

UNIVERSITÀ DEGLI STUDI DI FIRENZE

HUMAN COMPUTER INTERACTION MAIN PROJECT

RPG Combat Manager



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Introduction

Introduction

- *Dungeons and Dragons* is a superb role game, based on **d20 system** battles.
- Every player can role a character in a fantasy canonical world. Character has many **statistics**, written in a specific character sheet.
- The **combat phase** is characterized by a turn system, during which each player rolls a dice and sum the result with the action-corresponding actual statistic...



... but there a **gigantic** number of stats!

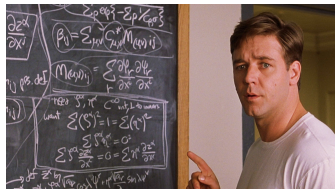
Motivations

- Moreover, a character stats are generally heavily modified *during the battle*, thanks to **buffs** given by the other players of the party.
- This means that every player has to remember *lot of informations* and, hence, has to perform *some heavy computation*.

Numbers, numbers and more numbers...

Many calculations imply:

- longer battle **rounds**
- calculation **errors**
- **frustration** by novice players (with a chance of leaving the party)



- Some players also use a wide spread **support tools**, such as paper sheets, excel sheets or notes above character sheet.
- It would be nice to find a better way to simplify this process...

Main Idea

Idea: a specific **mobile app** to keep track of all stats changes during the battle.

Thou shalt

- keep track of **all important stats**.
- give a **minimal view** divided into three logical part, *attack*, *defense* and *saving throws*.
- allow addition and selection of **buffs** from a buff-list.
- provide an **automatic stats updating**.

Thou shalt not

- **replace** character sheet: it is just a support tool.
- aggravate the battle system complexity.
- The app will not be a **silver bullet**, it will try to enhance a player's efficiency.

Needfinding

Needfinding

The needfinding process has been operated in two parallel ways:

- By conducting oral interviews with 11 potential users;
- By asking potential users of D&D-related groups on Facebook to fill up a Google Form survey.

In both cases we used the same set of **7** questions, asking about aspects of the game that could help us understand the users' needs.

This way we got about **85** sets of answers, which were more than enough to develop our **Personas**.

Needfinding

We asked our potential users to answer the following questions:

- How long have you been playing D&D / Pathfinder?
- Do you think of yourself as a pro player or more like a casual gamer?
- In your opinion, are buffs useful, when fighting?
- Have you ever failed a dice roll because of a buff you didn't remind to apply? If so, please tell us what happened.
- Do you use any other method than the character sheet in order to keep track of your active buffs (like a post-it, tokens, etc)?
- Did you ever felt a sense of frustration coming from the huge amount of arithmetic needed to get the damage value?
- What kind of buffs do you usually cast (e.g. offensive buffs, defensive buffs...)?

- From the answers we got we could understand that an utility app for managing the combat phase would have been very useful.
- Also, we could identify two **Personas** and a bunch of use cases for our potential app.
- Moreover, by reading the answers we could say that almost every interviewed user gave us a useful opinion.
Almost.

Needfinding for D&D/Pathfinder Buff Manager

Nel questionario ti verranno poste alcune domande riguardo la tua esperienza con i giochi di ruolo Dungeons and Dragons e/o Pathfinder. Ti chiediamo di fornirci una breve risposta a ciascuna di esse. Il sondaggio è anonimo, pertanto sentiti libero di rispondere come preferisci.

Da quanto tempo giochi a D&D/Pathfinder?

D&D dal 1988

Relativamente ai due giochi di ruolo sopra citati, pensi di identificarti meglio come pro player o come casual gamer? Perché?

la domanda non ha senso

Qual è il tuo rapporto con i buff, durante il combattimento?

cosa?

Ti è mai capitato di fallire una prova perché ti sei dimenticato di applicare un buff? Se sì, raccontaci brevemente l'episodio.

cosa?

Usi un metodo alternativo alla scheda giocatore per segnare i buff (come un foglio di carta, segnali o simili)? Ti ritieni soddisfatto del tuo metodo?

cosa?

Ti sei mai sentito frustrato per i troppi calcoli da fare durante il tuo turno di combattimento?

tiri un dado, esce una risultato, interpreti il ruolo. Questo è un gioco di ruolo non una schermaglia tra calcolatrici.

Che tipo di buff usi di solito (per esempio buff di attacco, di difesa, di supporto per superare prove...)?

cosa cacchio intendi per buff?

Personas

As we said before, thanks to the needfinding process we could identify two **Personas** for our app:

- **Arturo** (26-28 years old) is the expert player playing from edition of the game, him who lives his campaign in a religious way: the weekly Game Session is his Holy Mass, his Master is seen as a Pope who carefully guides his children by following the Bible (or the Game Manuals);
- **Bernardo** (22-24 years old) is really fond of everything that goes around the RPG world, but since he's a student and also a part-time worker, he lacks of time to fulfill his passion. He started playing RPG games recently and finds really hard to understand and remember all the rules. To overcome this lack, he uses every kind of methods such as paper sheets, post-its on the character sheet, memos on his smartphone, a huge number of documents stored on online storage services...)

Scenarios

Also, from the users' answers we could carve a quite good number of scenarios for our app, of which we present here a couple examples:

- **Arturo** has a high level, support-oriented character. When the fight starts, he starts casting buffs for the whole party, debuffing enemies, controlling the weather, applying effects and auras and so on. His party, after the 20th buff has been casted, start to play slower. In this situation, having some sort of utility that could keep track of all the bonuses would be very useful;
- **Bernardo**, on his 7th turn, exclaims: "Oh God, I've forgotent to add the bard's buffs to the damage for the whole fight!" After a good collective laugh, he thinks that he could really make use of a tool that could help him to remember all the buffs and their actual effect.

Mock-up

The needfinding step led us to the following mock-up of the app:



App

Technologies

- The app *must* be available on **mobile** phones, because it must be easily accessible during D&D battles.
- It does not require a specific operative system calls (like camera phone calls), so it can be **cross-platform**.
- We like to make it according to **Material Design** rules.

Ionic Framework

- Ionic allows **cross-platform app development** in javascript.
- It is possible to use some plugins like *Ionic Storage* or *Cordova* for converting to **Android/iOS**.
- Ionic provides official **Angular** integration.



Angular Material

- Angular has specific syntax to connect *html* to *typescript* files.
- It includes **Material Design** components.



Interface and main features: *add character*

Crea Nuovo Personaggio

1 Informazioni ... 2 Caratteri... 3 BAB, TS ...

Nome Personaggio *
Arturo

Razza
Elfo

Classe
Ranger

Livello Taglia *

Avanti

Crea Nuovo Personaggio

1 Informazioni ... 2 Caratteri... 3 BAB, TS ...

Punti Ferita Bonus Temptra Base

Classe Armatura Bonus Riflessi Base

Iniziativa Bonus Volontà Base

Bonus Attacco Base Danni Arma

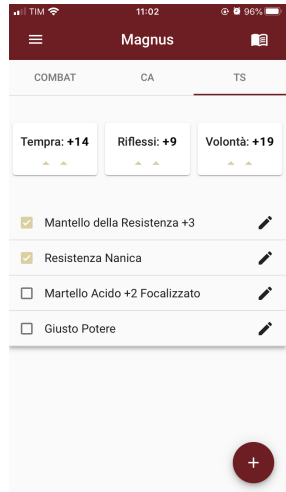
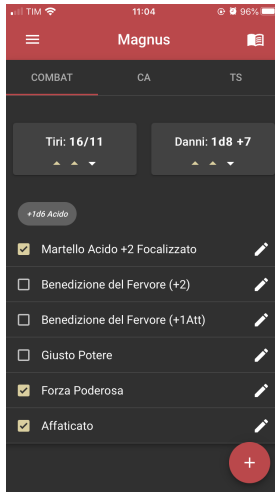
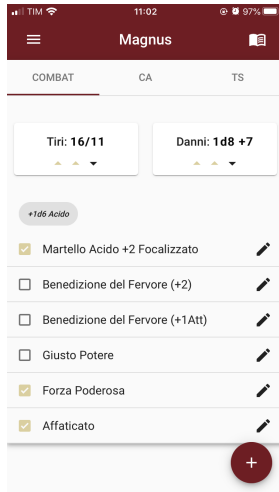
☒ mischia ☐ distanza

☐ a una mano ☒ a due mani

Indietro Salva

- On first boot, the App makes us create a **new character** .
- The user can insert **his character's** base stats.
- A stepper organizes all the necessary inputs in a logic arrangement.

Interface and main features: *main screen*



Interface and main features: *add buff*

- Clicking on the main fab button, we can access to the **add buff** page.
- Here the user can create a single buff with all the necessary infos.
- Once the user saves a buff, it is appended to the **buffs list**.
- A buff is automatically sorted into the three different tab lists, based on the aspect of the fight it affects (Damage, AC or ST).
- The app can recognize if a buff is a **bonus** or a **malus**.

TIM 11:02 96%

Nuovo Buff

Armatura Magica

Descrizione

Bonus Tiro Bonus Danni

Bonus Classe Armatura

4

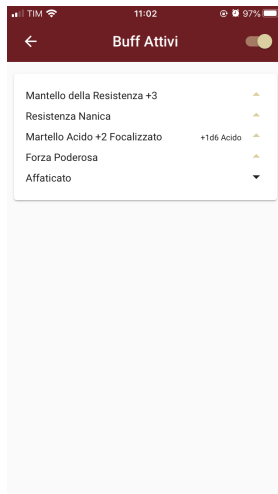
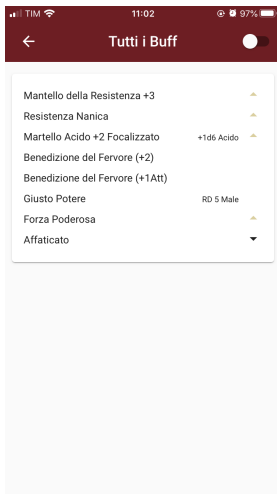
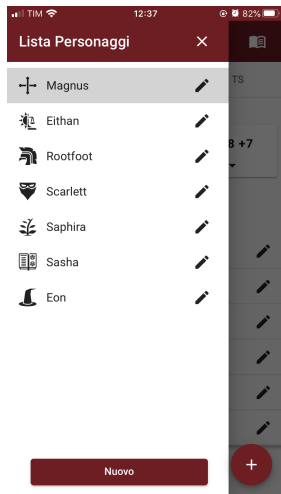
Bonus Tempra Bonus Riflessi Bonus Volontà

Altri

Bonus Caratteristiche

Salva

Interface and main features: *menu and all buffs page*



Usability Test

Setup

After a bunch of "technical tests", aimed to find and therefore fix any bug of the app, we decided it was time to get an opinion from the potential users. So, we called back the people we interviewed during the needfinding step and asked them to perform a small usability test.

Our usability test has been divided into two phases:

- **Quest:** since we are talking RPGs and since we are active players too, we thought it could have been fun to set a little "quest" that our testers had to complete. Such quest has been "scripted" in order to include all the features we developed in our app and also to be run in about 10-15 minutes;
- **Survey:** after completing the quest, our testers have been asked to complete a quick survey regarding their feel of the app.

Quest

We built the quest so that it included all the main features of our app. We requested our testers to perform **7 tasks**:

1. We created three preset characters and asked each party member to pick one of them and **add the to the app**. The party has also a support Bard controlled by the developers;
2. Each character has a weapon that **has to be added as gear**. Also, each weapon has a powerful rune on itself;
3. The party sets the camp on a snowy mountain, and during the night a Cobold sneaks in it and steals all the runes from their weapons, **making them weaker**. In the morning, the party tracks down the thief and engages a battle. The support Bard goes first and **casts "Heroism" on the party**;
4. Since they fight on the snow, **every Save Throw involving the characters' reflex has a penalty of -2**;
5. The fight goes on until the monster is defeated. Each player can get its rune back, **enhancing its weapon power once again**;
6. Moreover, the fight **has leveled up the whole party**;
7. At the end of the test, the testers have been asked to **erase their test character** from the app;

Survey

- Our survey consisted of 13 questions plus two (optional) open questions about the test that have been just experienced and the feel with the app.
- To quantify our results, we have used a **SEQ scale** since it's been proved to have a good correlation with the users' answers. That is, each question (or, better, a sentence) has a **score range from 1 to 7**, where a score of 1 means that the tester **strongly disagree** with the sentence, while 7 means that the tester **strongly agrees** with it. Also, for each question we computed the **mean** and the **standard deviation** of the answers batch, so that we could have an accurate statistic of the testers' thoughts.
- We also included two optional open questions aimed to understand if the scope of the app has been respected. In particular, we asked them:
 - Are you satisfied with the experience you just had with the app?
 - Would you recommend the app to your friends who also play an RPG game?

Results

#	Sentence	μ	σ
1	The app is visually pretty.	5.25	0.66
2	The character creation process has been boring.	1.12	0.33
3	Contents are in a logically consistend position within the page.	5.87	0.33
4	Animations are smooth.	6.5	1.0
5	Icons reflect what I expect by pressing them.	6.37	0.99
6	The navigation between the pages is clear.	6.75	0.43
7	The buff creation process is boring and/or lacks of some aspects.	2.75	1.39
8	Selecting a buff is immediate and easy.	6.62	0.48
9	Bufs are computed correctly.	6.0	1.73
10	I find the buff recap page useless.	1.37	0.49
11	Bufs management is exhaustive.	5.75	0.43
12	Bufs are correctly divided into bonuses and maluses.	6.0	1.11
13	It's hard to understand which buffs are active at any moment.	1.37	0.69
14	The character editing process it's fast and immediate.	6.37	1.11

Moreover, from the open questions we found out that:

- The app was satisfying and generally immediate to use;
- Our testers would recommend the app to their friends, especially the newcomers to the RPG world and the players who have to deal with a lot of buffs.

Conclusion

Reflections

- We have made a mobile **application** to help players during DnD sessions.
- **Needfinding** indicated us problems and what players need.
- After Development, we did a **usability test** with a DnD small quest.

Survey results told us:

- the App is useful and testers would use it;
- buffs structure is intuitive (especially selection), but **creation is quite boring**;
- due to huge rules number, App can **not cover all cases**;
- it is easy to see which buffs are actives and all-buffs page has been appreciated;
- also character adding was not that boring;
- character editing can be improved.

Future works

We are aware that the app as it is is **not complete**, but, thanks to the testers' suggestions, we have some other ideas to improve it:

- **Types management**: every buff has a type, but not all types alter the result in the same way.
- **Switch melee/distance** on the main page.
- **Automatic group buffs**: it requires multi devices interaction.
- **Buff pre-existent database** to make *add buff* more immediate.
- **Automatic class skills**.
- **Interactive main cards**, like *tiri* or *classe armatura*.