JoinMEet

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INDICE

1. Online dating

1.1 Online dating in numbers:

The couple dating market is worth, in the United States alone, over two and a half million dollars and a substantial percentage of these transfers, at least 70%, would now be attributable to online dating: dating apps and community allows people to look for love on the Net, replacing the more traditional marriage and single agencies, although there is still enough space for love coaches and professionals specialized in relationship and love issues.
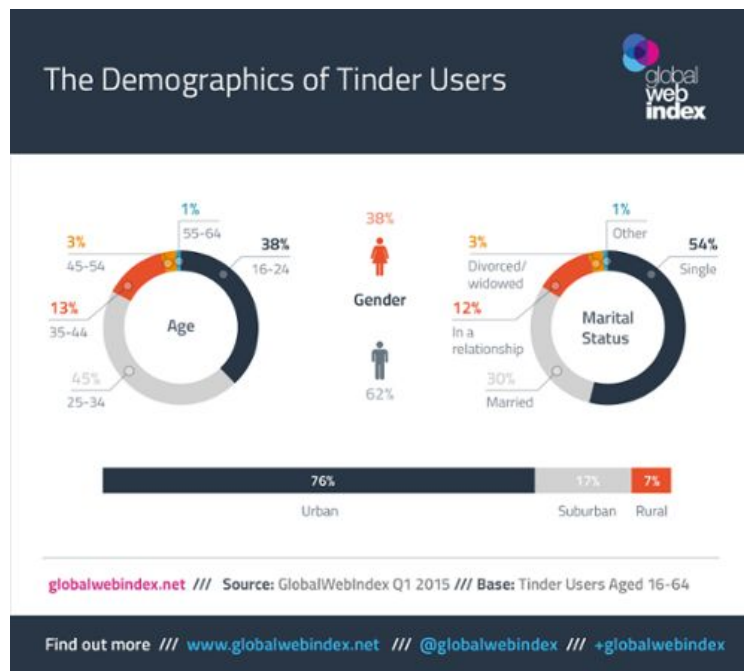
Let's frame the phenomenon with some numbers: every week over a million and a half of dating couples are born from a swipe on dating apps and every day there would be approximately twenty-six million matches. Speaking of swipes: there would be over a million and a half every day on one app, as some data on the use of Tinder reveal. According to a Pew Research Center study on how online dating is changing relationships, at least one in ten Americans in 2013 was enrolled in a dating app. This phenomenon is also widespread in Latin America and South East Asia, with very similar popularity percentages: 46% Latin America and 45% South East Asia. In Latin America, for example, the countries where the phenomenon is most popular are Argentina and Colombia both with 50%, followed by Mexico with 49%. In South East Asia, the countries with a high percentage of popularity of the phenomenon are China with 52% (among other things the highest percentage detected by the study) followed by Thailand with 48%.

It is clear that the countries where the phenomenon is most popular is because of the fact that these countries are essentially mobile-first.But the popularity of the phenomenon must deal with the cultural differences of the various countries. There are places where the family has a more important role and this explains a low percentage of the phenomenon, as can be seen well in Asia where China boasts a very high percentage and, instead, Japan and South Korea report very very low percentages, respectively 18 % and 22%.

In 2015, Tinder, one of the most popular and longtime industry-leading apps, had 50 million subscribers and 10 million active users on a daily basis. Recent statistics tell us that the popular Meetic application has a community of 7 million registered and active dater.

Badoo (with more than 300 million active users) is among the most downloaded dating apps. Tinder boasts a pool of 50 million active users, of which 9 million Italian daters use the popular app to search for a soul mate in their province of residence or in other regions.

However, It is easy to imagine that in the meantime numbers and percentages have grown. In 2017 Global Web Index traced the portrait of the average user of online dating services:

The Demographics of Tinder Users

globalwebindex

Age
- 1% — 55-64
- 38% — 16-24
- 3% — 45-54
- 13% — 35-44
- 45% — 25-34

Gender
- 38% (women)
- 62% (men)

Marital Status
- 1% — Other
- 54% — Single
- 3% — Divorced/widowed
- 12% — In a relationship
- 30% — Married

- 76% Urban
- 17% Suburban
- 7% Rural

globalwebindex.net /// **Source:** GlobalWebIndex Q1 2015 /// **Base:** Tinder Users Aged 16-64

Find out more /// www.globalwebindex.net /// @globalwebindex /// +globalwebindex

Most of the members are men between 25 and 34 years old, single and living in the city. The same study, conducted in 2018, shows that male daters globally are 65%. 75% of users who use online dating services are less than 30 years old, therefore a very young audience, 90% of daters are under the age of 40. 38% of LGB + users use online dating services. Other interesting statistics are obtained by trying to make a list of the most popular professions of Tinder:

Tinder's most right-swiped jobs (New York City)

WOMEN	MEN
1. Teacher	1. Engineer
2. Stylist	2. CEO/Entrepreneur
3. PR/Communications	3. Registered nurse
4. Dental hygienist	4. Personal trainer
5. CEO/Entrepreneur	5. Financial analyst
6. Physical therapist	6. Chef
7. Architect	7. Advertising account executive
8. Financial analyst	8. Architect
9. Journalist	9. Student
10. Student	10. Musician

Source: Tinder

Mashable

In New York, for example, the men who attract the opposite sex more are engineers, entrepreneurs and professional nurses; while among women, teachers, stylists and

communication professionals or professionals are the favourites. This shows that on Tinder, it isn't just about photos. Despite a heavy focus on visuals, users do indeed read the words listed below the photos and work is an important component in choosing the next partner.

An interesting fact that still provides the Global Web Index has to do with the "stickiness" of online dating apps: in part, by surprise, those who seek love and look for it on the Net do not rely on a single app, For example, 7 out of 10 Tinder users said they also visited other sites and used other apps.

In the end, the great variety of online dating services (according to estimates there would be more than 1,500 different ones) suggests a reflection: those who search the Internet for the love of a life or the pleasant meeting of one evening seem to be less and less subject to social stigma.

Pew Research still offers interesting insights about it: in 2005, 29% of Americans agreed with the claim that people who used the sites for online dating were "desperate"; in another and most recent survey (referring to 2013) the percentage had already fallen by 8 percentage points. Not only that, almost 60% of users believe that dating apps are good places to meet people and they add a 53% who even believe that those who rely on online dating are more likely to meet the right people instead of those who are still looking for love in the most traditional ways.

Last, very relevant data, is what he says that 37% of daters say that technology complicates life, but 62% of them agree that the Internet makes them feel closer to people.

Since its inception, the idea of 'dating' has changed quite a bit. Dating used to consist of first dates that ended with marriage proposals, or families making marriage deals between their children. In the past three decades, dating has become more of a process that can last for years before marriage is even considered.

As generations change, so does the idea of dating and how one finds a companion. When the first modern newspaper was invented, people bought personal ads to discreetly connect and communicate with one another in hopes of finding love or sex. But, when the Internet was conceived, it connected us all, thus personal ads went digital and the Internet dating service was born. So dating apps are really the latest manifestation of human beings doing what we've always done: create new tools to communicate and then turn around and use those tools to find love, sex and companionship.

Since the earliest days of mass media and technology, people have been finding ways to broadcast their desires and find connections that might have otherwise eluded them.

1695: The First Personal Ads

Since the modern newspaper was invented in 1690, personal ads began as a way to help British bachelors find eligible wives. The first known personal ads appear in a British agriculture journal in 1695 and was published by a 30-year-old man announcing he was in search of 'some good young gentlewoman that has a fortune of £3,000 or thereabouts
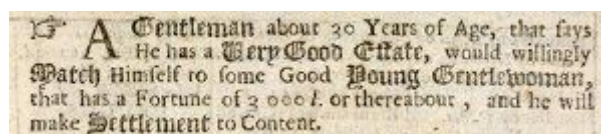
1700s: Personal Ads for Homosexual Safety

Personal ads were one of the only ways for the gay and lesbian communities to meet discreetly and safely at this time. Homosexuality was outlawed and punishable by death in the UK by wife-murderer Henry VIII and continued to be illegal until 1967. During this time, gathering sites for gay men known as Molly Houses were subject to regular raids by law enforcement. Coded words, female names and other signals in personals were channels to privately expressing vulnerability and find companionship that society forbade.

1727: Women Get Smacked Down for Expressing Personal Desire

In 1727, Englishwoman Helen Morrison became the first woman to place an ad in a Lonely Hearts column. She convinced the editor of the Manchester Weekly Journal

to place a small ad stating she was "seeking someone nice to spend her life with." A man responded to Helen, but it was not the man she was hoping for. It was the mayor, who had her committed to an insane asylum for four weeks.

1800-1900:

Aristocrats in the 1800s used personal ads to broadcast their interest in romantic engagements that seem scandalous by today's standards. An 1841 ad in the Journal of Munich tells of a 70-year-old Baron seeking a woman "between 16 and 20 having good teeth and little feet."

Newspaper for singles like *The Matrimonial News* began publication in post-Gold Rush San Francisco. Men pay $0.25 to place an ad (about $4.50 in today's dollars). Women post free.

In the mid-19th century, the need to advertise for a husband or wife was still considered a "failure" and associated with deviant behavior for many judgmental straight, white, middle-to-upper class people. But as magazines and periodicals such as The Wedding Bell in the US and The Correspondent, Matrimonial Herald and Marriage Gazette in the UK hit the newsstands with immense popularity, matchmaking and personals took off as well, creating the first wave of true mainstream normalization for the personal ad. In late 1800s the popularity of personals paved the way for grifters who soon realized that they could prey on the vulnerability of people seeking love. Scam artists caused a scandal that many newspapers ran with, and personals disappeared practically overnight as public attitudes became more cautious. Phishing, fake profiles, and ads for escorts continue this tradition today.

Early 1900s: The Lonely Rural Farmers, Ranchers and Shepherds

Around the turn of the last century, personal ads enjoyed a renaissance of popularity, especially in the Western US with low populations and the harsh realities of rural life without a partner.

1920s: Lonely WWI Soldiers Seek Pen Pals

Personal ads went mainstream again in the early 20th century, when social pressures to get married by 21 (and thus, expectations for relationships) were much lower, thankfully than their earlier incarnations. Many of the postings were simply calls for friends or pen pals. These kinds of ads were especially fashionable among lonely soldiers during World War I that connected with women with personal ads. At the same time, authorities suspect that coded messages in The Link, the UK's first "lonely hearts" monthly, are promoting (then-illegal) homosexual activity. A trial finds the publisher guilty of gross indecency and the paper shuts down in 1921.

1960s: Counterculture and Computer Love

In 1965, a team of Harvard undergrads created Operation Match, the world's first computer dating service which used a questionnaire and an IBM 1401 to match students based on their similarities. For $3, users could answer questionnaires and receive a list of potential matches, a process that is still used by many dating sites. Since then the explosion of the Internet in the mid-to-late 1990s created a new context for personals. Even before the Web itself, bulletin boards and newsgroups hosted a variety of ways people could use technology to meet others with similar interests, including dating. It had become clear that the Internet was going to change every aspect of our lives forever, including love and romance.

The internet stole the job of matchmakers. A matchmaker is someone who personally interviews singles and pairs them off for dates based on his or her own judgment as to who would make a good match. After each date, the singles give the matchmaker feedback on compatibility and appropriateness of the match. The matchmaker uses this information to further refine his or her selections. This differs from online dating sites mostly because the sites use a computer program to suggest potential matches, and that computer program doesn't adjust its thinking based on your feedback. Ultimately, it is up to the user to choose whom to contact or go out on a date with. With a matchmaker, you're leaving the decision in the hands of another person.

Another important difference is cost. Matchmaking services can cost thousands of dollars, while typical dating-site fees average between $ 20 and $ 30 per month. However by 2010, different dating sites existed for virtually every city, sexual orientation, religion, race and almost every hobby, making it easier to find exactly what we're looking for and harder to stumble on someone who exists outside our pre-defined bubbles of identity. Obviously this wants to be a summary of the history of dating that does not take into account aspects such as the influence of social media on our lives or how our culture has evolved in these years.

Over the years there has been a sort of "normalization" of online dating, which has become a way like any other to meet new people, online dating seems to have served something.

For more than 50 years, researchers have studied the nature of the networks that link people to each other. These social networks turn out to have a peculiar property. One obvious type of network links each node with its nearest neighbors, in a pattern like a chess board or chicken wire. Another obvious kind of network links nodes at random. But real social networks are not like either of these: people are strongly connected to a relatively small group of neighbors and loosely connected to much more distant people.

These loose connections turn out to be extremely important because loose ties have traditionally played a key role in meeting partners. While most people were unlikely to date one of their best friends, they were highly likely to date people who were linked with their group of friends; a friend of a friend, for example. Indeed, this has long been reflected in surveys of the way people meet their partners: through mutual friends, in bars, at work, in educational institutions, at church, through their families, and so on but online dating has changed that.

People who meet online tend to be complete strangers and when people meet in this way, it sets up social links that were previously nonexistent.

Two scientists from the University of Vienna and the University of Essex have tried to demonstrate how online dating is changing society, in the direction of greater racial integration specifically.

The basic hypothesis is that marriage has always exploited the bridging capital: love relationships are conducted, in other words, in the restricted circle of acquaintances, friends of friends and this can only translate into a sort of "isolation" social of the different ethnic groups. Since the Internet has become the second most common "place" where possible partners meet, people have known each other and build relationships with perfect strangers, since very rarely do you have contacts in common with the potential partner. In the eyes of scientists, this means inserting "random links" between different and previously distant social groups. It should not be surprising, therefore, that the number of interracial marriages has increased with the popularity of online dating services: in 2014, two years after the launch of Tinder, in particular there was a peak of unions between people of different backgrounds and, although it is impossible to infer a direct correlation between the two phenomena, in all likelihood online dating has also made couple relationships more heterogeneous.

In a university study entitled "The strenght of absent ties: social integration via online dating" the authors (the professors of economics Josuè Ortega from the University of Essex and Philipp Hergovich from the University of Vienna), analyzing over twenty years of data products from the online dating industry, they realized that a third of

today's relationships are born online. And the figure rises to 70% when the field is narrowed to homosexual couples. Even these scholars have noticed that dating apps have contributed to increase the unions between people of different ethnic backgrounds and social backgrounds, also having a positive effect on the duration of the unions. Their study seems to show that marriages between people who met online tend to dissolve less frequently and be more solid.

Our knowledge base in prolog aims to support an application or a website offering online dating services. We represent knowledge as a set of rules and facts that when put in relation allow the Prolog interpreter, thanks to his inference mechanism, to answer the questions we ask through terminal. The people registered to the system will display, after logging in, a list of possible sexual or romantic partners, each with a score indicating the probability of successful pairing. The score is calculated taking into account the distance between the cities where people live, the age difference between people and the passions in common. As far as the "territorial" distance is concerned, our knowledge base has information about the distance in kilometres between cities. The greater the distance between the two, the smaller will be the score for the place assigned to the couple. A close distance is one of the requirements to obtain the highest score. another factor we take into account is the age difference between people. Some may prefer a younger partner, some may prefer an older partner we realize. However, we believe that people in a similar age group may have more in common, which is why the smaller the age difference and the higher the age score assigned to the couple. Last but not least, each person adds a list of 3 passions to the record that identifies them. Sharing hobbies is definitely a great meeting point, which is why the more passions you have in common, the higher the score for the passions assigned to the couple. The sum of the partial scores of place, age and passions in common gives rise to the final score that represents the compatibility of the couple, their probability of success, which is shown in the output to the searcher.

A **fact** is a predicate expression that makes a declarative statement about the problem domain that the Prolog interpreter considers as true.

The first facts we create serve to declare people who register for the service and want to find a romantic or sexual partner. For each person we indicate their name, their various passions, their age and the city in which they live.

```
person(chiara,[cooking,food,theatre],21,casoria).
person(simone,[cooking,food,dancing],20,ponticelli).
person(maria,[theatre,music,books],23,casavatore).
person(antonella,[cooking,music,books],56,roma).
person(luca,[food,theatre,gardening],40,casoria).
```

In order to use the dating service, whether it is implemented by an app or a website, interested persons must create an account by indicating a username and password. The following facts link the person, defined by the previous facts, to the account used during login to access the service

```
account(chiara,ladivina,111).
account(simone,monxis_v,12345).
account(maria,the_strangest,2222).
account(antonella,fragola86,333).
account(luca,predator,gianniluca).
```

In our knowledge base we also need to include facts to connect cities and know each other expressed in kilometres, distance being one of the factors considered for matching.

```
link(casoria,casoria,0).
link(casavatore,casavatore,0).
link(ponticelli,ponticelli,0).
link(casoria,ponticelli,9).
link(casavatore,casoria,19).
link(casavatore,ponticelli,11).
link(roma,casoria,219).
link(roma,casavatore,220).
```

A rule can be viewed as an extension of a fact with added conditions that also have to be satisfied for it to be true. It consists of two parts. The first part is similar to a fact (a predicate with arguments). The second part consists of other clauses (facts or rules which are separated by commas) which must all be true for the rule itself to be true. These two parts are separated by "*:-*".

Since we memorize cities and their distance as facts, the interpreter will look for a match with what is defined in the facts. If not properly instructed, he will not be able to control the inverse connection between cities as well. For example: suppose we want to discover the compatibility between two people Chiara and Simone who live in Naples and Milan respectively. Let's imagine now to look first from Chiara's perspective, i.e. as if she had logged in. If among our facts we have defined the distance between Naples and Milan with the relative kilometers the matching will have a certain score given by the distance between the two cities. If instead we imagine to do the search from Simone's point of view, the system will not be able to match because it has not been instructed about the distance between Milan and Naples. Our interpreter is not able to understand by himself that the distance between the two cities is the same, which is why our first rule is the following

```
linking(X,Y,C):-link(X,Y,C),not(X=Y).
linking(X,Y,C):-link(Y,X,C).
```

The expressive power is closely related to the computational complexity and that's why to remain expressive without getting too much complexity for the Prolog it was decided to stop at the logic of the first order and not to keep the OR operator but to use the Horn clauses. Thanks to this formalism two or more rules that have the same head are considered as in OR so when the inferential engine tries to read a rule and do the unification, if it fails it tries the unification on the second rule and so on. The operator "*not*" allows the unification not to fail even if the city is the same.

The following are rules for arithmetic operations, in particular addiction and subtraction, used for the subtraction between people's ages and addiction to find the score of the match.

```
find_res(Res,A,B):-Res is A-B.
find_res2(Res,A,B):-Res is A+B.
```

This rule is about age comparison. The comparison is made by subtracting the two ages and realizing the absolute value to obtain a number that represents the age difference and that will be evaluated for the purposes of score

```
compare_age(Result,Personsage1,Personsage2):-
find_res(Difference,Personsage1,Personsage2),
abs(Difference,Result).
```

Below we have two logical rules that check if a C number is included between two A and B numbers, and if an A number is greater than a B number

```
including(A,B,C):-C>=A,C=<B.
major(A,B):-A>B.
```

Each of these three rules handle one age difference case. In order to assign the points we decided to divide the age difference into three bands: an "ok" band where the age difference is between 0 and 4 years and the maximum score for this feature is 30, a "half ok" band where the age difference starts to grow but that we take into account for personal preferences where the age difference is between 5 and 10 years and the assigned score is 15 and finally a "not ok" band where the age difference is over 12 years and there could be ethical problems. age_ok uses the compare_age rule to obtain the difference between the two ages in absolute value and checks that this difference is between 0 and 4 using the including rule; if this is true it assigns to the score variable that is updated for each characteristic a score relative to the place equal to 30. The same goes for the other two.

```
age_ok(Personsage1,Personsage2,X):-
compare_age(Result,Personsage1,Personsage2),
including(0,4,Result),X=30.

age_half_ok(Personsage1,Personsage2,X):-
compare_age(Result,Personsage1,Personsage2),
including(5,10,Result),X=15.

age_not_ok(Personsage1,Personsage2,X):-
compare_age(Result,Personsage1,Personsage2),
major(Result,11),X=5.
```

Also for the distance between cities three bands are created, each of them managed by a rule: a "ok" band where the difference in kilometres between cities is between 0 and 20 and I have the maximum score which is 25, a "half ok" band where the difference is between 21 and 40 with a score of 15 and finally a "not ok" band where the difference in kilometres is greater than 41 with a score of 10. Love does not suffer distance, yet the data show that it is difficult to keep the distance relationship alive for this reason we do not recommend such a relationship by lowering the score. km_ok uses the linking rule to obtain the distance in kilometers between the cities of residence of the two people and check if this value is between 0 and 20; if this is true sum to the score previously obtained from the comparison with the place the partial score obtained.

```prolog
km_ok(City1,City2,X,Y):-
linking(City1,City2,Distanza),
including(0,20,Distanza),
Y=X+25.

km_half_ok(City1,City2,X,Y):-
linking(City1,City2,Distanza),
including(21,40,Distanza),
Y=X+15.

km_not_ok(City1,City2,X,Y):-
linking(City1,City2,Distanza),
major(Distanza,41),
Y=X+10.
```

These rules, put in OR through the Horn clauses, add to the score obtained so far by comparing place and age, points based on how many passions the two people have in common through the find_res2 rule. If the two possible lovers have all three passions in common, to their score is added the maximum score which is 45 and so on with a score that gets lower and lower as the number of shared interests decreases.

```prolog
score(3,Y,Score):-find_res2(Score,Y,45).
score(2,Y,Score):-find_res2(Score,Y,30).
score(1,Y,Score):-find_res2(Score,Y,15).
score(0,Y,Score):-find_res2(Score,Y,0).
```

The following rules calculate the length of a list using recursion and will be used to calculate the number of passions in common between the two people.

```
len([],0).
len([_Head|Tail],N):- len(Tail,NUM1),plus(NUM1,1,N).
```

Next one is the rule that shows on screen a message with the final score of the match.

```
explain(X,Y,Score):-
write('Between '),
write(X),
write(' and '),
write(Y),
write(' the match is '),
write(Score),
write("%"), nl.
```

Below we have the rule that reads the password entered by the user and checks that such password is correct.

```
password(X):-
    read(X),
    account(_Y,_Z,X).
```

This rule simply checks whether the username entered by the user is associated with an account in the knowledge base.

```
account_exists(Person,Username,Password):-
account(Person,Username,Password).
```

Our penultimate rule deals with managing the login and in particular asks the user to enter his username. Once entered, the system through the account_exists rule checks if the username is present in the knowledge base and if not, it displays an error message followed by the execution fail. If the username entered is associated with an account, the user is asked to enter the password and verify its validity with the password rule. If the password is valid a welcome message is shown and the matchmaking rule starts through which people display the names of the candidates and the compatibility percentage, otherwise an error message is shown and the execution fails

```prolog
login:-
    writeln('Enter your username'),
    read(Username),
    (   account_exists(Person,Username,Password) ->
            writeln('Enter your password'),
            (   password(Password) ->
                        write('Welcome '), write(Username),nl,
                    matchmaking(Person,X,Score),
                    explain(Person,X,Score)
            ;   writeln("We're sorry, the password you entered is
incorrect, try again"),
                fail
            )
    ;   writeln("We're sorry, your account is not in the system"),
        fail
    ).
```

Last but not least, it is the rule for matchmaking that finds the compatibility score between people. This rule is started by the login rule already with the name of the person who logged in (as first parameter) and returns the candidate's name and score through the parameters Person2 and Score to the explain rule which displays on screen what we got. After the login phase the system searches the facts of the knowledge base for the person who logged in and combines them with all the other people registered to the system, avoiding the comparison with the person through the not. Once it has identified a candidate, the system calculates the age difference and the kilometers of distance through the appropriate rules, thus obtaining a first score to which must be added the passions in common. To find these, the system makes the intersection through the intersection command between the lists of passions of the two people and creates a new list whose length is calculated with the len rule. Finally, based on the length of the list, the last points are assigned to the

partial score obtained before it is complete and displayed in the output. It must be said that to achieve a complete matchmaking one rule is not enough because you have to take into account an average good distance, or an unsuitable age using the rules defined above and that's why the rule is put in OR with other matchmaking rules to cover all possible combinations. For example the first rule handles the case of matchmaking with maximum score where the distance in km and the age difference are the smallest possible and the two people have all the passions in common

```prolog
matchmaking(Person1,Person2,Score):-
    person(Person1,[P1,P2,P3],Eta1,City1),
    person(Person2,[P4,P5,P6],Eta2,City2),
    not(Person1=Person2),
    age_ok(Eta1,Eta2,X),
    km_ok(City1,City2,X,Y),
    intersection([P1,P2,P3],[P4,P5,P6],Intersezione),
    len(Intersezione,N),
    score(N,Y,Score).

matchmaking(Person1,Person2,Score):-
    person(Person1,[P1,P2,P3],Eta1,City1),
    person(Person2,[P4,P5,P6],Eta2,City2),
    not(Person1=Person2),
    age_half_ok(Eta1,Eta2,X),
    km_ok(City1,City2,X,Y),
    intersection([P1,P2,P3],[P4,P5,P6],Intersezione),
    len(Intersezione,N),
    score(N,Y,Score).

matchmaking(Person1,Person2,Score):-
    person(Person1,[P1,P2,P3],Eta1,City1),
    person(Person2,[P4,P5,P6],Eta2,City2),
    not(Person1=Person2),
    age_not_ok(Eta1,Eta2,X),
    km_ok(City1,City2,X,Y),
    intersection([P1,P2,P3],[P4,P5,P6],Intersezione),
    len(Intersezione,N),
    score(N,Y,Score).

matchmaking(Person1,Person2,Score):-
    person(Person1,[P1,P2,P3],Eta1,City1),
    person(Person2,[P4,P5,P6],Eta2,City2),
    not(Person1=Person2),
    age_ok(Eta1,Eta2,X),
```

```prolog
    km_half_ok(City1,City2,X,Y),
    intersection([P1,P2,P3],[P4,P5,P6],Intersezione),
    len(Intersezione,N),
    score(N,Y,Score).

matchmaking(Person1,Person2,Score):-
    person(Person1,[P1,P2,P3],Eta1,City1),
    person(Person2,[P4,P5,P6],Eta2,City2),
    not(Person1=Person2),
    age_ok(Eta1,Eta2,X),
    km_not_ok(City1,City2,X,Y),
    intersection([P1,P2,P3],[P4,P5,P6],Intersezione),
    len(Intersezione,N),
    score(N,Y,Score).

matchmaking(Person1,Person2,Score):-
    person(Person1,[P1,P2,P3],Eta1,City1),
    person(Person2,[P4,P5,P6],Eta2,City2),
    not(Person1=Person2),
    age_half_ok(Eta1,Eta2,X),
    km_half_ok(City1,City2,X,Y),
    intersection([P1,P2,P3],[P4,P5,P6],Intersezione),
    len(Intersezione,N),
    score(N,Y,Score).

matchmaking(Person1,Person2,Score):-
    person(Person1,[P1,P2,P3],Eta1,City1),
    person(Person2,[P4,P5,P6],Eta2,City2),
    not(Person1=Person2),
    age_not_ok(Eta1,Eta2,X),
    km_not_ok(City1,City2,X,Y),
    intersection([P1,P2,P3],[P4,P5,P6],Intersezione),
    len(Intersezione,N),
    score(N,Y,Score).
```

Our system automatically starts matchmaking by interrogating it with the "start" rule which starts the welcome menu and returns you to login. This is to give an idea of the complete execution and how we imagine the system works, however, you can also directly make simple queries such as checking if an account exists with account_exists or check the age difference between two people indicated in input etc.

```
?-matchmaking(chiara,X,Y)
```

With this query we can get all the names of possible candidates returned to us for the person we specify as the first parameter and the compatibility score. Actually this is the query made by the start rule that automatically inserts as first parameter the name of the person who has logged in

---

```
?-matchmaking(X,Y,Z)
```

With this query we can get all the possible pairs returned by combining all the people in the system and displaying their score

---

Finally, with this last rule we can all get the names of the people who pair us back the score indicated in the input. With this writing, for example, we get all the people who would have a compatibility score of 100%.

```
?-matchmaking(X,Y,100)
```

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