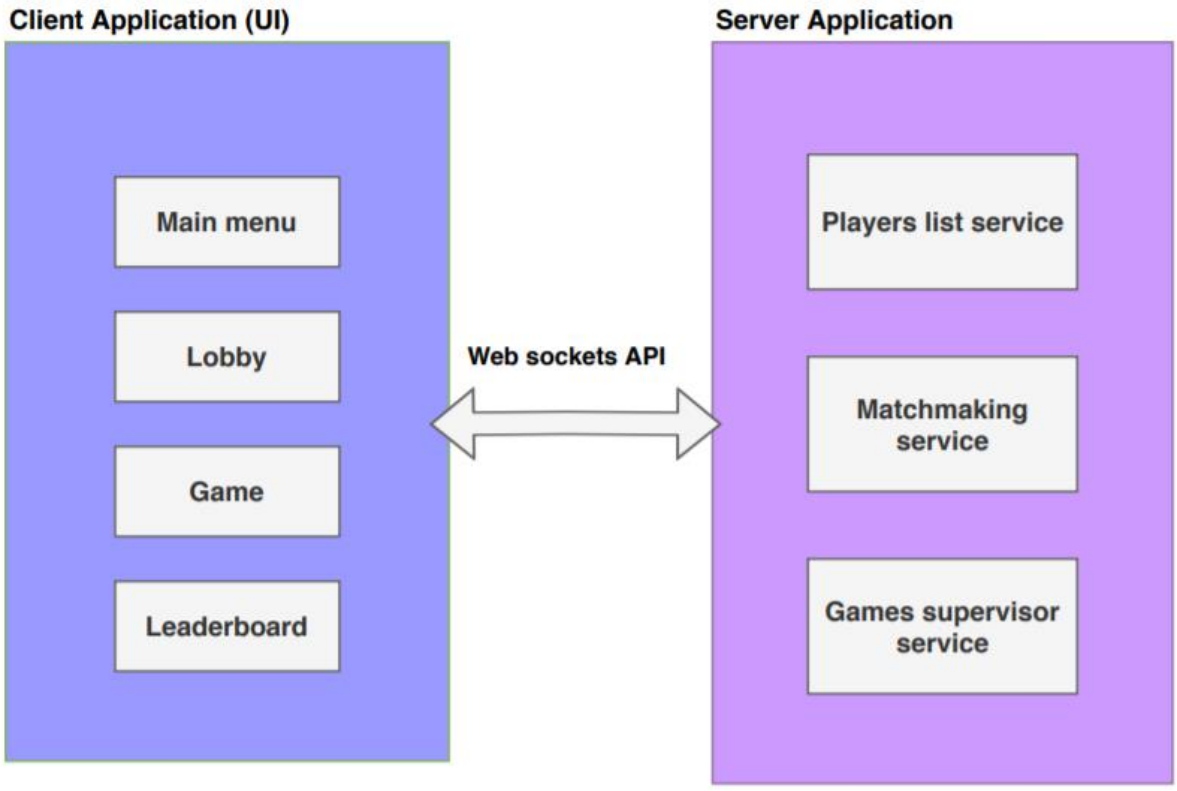
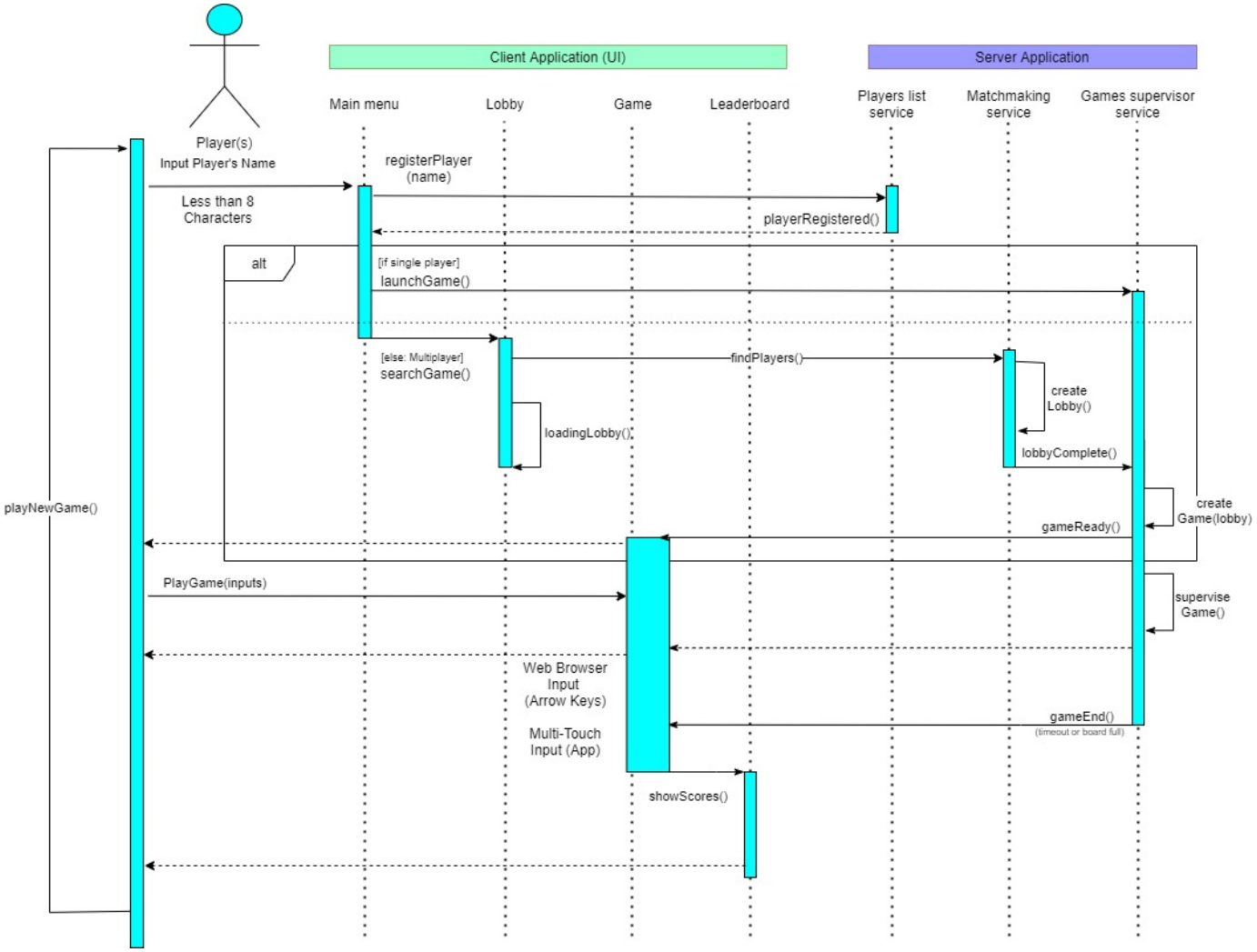
Design Architecture of the Game

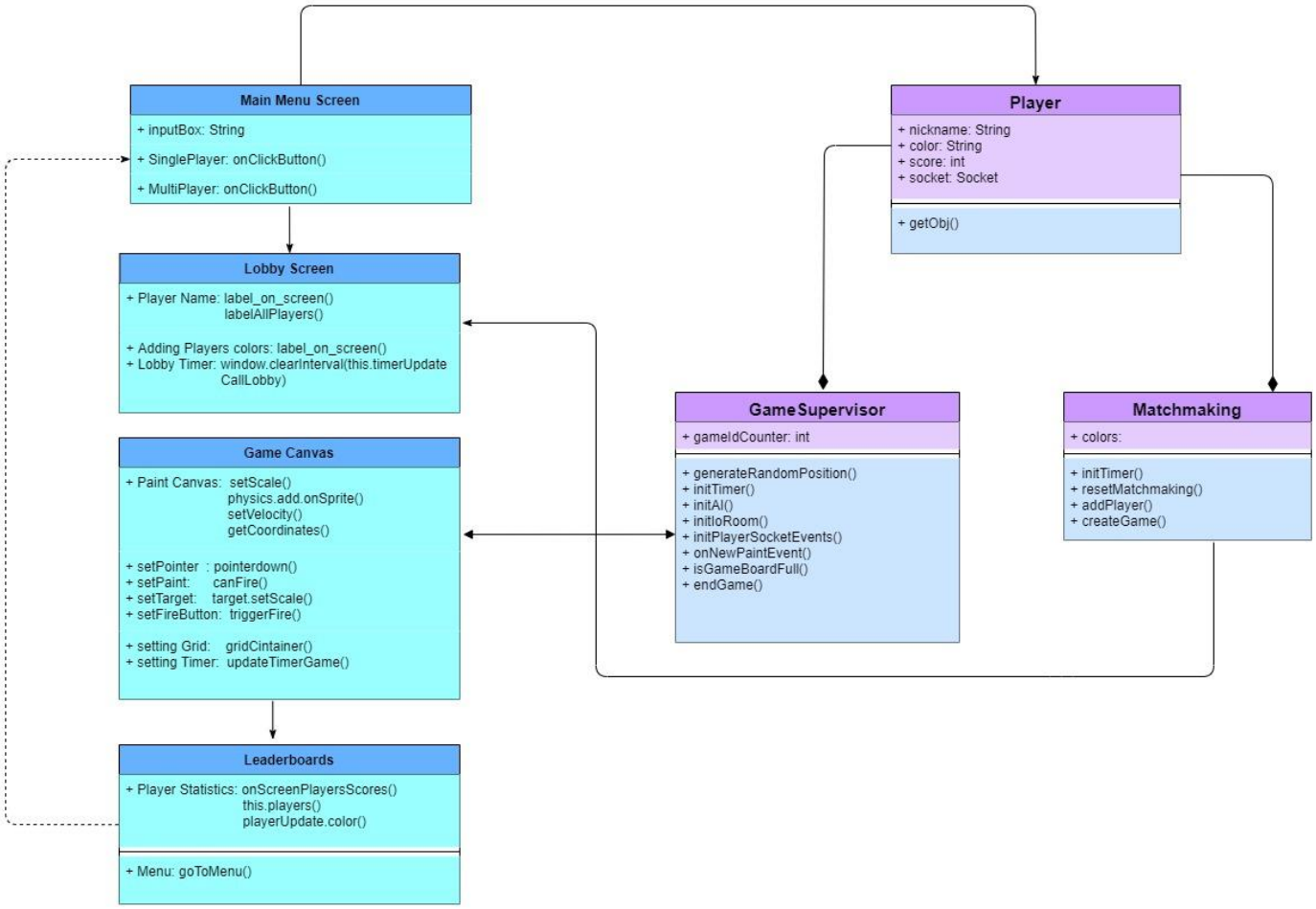
FUNCTIONAL ARCHITECTURE



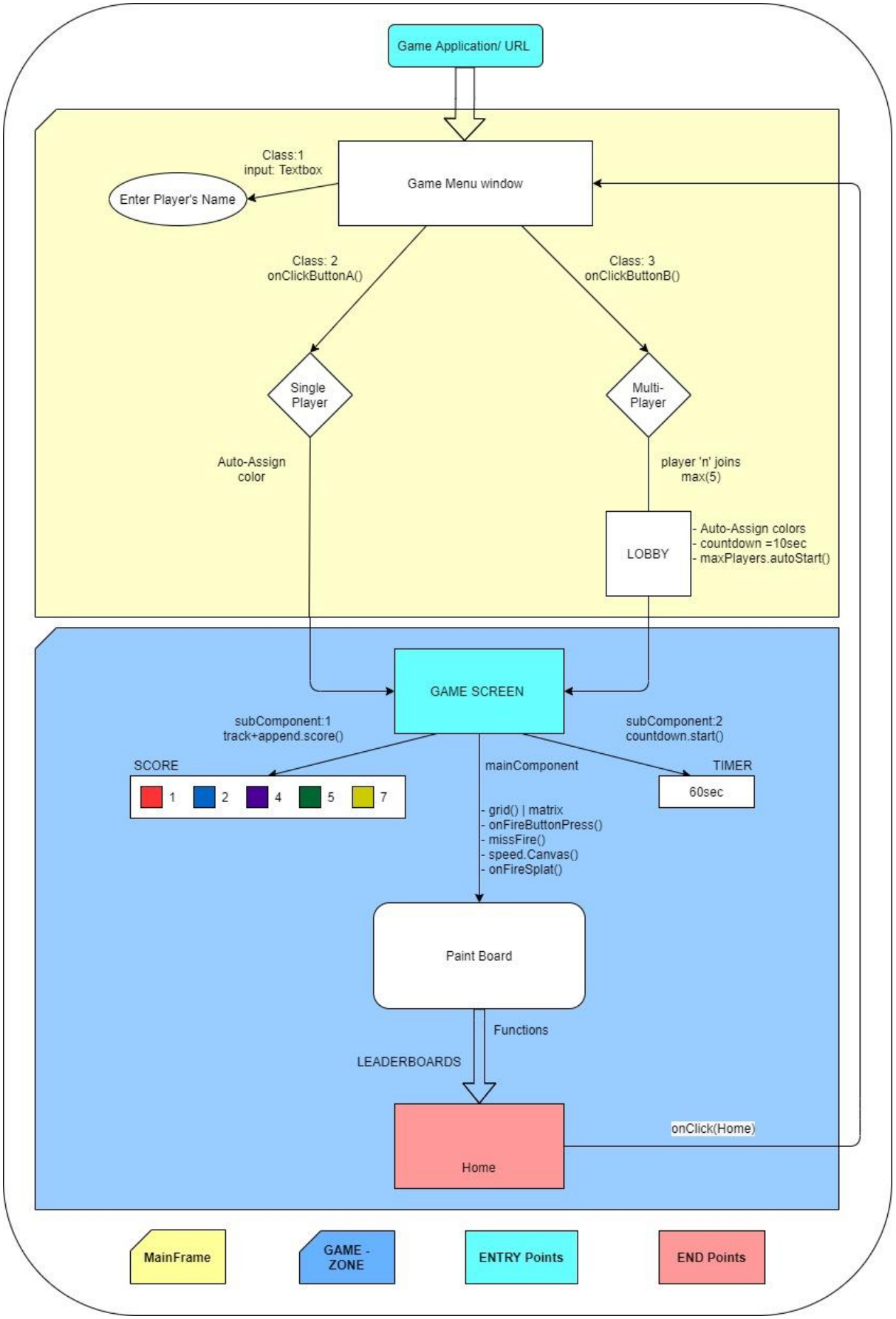
Sequence Diagram



UML Diagram


Main Menu Screen
+ inputBox: String
+ SinglePlayer: onClickButton()
+ MultiPlayer: onClickButton()
Player
+ nickname: String
+ color: String
+ score: int
+ socket: Socket
+ getObj()
Lobby Screen
+ Player Name: label_on_screen()
labelAllPlayers()
+ Adding Players colors: label_on_screen()
+ Lobby Timer: window.clearInterval(this.timerUpdate
CallLobby)
GameSupervisor
+ gameIdCounter: int
+ generateRandomPosition()
+ initTimer()
+ initAI()
+ initIoRoom()
+ initPlayerSocketEvents()
+ onNewPaintEvent()
+ isGameBoardFull()
+ endGame()
Matchmaking
+ colors:
+ initTimer()
+ resetMatchmaking()
+ addPlayer()
+ createGame()
Game Canvas
+ Paint Canvas: setScale()
physics.add.onSprite()
setVelocity()
getCoordinates()
+ setPointer : pointerdown()
+ setPaint: canFire()
+ setTarget: target.setScale()
+ setFireButton: triggerFire()
+ setting Grid: gridCintainer()
+ setting Timer: updateTimerGame()
Leaderboards
+ Player Statistics: onScreenPlayersScores()
this.players()
playerUpdate.color()
+ Menu: goToMenu()

WORKFLOW DIAGRAM

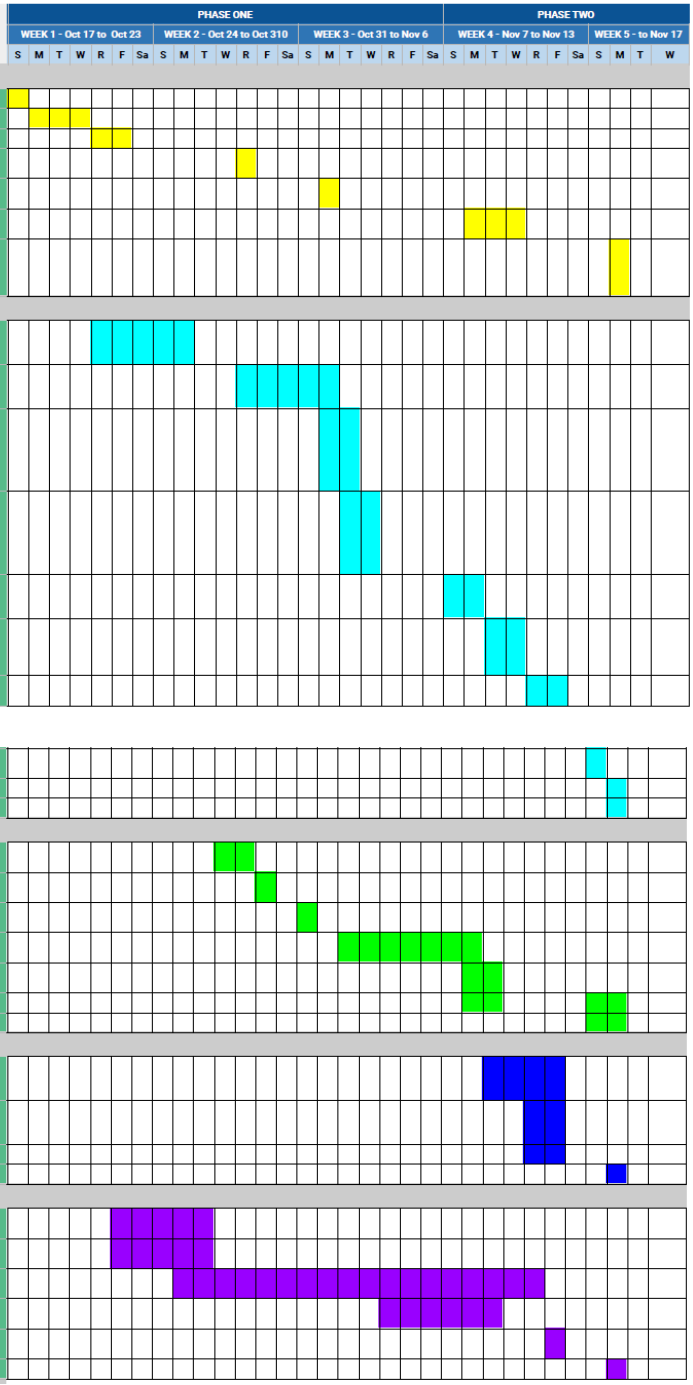


Project Development Tracking

PROJECT WORK SCHEDULE - Group 1

PROJECT TITLE	Advanced Software Engineering Project	Institute Name	Trinity College Dublin
Number of Teammates	6	Course	Advanced Software Engineering
Names of Teammates	Aishwarya, Boris, Joshua, Matteo, Siddhesh, Takshil		

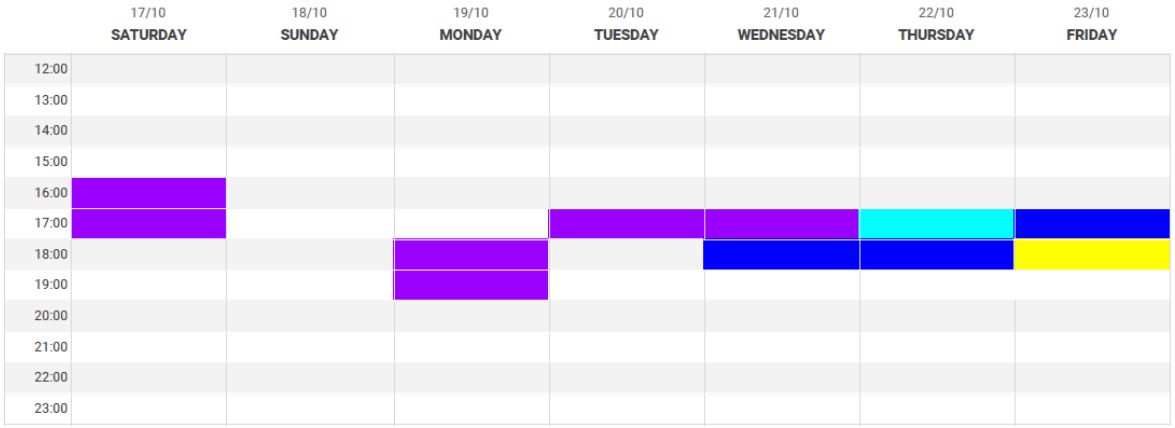
WBS NUMBER	TASK TITLE	TASK OWNER	START DATE	END DATE	DURATION IN HOURS	TASK COMPLETION
1	**Team Works**					
1.1	Planning Basic Steps	Team	17/10/20	17/10/20	1	100%
1.2	Tools and Technology being used	Team	18/10/20	20/10/20	2	100%
1.3	Collective User Interface	Team	21/10/20	22/10/20	2	100%
1.4	Initiation of back-end and front-end program development	Team	29/10/20	29/10/20	1	100%
1.5	Meet for discussion on sync-up of frontend and backend	Team	02/11/20	02/11/20	1	100%
1.6	Putting together frontend and backend codes.	Team	09/11/20	11/11/20	3	100%
1.7	Finalization of Game of Web Browser + Mobile Application + Documentation of code + Visual Representation Diagrams	Team	16/11/20	16/11/20	5	100%
2	**Front End**					
2.1	User Interface Mockups + Creating the required Assets (Images) for the game screen.	Matteo, Joshua, Siddhesh	22/10/20	26/10/20	4	100%
2.2	Building up Main game Canvas and setting speed to the moving Canvas.	Matteo, Joshua, Siddhesh	29/11/20	02/11/20	2	100%
2.3	Building Home Screen: Menu (Single and Mulltiplayer) Home Button on Leaderboards Screen. Lobby Screen: Allignment of Player's profile and Timer	Matteo, Joshua, Siddhesh	02/11/20	03/11/20	2	100%
2.4	Home Screen (Created input Player's Name) Adding color element to each player in lobby screen as well as in Game Canvas Adding Score in Game Canvas	Joshua, Siddhesh, Matteo	03/11/20	04/11/20	2	100%
2.5	To capture co-ordinates of paint splash by player on Game canvas Added Timer and visual paint splash	Matteo, Joshua, Siddhesh	08/11/20	09/11/20	1	100%
2.6	Connecting Front end and Back end. Retrieving and Updating on all the screens Bugs identification and fixing	Matteo, Boris	10/11/20	11/11/20	2	100%
2.7	Gaming pointer and hit with keyboards arrow inputs	Matteo, Boris	12/11/20	13/11/2020	1	100%
2.8	Final Bug Fixes (Color coding of web and mobile)	Matteo, Boris	15/11/20	15/11/20	1	100%
2.9	FrontEnd code documentation	Joshua	16/11/20	16/11/20	1	100%
2.1.1	Re-Scaling Grid	Matteo, Boris	16/11/20	16/11/20	1	100%
3	**Back End**					
3.1	Setting Up Node JS server and pushing the instructions for the team.	Aishwarya, Takshil	28/10/20	29/10/20	2	100%
3.2	Initiation of building player and matchmaking classes.	Aishwarya, Boris, Takshil	31/10/20	31/10/20	1	100%
3.3	Game Supervisor + Socket IO setup for game.	Aishwarya, Boris, Takshil	02/11/20	02/11/20	1	100%
3.4	Core Game logic building.	Aishwarya, Boris, Takshil	04/11/20	10/11/20	4	100%
3.5	Resolving Merging issues of backend and frontend	Boris, Matteo	10/11/20	11/11/20	2	100%
3.6	BackEnd code Documentation	Aishwarya	16/11/20	16/11/20	1	100%
3.7	Worked on implementing AI	Boris	16/11/20	16/11/20	1	100%
4	**Working & Playing**					
4.1	Deploying game on a web browser and checking feasibility (on localhost).	Matteo, Joshua, Siddhesh	11/11/20	14/11/2020	2	100%
4.2	Creating servers and Deploying code in Amazon EC2 and linking each for front end and Back end	Takshil, Matteo	13/11/20	14/11/2020	1	100%
4.3	Converting into Mobile Application	Takshil, Matteo	13/11/20	14/11/2020	3	100%
4.4	Fixing Bugs on Mobile UI	Takshil, Matteo	16/11/20	16/11/20	2	100%
5	**Documentation**					
5.1	Functional Architecture	Aishwarya & Boris	22/10/20	26/10/20	3	100%
5.2	Technical Architecture	Matteo & Joshua	22/10/20	26/10/20	3	100%
5.3	Gantt Chart	Takshil & Siddhesh	25/10/20	11/11/20	2	100%
5.4	API documentation	Aishwarya, Boris, Takshil	04/11/20	09/11/20	2	100%
5.5	Research on webview for application.	Aishwarya, Takshil	12/11/20	12/11/20	1	100%
5.6	Visual Representation	Siddhesh	16/10/20	16/11/20	2	100%



Group Scheduler (Week 1 to Week 5)

DAILY SCHEDULE - Group 1

Week of: 17 October



NOTES

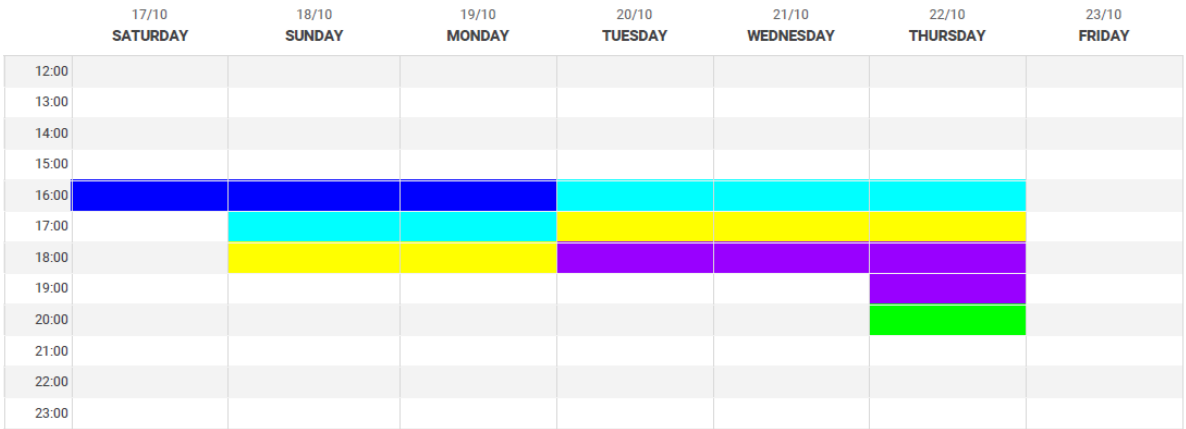
- Team Meetings
- Programming Pair (A)
- Programming Pair (B)
- Documentation
- Testing

TO DO

- Initial Planning and Pre-requisites
- Deciding Technologies and platform using for development of the game.
- Deciding working of gameplay and features.
- Building UI mockups and discussion on setting up server
- Documenting initial UML Diagram
- Created GitLab group for pushing and pulling resources

DAILY SCHEDULE - Group 1

Week of: 17 October



NOTES

- Team Meetings
- Programming Pair (A)
- Programming Pair (B)
- Documentation
- Testing

TO DO

- Creating a game workflow diagram and Functional architecture.
- Building UI mock-ups into Game Screen
- Game UI Development - Phase 1
- Game Server - Phase 1

DAILY SCHEDULE - Group 1

Week of: 31 October

	31/10 SATURDAY	1/11 SUNDAY	2/11 MONDAY	3/11 TUESDAY	4/11 WEDNESDAY	5/11 THURSDAY	6/11 FRIDAY
12:00							
13:00							
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20:00							
21:00							
22:00							
23:00							

NOTES

- Team Meetings
- Programming Pair (A)
- Programming Pair (B)
- Documentation
- Testing

TO DO

- Game Development Front End - Phase 2
- Server and Game Logic Development - Phase 2
- Testing sessions
- Creating local python server

DAILY SCHEDULE - Group 1

Week of: 7 November

	7/11 SATURDAY	8/11 SUNDAY	9/11 MONDAY	10/11 TUESDAY	11/11 WEDNESDAY	12/11 THURSDAY	13/11 FRIDAY
12:00							
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22:00							
23:00							

NOTES

- Team Meetings
- Programming Pair (A)
- Programming Pair (B)
- Documentation
- Testing

TO DO

- Linking Front End and Back End
- Created Input Features
- Testing and fixing bugs
- Web Deployment of game.

DAILY SCHEDULE - Group 1

Week of: 14 November

	14/11 SATURDAY	15/11 SUNDAY	16/11 MONDAY	17/11 TUESDAY	18/11 WEDNESDAY	19/11 THURSDAY	20/11 FRIDAY
12:00							
13:00							
14:00							
15:00							
16:00							
17:00							
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20:00							
21:00							
22:00							
23:00							

NOTES

- Team Meetings
- Programming Pair (A)
- Programming Pair (B)
- Documentation
- Testing

TO DO

- Creating a Mobile Application
- Making AWS servers for Front and Back end
- Final Testing
- Documentation
- Description writing
- Implementation of AI