

**VARISITY-GAMERS**

# **GAME DESIGN COMPETITION WRITE-UP**

**SRS DOCUMENT FOR “WAR OF CODES”**

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**Youtube Video URL Link:** <https://youtu.be/EH4KLgmGapU>

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## 1. Game Overview

### 1.1. Game Name

**“War Of Codes”** **Code Connect And Conquer**, an online game focuses on heightening the *programming skills* by *gamification technique*.

It is a ***Stramm*** (Strategy based Programming Game) whose *weapons are codes* or we can say programming skills. Like wars are not won just by weapons and army; desire to win, determination, coordination etc. are the factors that plays a crucial role in winning a war, similarly to win “**War Of Codes**” along with programming skills, soft skills like leadership, team player, good communication, analytical and planning plays a key role.

### 1.2. Business Field & Target Audience

- *War Of Codes* will primarily focus on programming and management skills irrespective of the level of experience the user previously had. It will guide the naive in learning programming skills and other essential skills required in corporate world. While average and experienced user will enhance their programming and managerial skills, while playing community mode of the game. Since it covers a wide range of aspect a person can improve on, it is a “**multi-paradigm game**”.
- War Of Codes does not limit to a particular age group. It is open to all who has *desire to code*, whether he can be a *high school student or a college student or a professional employee*. Player can either be a naive in programming or he can be an expert.

### 1.3. Expected Game Impact

- In today’s fast growing world, everything is being done through computers which need computer programs /software to perform any action. We need developers in bulk who can write codes for software. But to develop software we need strong programming and analytical skills, and this is the point where the existing crowd lacks.
- Though there exist a bunch of websites and apps that tries to solve the problem, but they are unable to make it fun and interesting to code. As “**War Of Codes**” is a game, it will make *fun to code* and will try to make it interesting also. The level and design of challenges that come will come up during the game play will make it *unique and distinct* in its class and hence the curiosity and desire to learn and apply, will keep on increasing on and on...
- In addition to all the above the game will also develop player’s leadership skills, communication skills, mutual understanding between community members, decision making ability ,ability to work as a team while he is in community mode of the game.

## 2. Game Concept

War Of Codes will come up with two modes in which a player can play:-

- I. Solo Mode
- II. Community Mode

### ❖ Solo Mode:-

In solo mode as the name suggest player will face the challenges alone and he will be expected to submit the solution on his own. In this mode of game player will be able to enhance his programming, analytical, problem solving skills.

In the solo mode a player will get rewards in two forms:-

- a) Gold coins
- b) I Points

- Gold coins:-

Gold coins will work as a money equivalent in the game. These gold coins will allow the player to buy various resources during the game.

- I Points:-

I Points will work as the *Intellectual Property* of the player. These are the I-Points which will be used in evaluating the player's ranking and performance.

- Resource:-

A resource is like a feature or add-on which will help a player to solve the given challenges more easily. There will be three types of resources in the game viz. Header file, space taken by the program, time taken by the program to execute.

### ❖ Community Mode:-

In community mode a player will either form a community or he will be joining an existing community. Each community will consist of a community leader who will be responsible for various community tasks viz. Challenging other communities, accept challenges from other community, completing pending challenges. Team leader will to manage all these responsibilities and manage his community. This will ensure enhancement in managerial skills viz. Planning, organising, staffing, directing and controlling. Also as the challenges will be related to programming, hence incrementing the analytical, problem solving skills of a player.

In the community mode a player will get rewards in two forms:-

- a) Gold coins
- b) C-Ppoints
- c) I-Ppoints

- C-Points:-

C-Points will work as the *Intellectual Property* of the community. These are the C-Points which will be used in evaluating the community's ranking and performance.

The community mode will also incorporate some extra soft skills viz. co-operating and most imp one discipline and as these skill plays a key role while working in a team, so the leader will be having powers to expel a player from his community. This will ensure that all the players in the community will be doing some amount of work.

## 2.1 Game Play & Game Mechanics

### ❖ Solo Mode:-

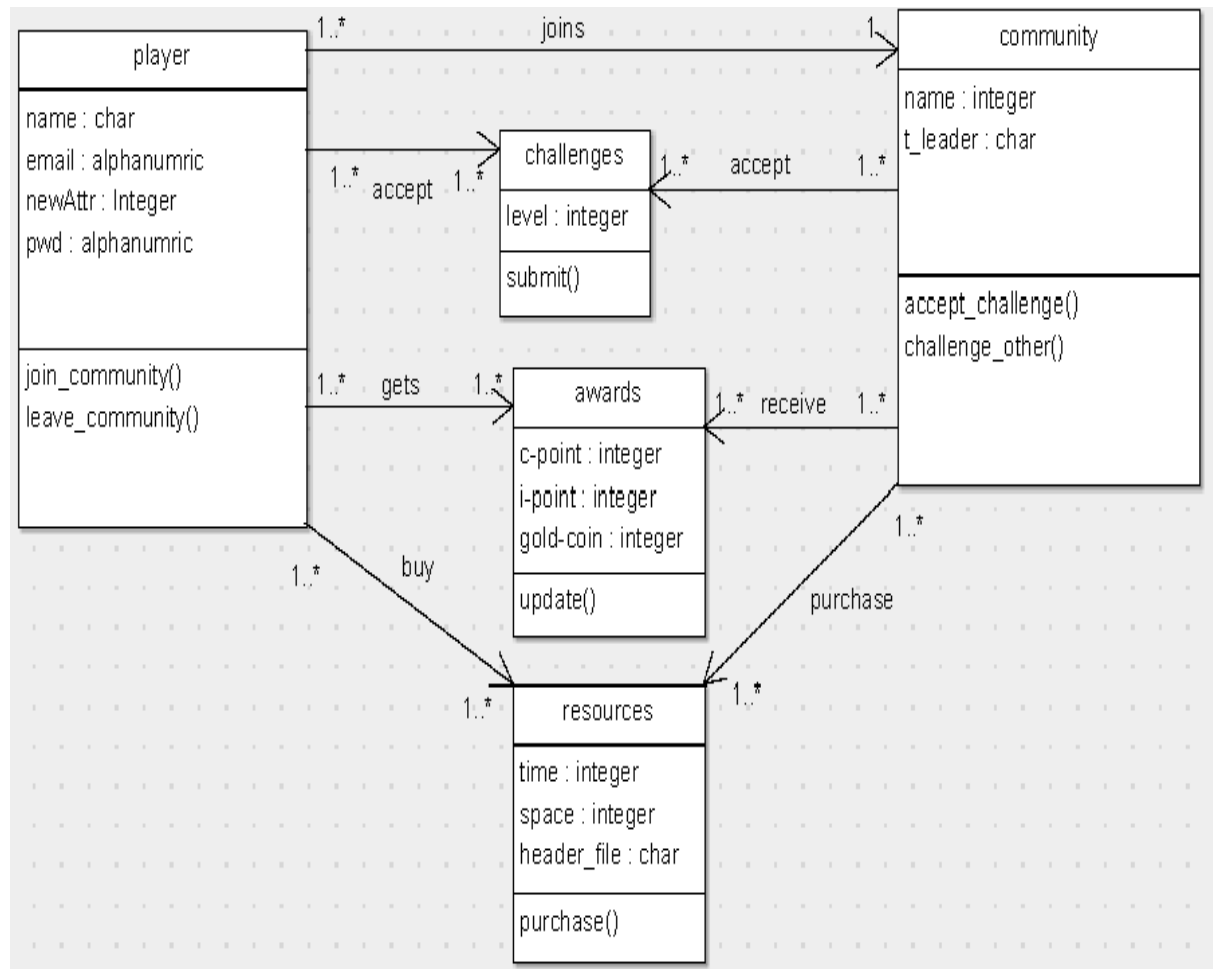
- In solo mode player will move level by level. A level in the game will be unlocked only if its previous level has been cleared.
- After a player enter in a level, he will be given a challenge.
- For the challenge player will have to submit/upload the code of the program.
- After the submission, the uploaded file will be evaluated by our congrine(compiler-engine), which will evaluate the file/code for all possible test cases of a given challenge.
- If the uploaded program will produce correct output for all the possible test case, player will be awarded 10x gold coins (where x is no. of level).
- These gold coins can be used to purchase the available resources at that point of game for a player.
- A player will be awarded five “*I-Points*” after every five levels.
- A player will also be awarded two “*I-Points*” for every resource he has purchased and used in the solution of a challenge.

### ❖ Community Mode:-

- After entering into community mode, player first will have to either create a new community or join an existing community.
- After that the community leader will have to perform an action from given set of actions like “challenge other community”, “accept other community challenge”, “pending challenge”.
- At a time a community can have challenges with one or more communities.
- After that community will be submitting their solution of the challenge, which will be evaluated by the congrine, and the community who will be using lesser time and space complexity will be the winner.
- The winning community members will be awarded 10x gold coins (where x is no. of level).
- These gold coins will belong to a player, so will be able to use these gold coins in both modes of the game.
- But the resources purchased in community mode will be of community and can never be used by a player in the solo mode and vice-versa.
- Also the winning community will be awarded five “*C-Points*” and each player of the winning community will be awarded one “*I-Point*”.
- The “*I-Points*” of a player will be the total sum of his “*I-Points*” in solo mode and his “*I-Points*” in community mode.
- Based upon the “*I-Points*” a player will be ranked, and his leaderboard will be created.
- The “*C-Points*” will be used for ranking of communities.
- If player can choose to leave his community or team leader can expel the member from the team after voting of all the members.
- In this case when a player by any how leaves a community, he will be having only his gold coins, his “*I-Points*” and resources he had purchased in solo mode.
- If by any how the whole community resolves, then players will be having only their gold coins, their “*I-Points*” and resources they had purchased in solo mode.

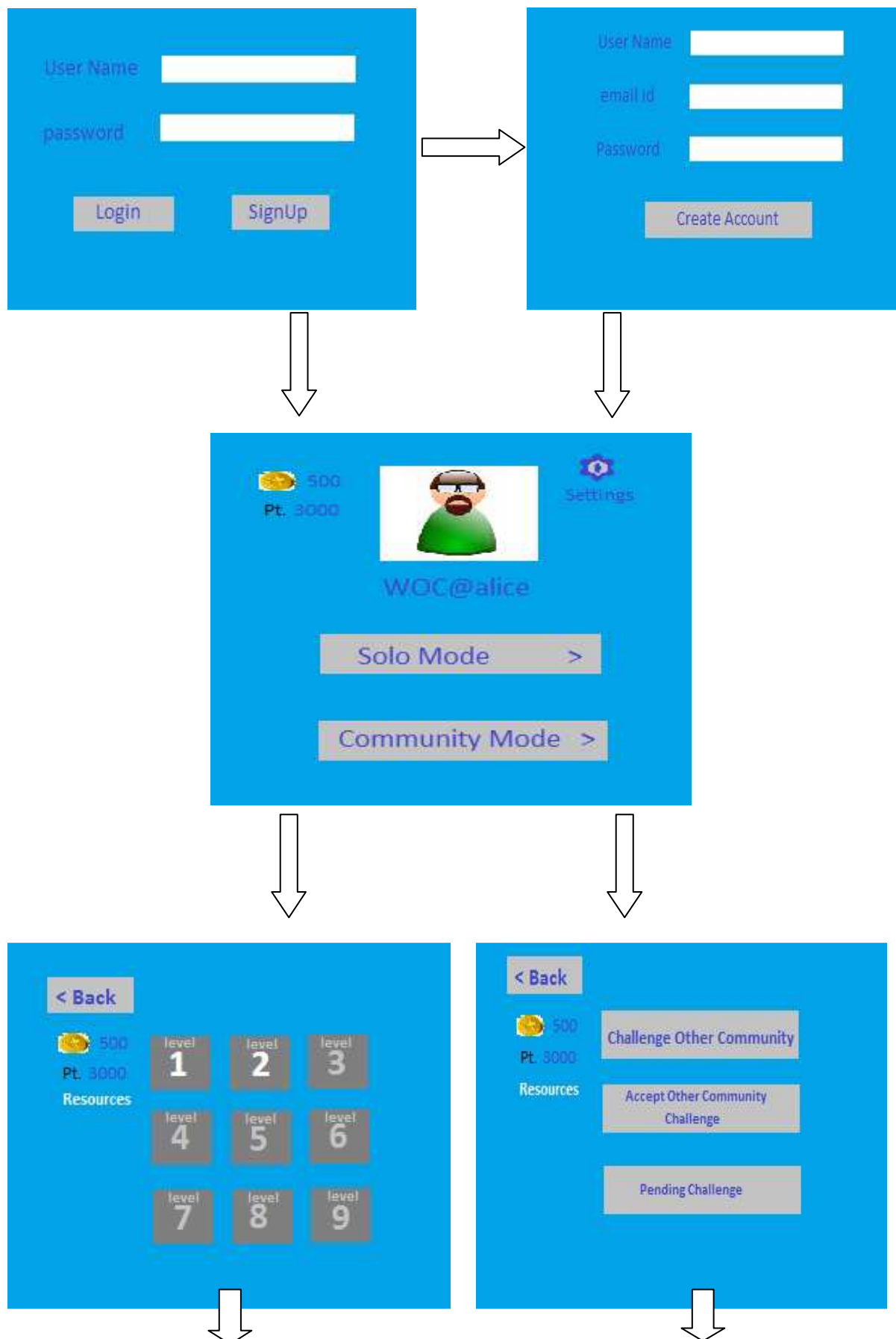
- A player can only be a member of single community at a time during the game

## 2.2 Class Diagram

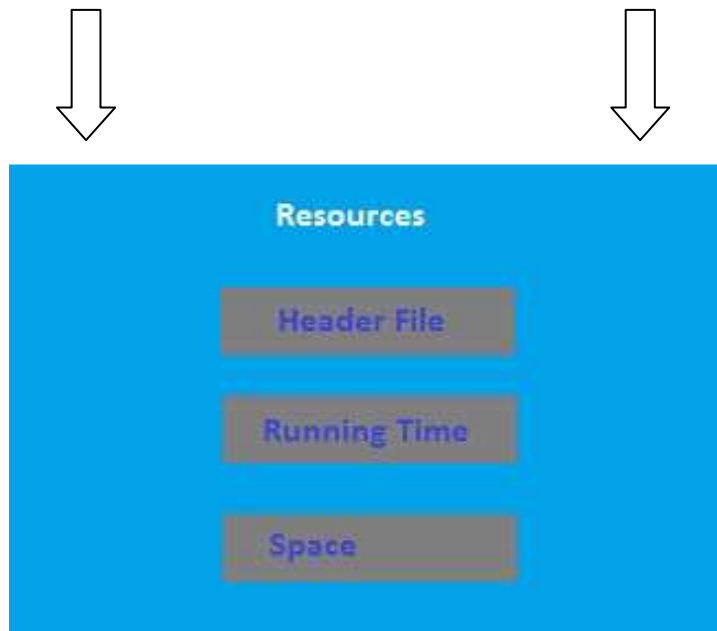


class diagram for "War Of Codes"

## 2.3 Screen Flow







### 3. Technology Involved

- GCC Compiler:-  
We will be using gcc compiler for code(C language) compilation.
- DOM JUDGE:-  
DOM JUDGE an open source tool will be used for the code testing, ranking of players as well as communities and generation of leadership.
- *Server Side programming* will be done in "JSP and Servlet"
- *My SQL* will be used for database creation
- *Client Side GUI*(Graphical User Interface) will be designed in *HTML5, CSS* and *Java Script*

## Appendix – A

### ➤ DOM JUDGE:-

DOM JUDGE is an open source code testing and rank generator tool used by the most prestigious coding contest like ACM ICPC and etc.