chance. Games may be typified when they prominently feature one of these.

Games of skill includes games of physical skill, such as wrestling, tag of war, hopscotch and target shooting, and games of mental skill such as checkers and chess. However, certain competitive sports such as marathons, 100m track, or gymnastics
are often not recognized as games (though it is a part of the Olympic Games) because the idea of testing pure physical attributes does not contain interactivity.

Games of strategy include checkers, go, arimaa, and tic-tac-toe. They, as in games of chance, often require special equipment to be played.

Games of chance include various form of gambling games (blackjack, mah jong, etc) and snakes and ladders as well as rock-scissor-paper. However, flipping a coin is not consider to be a game because pure chance determines the outcome.

However, most games contain various degrees of all above elements. For example, football and baseball involve both skill and strategy while poker involves strategy and chance. It is often the interaction of these elements that makes game play enjoyable.

1.7 Anthropology of Games

Games are intimately connected to culture. For example, tag is associated with hunting. The historical popularity of ballgame in Europe is associated with their familiarity with leather. Many martial culture practiced wrestling. Golf originated by a shepard in Scottish highland and maintains its associations with broad, flat stretches of grassland.

Moreover, games always have some social aspect. For example, games can be characterized in terms of the intended occasion of play: party games are played at parties, and family games with families. This characterization may also serve as a tool of exclusion. A drinking game is rarely appropriate for children, for instance, and polo requires significant investment both in terms of money and leisure time, making it a game of the upper class.
1.8 Animals and Games

Domestic animals have been observed playing simpler games such as tag, tug-of-war, and fetch. Whether this is due to instinct or conscious choice, and whether the animals are capable of the strategic thinking to interfere with their opposition, questions whether this activity is actually a game.

1.9 Game theory

What economists call game theory psychologists call the theory of social situations, which is an accurate description of what game theory is about. Although game theory is relevant to parlor games such as poker or bridge, most research in game theory focuses on how groups of people interact. There are two main branches of game theory: cooperative and non-cooperative game theory. Non-cooperative game theory deals largely with how intelligent individuals interact with one another in an effort to achieve their own goals.

In addition to game theory, economic theory has three other main branches: decision theory, general equilibrium theory and mechanism design theory. All are closely connected to game theory.

2. Sport

2.1 What is a sport?

Sport is a physical activity involving large muscle groups, requiring strategic methods, physical training and mental preparation and whose outcome is determined, within a rules framework, by skill, not chance. Sport occurs in an organized, structured and competitive environment where a winner is declared.
A sport is an activity requiring physical ability, physical fitness or physical skill which usually, but not always, involves competition between two or more people.

2.2 History of Sport

The development of sports throughout history teaches us a great deal about social changes and also a lot about the nature of sport itself.

There are many modern discoveries in France, Africa, and Australia of cave art (see, for example, Lascaux) from prehistory that provide evidence of ritual ceremonial behavior. Some of these sources date from over 30,000 years ago, as established by carbon dating. Although there is scant direct evidence of sport from these sources, it is reasonable to extrapolate that there were activities during these times that would fit the modern definition of sport.

There are artifacts and structures that suggest that the Chinese engaged in sporting activities as early as 4000 BC. Gymnastics appears to have been a popular sport in China's ancient past. Monuments to the Pharaohs indicate that a range of sports, including swimming and fishing, were well-developed and regulated several thousands of years ago in ancient Egypt. Other Egyptian sports included javelin throwing, high jump, and wrestling. Ancient Persian sports such as the traditional Iranian martial art of Zourkhaneh had a close connection to the warfare skills. Among other sports that originate in Persia are polo and jousting.

In Europe, ancient Irish legends show evidence of the ancestor of modern hurling being used as a means of preparing warriors for battle as far back as the 13th century BC.
A wide range of sports were already established at the time of Ancient Greece. They were wrestling, running, boxing, javelin, discus throwing, and chariot racing. This wide range of activities suggests that the military culture and the development of sports in Greece informed one another considerably. Sports became such a prominent part of their culture that the Greeks created the Olympic Games, which in ancient times were held every four years in a small village in the Peloponnesus called Olympia.

Sports have been increasingly organized and regulated from the time of the Ancient Olympics up to the present century. Industrialization has brought increased leisure time to the citizens of developed and developing countries, leading to more time for citizens to attend and follow spectator sports, greater participation in athletic activities, and increased accessibility. These trends continued with the advent of mass media and global communication. Professionalism became prevalent, further adding to the increase in sport's popularity, as sports fans began following the exploits of professional athletes through radio, television, and the internet—all while enjoying the exercise and competition associated with amateur participation in sports.

Worldwide, soccer is the most popular sport of all. In the United States, baseball, basketball, and U.S. football are popular as well.

2.3 Classification

List of Sports

One system for classifying sports is as follows, based more on the sport's aim than on the actual mechanics. The examples given are intended to be illustrative, rather than comprehensive.
2.4 Opponent

- Combat (wrestling, Judo, karate, boxing, fencing, tae kwon do)
- Court (tennis, shuttlecock sport, badminton, volleyball, basketball, table tennis, dodgeball, Netball)
- Board (chess, checkers, go, bridge, blackjack, monopoly, shogi. Most of these may not be classified as sports but rather as games; hence the phrase board games.

Chess can be considered exempt because of the requisite skill required to play.

2.5 Achievement

- Target (archery, shooting, darts, snooker)
- Display (gymnastics, bodybuilding, equestrianism, diving, Marching Band, cheerleading)
- Strength (weight-lifting, triple jump, shot put)
- Endurance (running, cycling, swimming, triathlon, orienteering, cross-country skiing)
- Experience (yachting, gliding)

2.6 Team sports

Team sports refer to sports which are practiced between opposing teams, where the players interact directly and simultaneously between them to achieve the objective, such as football (in its various forms), cricket, curling, baseball, handball, hockey, basketball or volleyball. The term is used to distinguish itself from individual sports which are based on one-on-one direct confrontation (such as most raquet
sports, boxing, gymnastics or Martial arts) or timed races (such as athletics or swimming).

2.7 Spectator sports

Spectator sports are ones that is characterized by the presence of spectators, or watchers, at its matches.

Other

- Bowling
- Curling
- Darts
- Fishing
- Golf
- Polo

2.8 Sportsmanship

Sportsmanship is defined as "conduct and attitude considered as befitting participants, including a sense of fair play, courtesy toward teammates and opponents, a striving spirit, and grace in losing."

The motivation for sport is often an elusive element. For example, beginners in sailing are often told that dinghy racing is a good means to sharpen the learner's sailing skills. However, it often emerges that skills are honed to increase racing performance and achievements in competition, rather than the converse. Sportsmanship expresses an aspiration or ethos that the activity will be enjoyed for its own sake. The well-known sentiment by sports journalist Grantland Rice, that it's "not that you won or lost but how you played the game," and the Modern Olympic creed expressed by its founder Pierre de Coubertin: "The most important thing . . . is not winning but taking part" are typical expressions of this sentiment.
But often the pressures of competition or an obsession with individual achievement—as well as the intrusion of technology—can all work against enjoyment and fair play by participants.

People responsible for leisure activities often seek recognition and respectability as sports by joining sports federations such as the IOC, or by forming their own regulatory body. In this way sports evolve from leisure activity to more formal sports: relatively recent newcomers are BMX cycling, snowboarding, and wrestling. Some of these activities have been popular but uncodified pursuits in various forms for different lengths of time. Indeed, the formal regulation of sport is a relatively modern and increasing development.

Sportsmanship, within any given game, is how each competitor acts before, during, and after the competition. Not only it is important to have good sportsmanship if one wins, but also if one loses. For example, in football it is considered sportsmanlike to kick the ball out of play to allow treatment for an injured player on the other side. Reciprocally, the other team is expected to return the ball from the throw-in.

Violence in sports involves crossing the line between fair competition and intentional aggressive violence. Athletes, coaches, fans, and parents sometimes unleash violent behaviour on people or property, in misguided shows of loyalty, dominance, anger, or celebration.

2.9 Professionalism and regulation

The entertainment aspect of sports, together with the spread of mass media and increased leisure time, has led to professionalism in sports. This has resulted in some conflict, where the paycheck can be seen as more important than recreational
aspects: or where the sports are changed simply to make it more profitable and popular therefore losing some of the traditions valued by some.

The entertainment aspect also means that sportsmen and women are often elevated to celebrity status, or in some cases near-god-like.

2.10 Politics

There have been many dilemmas for sports where a difficult political context is in place.

When apartheid was the official policy in South Africa, many sportspeople adopted the conscientious approach that they should not appear in competitive sports there. Some feel this was an effective contribution to the eventual demolition of the policy of apartheid, others feel that it may have prolonged and reinforced its worst effects.

The 1936 Summer Olympics held in Berlin was an illustration, perhaps best recognised in retrospect, where an ideology was developing which used the event to strengthen its spread through propaganda.

In the history of Ireland, Gaelic sports were connected with cultural nationalism. Until the mid 20th century a person could have been banned from playing Gaelic football, hurling, or other sports administered by the Gaelic Athletic Association (GAA) if she/he played or supported soccer, or other games seen to be of British origin. Until recently the GAA continued to ban the playing of soccer and rugby union at Gaelic venues. This ban is still enforced, but has been modified to allow football and rugby be played in Croke Park while Lansdowne Road is being redeveloped. Until recently, under Rule 21, the GAA also banned members of the
British security forces and members of the RUC from playing Gaelic games, but the advent of the Good Friday Agreement in 1998 led to the eventual removal of the ban.

Nationalism in general is often evident in the pursuit of sports, or in its reporting: people compete in national teams, or commentators and audiences can adopt a partisan view. These trends are seen by some as contrary to the fundamental ethos of sports being carried on for its own sake, for the enjoyment of its participants.

2.11 Art

Sports have many affinities with art. Ice skating and Tai chi, for example, are sports that come close to artistic spectacles in themselves: to watch these activities comes close to the experience of spectating at a ballet. Similarly, there are other activities that have elements of sport and art in their execution, such as performance art, artistic gymnastics, body building, parkour, yoga, baseball, dressage, etc. Perhaps the best example is bull-fighting, which in Spain is reported in the arts pages of newspapers.

The fact that art is so close to sports in some situations is probably related to the nature of sports. The definition of "sports" above put forward the idea of an activity pursued not just for the usual purposes, for example, running not simply to get places, but running for its own sake, running as well as we can.

This is similar to a common view of aesthetic value, which is seen as something over and above the strictly functional value coming from an object's normal use. So an aesthetically pleasing car is one which doesn't just get from A to B, but which impresses us with its grace, poise, and charisma.
In the same way, a sporting performance such as jumping doesn't just impress us as being an effective way to avoid obstacles or to get across streams. It impresses us because of the ability, skill, and style which is shown.

Art and sports were probably more clearly linked at the time of Ancient Greece, when gymnastics and calisthenics invoked admiration and aesthetic appreciation for the physical build, prowess and 'arête' displayed by participants. The modern term 'art' as skill, is related to this ancient Greek term 'arête'. The closeness of art and sport in these times was revealed by the nature of the Olympic Games which, as we have seen, were celebrations of both sporting and artistic achievements, poetry, sculpture and architecture.

2.12 Technology

Technology has an important role in sports, whether applied to an athlete's health, the athlete's technique, or equipment's characteristics.

Equipment As sports have grown more competitive, the need for better equipment has arose. Golf clubs, baseball bats, soccer balls, hockey skates, and other equipment have all seen considerable changes when new technologies have been applied.

Health Ranging from nutrition to the treatment of injuries, as the knowledge of the human body has deepened over time, an athlete's potential has been increased. Athletes are now able to play to an older age, recover more quickly from injuries, and train more effectively than previous generations of athletes.

Instruction Advancing technology created new opportunities for research into sports. It is now possible to analyse aspects of sports that were previously out of the
reach of comprehension. Being able to use motion capture to capture an athlete's movement, or advanced computer simulations to model physical scenarios has greatly increased an athlete's ability to understand what they are doing and how they can improve themselves.

3. Games and sports

There is no clear line of demarcation between games and sports. Generally, sports are athletic in nature, and have an element of physical prowess, but then so do many games. For cultural anthropologists, the distinction between games and sports hinges on community involvement. Sports, as opposed to games, often require special equipment and playing fields or prepared grounds dedicated to their practice, a fact that often makes necessary the involvement of a community beyond the players themselves. Most sports can have spectators. Communities often align themselves with players of sports, who in a sense represent that community; they often align themselves against their opponents, or have traditional rivalries. The concept of fandom began with sports fans. Games amuse the players; sports amuse a broader public; in advanced material cultures, sports can be played by paid professionals. When games like chess and go are played professionally, they take on many of the characteristics of a sport.

3.1 Games and Sports in India

In early India, games and sports were very much concerned about the development of the physique and for the art of offence and defense. Also games were considered a kind of recreation, which played a vital role in the development of a
man's personality. Important of them included indoor games, music, fishing and boating, singing and dancing, water sports, etc.

India has a rich heritage of these activities as can be found in the archaeological excavations of Mohenjadaro and Harappa, the Vedic literature, The Ramayana and the Mahabharata, the Puranas, the literary works of Kautilya, Kalidasa, Panini and Dandin as well as a whole lot of Buddhist and Jain literatures. Various archaeological evidences like coins, inscriptions and monumental carvings support them.

The history of sports in India dates back to the Vedic era. Physical culture in ancient India was fed by a powerful fuel—religious rites. There were some well-defined values like the mantra in the Atharva-Veda, saying, "Duty is in my right hand and the fruits of victory in my left". In terms of an ideal, these words hold the same sentiments as the traditional Olympic oath: "......For the Honour of my Country and the Glory of Sport." The founders of the Olympic idea had India very much in mind when they were deciding on the various disciplines. There is a fascinating link between Greece and India which stretches back to 975 B.C. The zest for chariot-racing and wrestling was common to both the countries.

In India, dehvada or the body-way is defined as "one of the ways to full realisation." In the day and age of the Rig-Veda, Ramayana and Mahabharata men of stature and circumstance were expected to be competent in chariot-racing, archery, horsemanship, military tactics, wrestling, weight-lifting, swimming and hunting.

The guru-shishya (teacher-pupil) relationship has always been an integral part of Indian sport from time immemorial. Indian sport reached a peak of excellence when Buddhism held sway here. In Villas Mani Majra, Tirurvedacharya describes
many fascinating games, namely, archery, equitation, hammer-throwing and chariot-racing. In *Manasollas* (1135 A.D.), Someshwara writes about *bhrashram* (weight-lifting), *bhramanshram* (walking) and also about *mall-stambha* (wrestling).

It is more than likely that many of today's Olympic disciplines are sophisticated versions of the games of strength and speed that flourished in ancient India and Greece. Chess, wrestling, polo, archery and hockey (possibly a fall-out from polo) are some of the games believed to have originated in India.

### 3.2 India’s contribution

India's role in the history of the world's games specially board games can only be described as being of primary importance. Boards, dice and pieces are known from archaeological sites of the third millennium BC, and there is evidence of many kinds to show that games of chance and skill have persistently held an important place in Indian cultures over the intervening millennia.

### 4. Aims and Objectives

With this concept as background, my study aims to reconstruct and explain the origin and genesis of traditional oriental games of India especially the Board games. In doing so, I try to follow several lines of thought; first is the idea that the structure of oriental board games, formed by the various movements of its playing pieces, must be deeply understood and compared with other contemporaneous games. Second is the idea that we must be aware of the broader cultural and social movements in the eras we are investigating, if we are to understand the social atmosphere in which the board games arose.
In order to go deep into the History & Archaeological aspects of Board games and study the origin and its developments in this field around the country, it is essential that I should have a first hand knowledge of the available sources both literary and archaeological, apart from the academic interaction with the researchers. It is unfortunate that no published material is available in this field and hence my work is first of its kind and is appropriate and necessary.

The primary aim of my work is to survey, classify, catalogue and describe the distribution of games and sports in India at large, and Andhra Pradesh in particular, with special emphasis on literary data. It is possible that this survey and investigation would incorporate evidence of both the kinds, that (a) games still played in towns, villages and cities and (b) games recorded in stone on floors, pavements, temple walls and streets that might or might not be in usage and finds a place in Telugu literature.

The central theme of my thesis is to prepare a comprehensive inventory on the contribution of the Andhra Pradesh to the field of games, specially board games from a scientific and mathematical perspective. This documentation provides a list of known games, and a reference sheet of game board diagrams and photographs. A summary in two or three lines follows of how a given game works.

Remaining other games such as card games, ball games, number games will also be notified.

5. Outline of the thesis

The collection and comparative study of board games, from different parts of Andhra Pradesh, can yield rich sociological & historical information.
With this in mind the present thesis has been thought of and it consists of several sections. It advocates

- a suitable approach to the investigation,
- outlines the goals of the investigation,
- includes an overall working survey of the known games, with diagrams and an outline summary of how each game is played.
- The aims are to record and document as much information as possible.

6. Need for the present study

In almost every field of academic endeavor, a work of high standard is, by now, presented. However, surprisingly enough, serious academic researchers have apparently not been much interested in the history and archaeology of traditional oriental games and thus have not bothered to or even thought of going back to examine their influence on the community. Unfortunately, the Indologists, who by and large followed the western studies of Indian culture, also neglected this dimension of culture.

7. Available material

- Literary material is abundant and has to be chronologically studied and get together.
- Palm leaf and paper manuscripts (unpublished) are available in abundance in different libraries in different languages and they are to be collected and deciphered.
• Games and sports representation found in various monuments and museums and they are to be identified and photographed.

8. Methodology

◊ Evidence of games in India is available in varied forms. Most important are literary sources where detailed description are available and has to be properly interpreted.

◊ Alternative sources of information are the numerous but largely uncharted examples of games and boards scratched on pavements and around temples and public places, preserved in Museums, some of evident antiquity, which provide mute testimony to the enduring popularity of such activities. Several scholars working earlier in the century have done much preparatory work in collecting evidence of this kind, but this has only been undertaken on a limited scale, and much remains to be discovered and recorded. Careful analysis of the locations in which such graffiti boards are found can be extremely informative, both in terms of social and religious history, and even for dating purposes, as when an old stone bearing such a board is discovered re-used in a stairway whose date of construction might be known. Again, a photographic archive of such boards, photographed in raking light and systematically recorded, would be invaluable.

◊ A study of local equipment of board games, that is decorated boards, dice and gaming pieces, is an important aspect of the thesis. No previous attempt has been made to investigate such matters consistently, or on a broad scale, whereas it is obvious that regional styles and characteristics must prevail, and will be comparable with other traditional products in cloth, wood, bone and
ivory. Old cloth boards, unused in families have often long since been thrown away. Dice and pieces can find themselves recycled as jewellery, and much of this aspect of culture is in a state of change.

◊ Again, in the case of simpler games, the ‘board’ will be drawn on the ground, and anything to hand (such as pebbles or seeds) will be pressed into ephemeral service for dice and pieces. In such cases an archive of photographs of games in play would be most desirable.

◊ Local terms for games, pieces and other relevant matters would be carefully recorded both in the local script, in transliteration, and translation.

9. Chapterization

Keeping these fats the thesis has been divided into two parts, the first part deals with the background for the study of Games and Sports and the second part deals with the Andhra Pradesh Games and sports itself, where in the study is divided into; Infant games, Games played by school going children, Games played by boys, Games played by girls, Games played by women, Games played by teams and a special section has been devoted to the research carried out on a few board games.