Technical specification
Dating site: find-match.online

Contents

General requirements

- Ability to make small adjustments to text and drop downs, easily add new articles – for advanced user.
- Ability to add another language and show correct language based on the region a client is coming from.
- Ability for users to change language any time (from any page). Save as a preference per user automatically in the DB.
- Correct content caching headers to make it play nice with CDN.
- Ability to use autoscale with AWS.

General concept

- **Sections** of the site: Besides the main section for dating (Matching) where all search, profiles and messages happen there will be:
    - **About** section with additional information on Socionics and how it works
    - **Articles** section where future blog articles will be posted
      So we will need a simple (for advanced user) way to add articles, add or rename sections. No need for creating a GUI backend but a list of steps with file names where this can be changed will be useful.
- **Searches**
    - Once a user is registered there is always a default search that is created from match options he chooses in the profile.
    - A member will be able to create additional searches. Do we need to have a limitation?
    - If a user chooses the option to be notified about new results in the search he will be notified via email about new profiles found on the search since last notification
    - We will need to have nightly and weekly scheduled tasks on the servers for the purpose to run searches (**Cron** service).
- **Likes**
    - A member can **Like** another member (a button besides the profile).
    - If a user with paid membership was liked by somebody else this user should receive an email.
    - Free members don't get notified when they were liked by. However if they liked somebody who liked them (or vice versa), both users should receive an email because they will be able to send messages to each other (in spite of the fact that they have free membership).
- **Messages**
    - Shown in a chat format (similar to Skype)
    - A member can send a message to somebody in one of two cases:
        - He has paid membership
        - He has free membership, he liked another member and this other member liked him i.e. if two people liked each other they will be able to send messages to each other.
    - If a user clicks on **Send message** option any previous messages must be shown. This way a member will see right away if he had any previous communication with the person.

- **Profile views**
    - When a member **viewed**, liked or sent a message to another member, this member's profile is considered to be viewed (for particular user).
    - A user will be able to filter profiles or arrange them in search results based on this.
    - Profiles should become unviewed based on either a period of time or a fact that the profile was changed by its owner. Let's discuss what is easier to do and how to store this information in the database.
- **Matching** abilities
    - **Matching based on preferences** – similar to any other dating site: age, location, hair color etc.
    - **Matching based on personality type** – sociotypes and relations.
        - Greyed out by default
        - Enabled after a user takes the test
        - Can be turned off (on **Profile** page)

Infrastructure

Nginx, MongoDB, Redis.

AWS: EC2, ELB, Route53.

CloudFlare.

Stage 1 – Landing: Registration and test

Registration

Landing page with registration form:

Coming soon in 2016

Find your best Match

How it works

Register to receive 3 month of free membership any time after launch

Your name is	
You are	Male ∨
You were born on	Jan ∨ 1 ∨
	1980 ∨
Your email address	
Account password	

Register

Ability to use Google, Facebook and VK for authentication/registration.

How it works – link to About section.

Registration info is saved to the database. After registration – confirmation email and "thank you" page with links to Articles, About and test as well as an email to administrator (must be able to turn that off at some point).

Test

70 yes/no questions test accessible with a direct link or after registration.

Show the page with brief instructions first:

Start the test Home page / Register / Start the test

You are about to do a test that will determine your personality type.
There are 70 yes/no questions and it will take only 10-15 minutes.
Don't think too much. First answer that comes to mind is likely the right one.
Make sure you answer based on how it is and not on how you want things to be.

Start the test

How the test works. Each question adds a point to one of four dichotomies:

Extraverted (E) – Introverted (I)

Sensing (S) – Intuitive (N)

Thinking (T) – Feeling (F)

Judging (J) – Perceptive (P)

For example answer Yes to the following question adds one point to (E) while No adds a point to (I):

> You tend to say first and then think, you don't know in advance what you are going to say.

List of questions and corresponding dichotomies will be provided (see Jumchart).

Based on results a user is determined to be a certain personality type, for example ISFP.

In case of equal points a user is offered first description (from the list) with two options: Yes, it's me and Show another description. There should be an indication on the top of the page about how many types have been found and which one is currently being reviewed.

Time spent answering the questions should be tracked and in case it took more than 15 minutes (time should be adjustable by administrator) a user will see the result but should be offered to retake the test. If a user accepts the description we assume he feels it's his type. Otherwise he can choose the option to retake the test. There should also be an option to skip the retake for now.

If the test is being taken after the registration, the result should be saved to the database in user record. The type is one field, no need to keep each dichotomy separately.

After the user accepted a type – thank you page with options to:

- Register if the user used direct link to test page
- Share sociotype in social networks

- Go to about/articles section for more info
- Determine relations with somebody you know
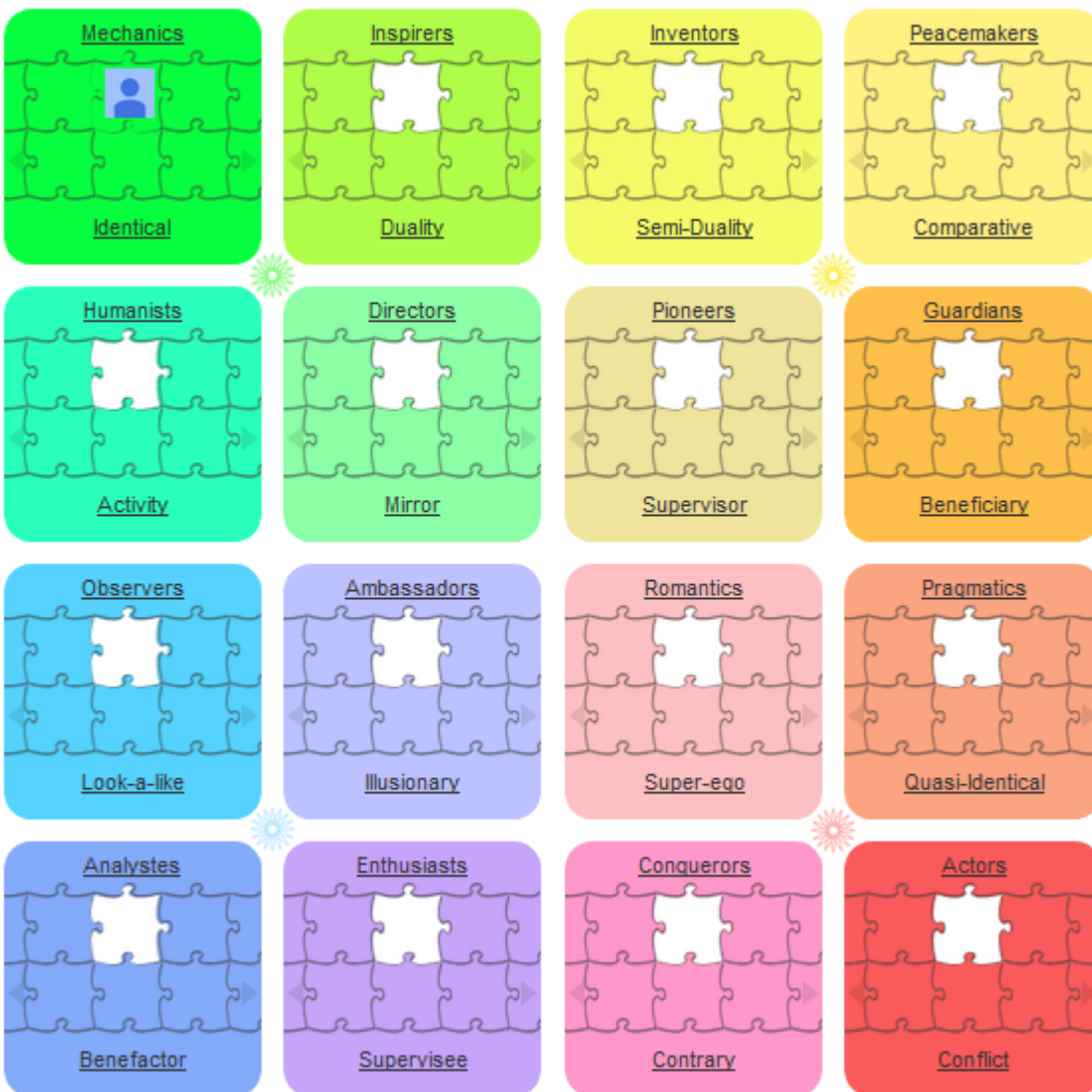- Show relation with other sociotypes

Relations with somebody you know

A form that sends invitation email with link to the test. Available only after registration. So if a user is not registered clicking the link should bring up registration form first.

The email to the person must be sent with links to requestor's profile and registration. After this person finishes the test the first user should receive notification with link to this person's profile.

Show relation with other sociotypes

The page with user's relations with other types (based on the test) similar to below.

Mechanics	Inspirers	Inventors	Peacemakers
Identical	Duality	Semi-Duality	Comparative
Humanists	Directors	Pioneers	Guardians
Activity	Mirror	Supervisor	Beneficiary
Observers	Ambassadors	Romantics	Pragmatics
Look-a-like	Illusionary	Super-ego	Quasi-Identical
Analystes	Enthusiasts	Conquerors	Actors
Benefactor	Supervisee	Contrary	Conflict

Types and relations are clickable and bring to a page with type or relation description.
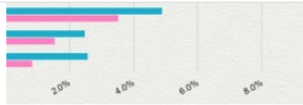
About

A page with links to detailed site info etc. Ratio graph – after the launch (Stage 2).

Stage 2 – Dating site

Home page

Form with basic search parameters, links to about, articles, registration and log in page.

Log in page

- Log in form, link to registration, about and articles.
    - o It doesn't have to be a separate page – could be a form on top.
- Ability to use Google, Facebook or VK for authentication.
- Input sanitation!!!
- Keep entered email address if password is incorrect
- Forgot password option take the email and sends a link to reset password.
    - o Doesn't have to be a separate page
    - o If email address doesn't exist – red text under the field "We could not found an account with this email address.

Search results (anonymous)

List of found user profiles with pictures, sociotype, age and location.

Mark	John	Tom	Alex
35	20	46	51
Canada, ON	Canada, ON	Canada, ON	Canada, ON

If a user selects a profile – show login page.

NOTE: As the search is anonymous we should consider resource usage and implement some limitations to avoid any possibility for DoS.

Ability to add and configure the following logic: if amount of profiles found is less than a certain number (configurable), offer the user to adjust age +/- certain number of years (configurable) to see more than certain number of profiles (configurable).

> A note on the last one: administrator should be able to set threshold (# of profiles) and one parameter and the other one should be calculated.

Registration, test

Same as Stage 1 but with an option to "Skip and go to **Member profile**" on the page with test instructions.

After a type has been chosen – redirect to **Profile page**.

Profile page

Sociotype, age, gender and name must be populated from registration info.

This is the main page where user leaves information about themselves and selects what he/she is looking for. The page consists of two parts – information about the user on the left and user's preferences (who I'm searching for, my match) on the right. See Jumchart for details on existing fields, forms and checkboxes.

Changes to picture, "I am" and "Looking for" are published right away but sent for moderation. So, we need an ability on the backend to reverse the change. Perhaps we can send a special link in the email to administrator to reverse the change and ability to send a message to the user with the reason and additional information. We are open to suggestions about better ways to do that.

Picture upload dialog should check the size and resolution before accepting the picture. The picture must be formatted properly (automatically) to fit the area but without disproportion. We expect the picture to be clickable so a preview must be generated each time a user uploads new picture.

List of options for each section, including drop-downs, must be configurable. Match preferences should appear as default search on Search page.

Sliding bar under profile picture sets the amount of sociotypes a user is looking for.

There are 16 personality types (ISTP, ENFP etc. determined by the test). There are 14 possible types of relations between people. Type of relations that is going to happen between people is determined by their sociotypes. All relation types can be ordered from best to worse judging by how a person feels in these relations. The best, most suitable is Dual relations.

Dual relations is the first (left) position on the sliding bar. The further to the right a user moves the pointer, the more relation types he is willing to participate in and the more sociotypes he is willing to communicate with.

Sliding bar position changes the number of relations under Relations and the number of type icons on the right under **My match**.

Table of intertype relations

	ENTp	ISFp	ESFj	INTj	ENFj	ISTj	ESTp	INFp	ESFp	INTp	ENTj	ISFj	ESTj	INFj	ENFp	ISTp
ENTp	Id	Du	Ac	Mr	Rq+	Sv+	Cp	Mg	Se	Ex	QI	Cf	Rq-	Sv-	Cg	Sd
ISFp	Du	Id	Mr	Ac	Sv+	Rq+	Mg	Cp	Ex	Se	Cf	QI	Sv-	Rq-	Sd	Cg
ESFj	Ac	Mr	Id	Du	Cg	Sd	Rq-	Sv-	QI	Cf	Se	Ex	Cp	Mg	Rq+	Sv+
INTj	Mr	Ac	Du	Id	Sd	Cg	Sv-	Rq-	Cf	QI	Ex	Se	Mg	Cp	Sv+	Rq+
ENFj	Rq-	Sv-	Cg	Sd	Id	Du	Ac	Mr	Rq+	Sv+	Cp	Mg	Se	Ex	QI	Cf
ISTj	Sv-	Rq-	Sd	Cg	Du	Id	Mr	Ac	Sv+	Rq+	Mg	Cp	Ex	Se	Cf	QI
ESTp	Cp	Mg	Rq+	Sv+	Ac	Mr	Id	Du	Cg	Sd	Rq-	Sv-	QI	Cf	Se	Ex
INFp	Mg	Cp	Sv+	Rq+	Mr	Ac	Du	Id	Sd	Cg	Sv-	Rq-	Cf	QI	Ex	Se
ESFp	Se	Ex	QI	Cf	Rq-	Sv-	Cg	Sd	Id	Du	Ac	Mr	Rq+	Sv+	Cp	Mg
INTp	Ex	Se	Cf	QI	Sv-	Rq-	Sd	Cg	Du	Id	Mr	Ac	Sv+	Rq+	Mg	Cp
ENTj	QI	Cf	Se	Ex	Cp	Mg	Rq+	Sv+	Ac	Mr	Id	Du	Cg	Sd	Rq-	Sv-
ISFj	Cf	QI	Ex	Se	Mg	Cp	Sv+	Rq+	Mr	Ac	Du	Id	Sd	Cg	Sv-	Rq-
ESTj	Rq+	Sv+	Cp	Mg	Se	Ex	QI	Cf	Rq-	Sv-	Cg	Sd	Id	Du	Ac	Mr
INFj	Sv+	Rq+	Mg	Cp	Ex	Se	Cf	QI	Sv-	Rq-	Sd	Cg	Du	Id	Mr	Ac
ENFp	Cg	Sd	Rq-	Sv-	QI	Cf	Se	Ex	Cp	Mg	Rq+	Sv+	Ac	Mr	Id	Du
ISTp	Sd	Cg	Sv-	Rq-	Cf	QI	Ex	Se	Mg	Cp	Sv+	Rq+	Mr	Ac	Du	Id

Key: Du - Duality; Ac - Activation; Sd - Semi-duality; Mg - Mirage; Mr - Mirror; Id - Identity; Cp - Cooperation; Cg - Congenerity; QI - Quasi-Identity; Ex - Extinguishment; Se - Super-ego; Cf - Conflict; Rq+ - Requester; Rq- - Request recipient; Sv+ - Supervisor; Sv- - Supervisee

For the front-end, however, we will be using friendly names:

Socionics 4-letter code	Name in English	Name in Russian
ESTj	Administrator	Администратор
ENTj	Entrepreneur	Предприниматель

ESFj	Enthusiast	Энтузиаст
ENFj	Mentor	Наставник
ESTp	Conqueror	Маршал
ESFp	Politician	Политик
ENTp	Seeker	Искатель
ENFp	Advisor	Советчик
ISTj	Inspector	Инспектор
INTj	Analyst	Аналитик
ISFj	Guardian	Хранитель
INFj	Humanist	Гуманист
ISTp	Craftsman	Мастер
ISFp	Peacemaker	Посредник
INTp	Critic	Критик
INFp	Romantic	Лирик

From this page a user is also able to deactivate or delete profile, share the sociotype in social networks and disable matching based on sociotypes.

Profile deactivation makes it invisible for search.

Disabling macthing abilities disables (greys out) any functionality related to sociotypes and relationships including:

- Sliding bar on **Profile** page (disabling matching is the equivalent of moving the bar to the right)
- Sociotype drop downs on **Profile** page
- **Show only Dual sociotypes**, sort by **Compatibility** option and **Sociotype** drop down on **New Search** or **Edit Search** pages.
- Relations and Sociotype information in other profiles includig search results (**Run**), **Member** profile details, message chat.

Messages

List of conversation with other users. Conversations with new messages are highlighted. The list must be sorted by the date of last message received so that conversations with new messages are on top of the list.

Matching | Articles | About |

| Profile | Messages | Search | Analytics | [Log out] |

☐ Receive notifications about new messages by email

From	Last message
Jane	Mar 4, 2015
Ann	Oct 10, 2015
Marie	Feb 24, 2016
Bob	Jun 11, 2015

Note: This section is available to all registered users because somebody with paid membership can send a message to a user with free membership. Also in such cases a user with free membership will be able to reply. Users with free membership are not able to send messages to other users except the case when two users liked each other.

Search page

Always has one default search (non-editable) created from match preferences on **Profile page**. Users should be able to create new searches and run, edit, and delete (asks for confirmation) existing.

Matching | Articles |

| Profile | Messages | Search | Analytics | [Log out] |

New search

Saved searches

Girls between 20 and 30 from Toronto	Run	Edit	Delete
Blond girls from Ottawa	Run	Edit	Delete

Determine relations with somebody you know

Email address:	
Message:	
Share my type:	☐
	Send

Favorites

<...> Members added to favorites <...>

Determine relations with somebody you know section is the same as described in Stage 1.

Favourites section contains members added to favourites.

New search form (as well as **Edit**) contains the same drop-down and check-boxes available on **Profile page**. New search also includes the following additional settings:

Each of them will have a question mark with explanation (shown by mouse click).

- **Show only Dual sociotypes** deactivates sociotype section below.
- **Show only reverse match** means that only profiles for which this user is a match (Profile page settings) will be shown.

Default sort order is as follows: with picture, last activity, unviewed, compatibility. For example, if a user choses to arrange search results by age then among profiles with the same age profiles with picture will be shown first arranged by last activity date, unviewed first.

Last activity date is last log in timestamp.

After choosing preferences a search can be ran which brings the user to **Search results (Logged in)** page. From there a user will be able to save the search or refine it.

NOTE: Is there a need to limit the number of searches a user can create, especially in case of email alerts?

If a user is editing existing search there must be additional field for notification frequency settings from **Save search** page.

Search results (Logged in)
Similar to **Search results (anonymous)** but with additional options for each profile.

Save search	Refine

DUAL	MIRROR	DUAL	
Send a message	Send a message	Send a message	Send a message
Report abuse	Report abuse	Report abuse	Report abuse
Add to favorites	Add to favorites	Add to favorites	Add to favorites
Mark as viewed/unviewed	Mark as viewed/unviewed	Mark as viewed/unviewed	Mark as viewed/unviewed
INTP	ISPJ	ENTJ	ESTP
Mark	John	Tom	Alex
35	20	46	51
Canada, ON	Canada, ON	Canada, ON	Canada, ON

Send a message option is available to paid members or when a member "liked" this member. For free members **Send a message** must be replaced with **Purchase membership** link.

Adding to favourites automatically marks profiles as viewed.

Report abuse is just a form that sends an email to administrator.

Mouse click on relations name (Dual) will show the description of relations.

Save search

It's just a simple form with name field and notification frequency options: Never, Daily, Weekly. Saved search appears under **Saved searches** on **Search page**. If anything other than Never has been chosen it means that this search will be ran automatically according to selected schedule and a user will be notified about new profiles (from last ran date).

There will be a schedule when we run searches, so we will need an ability to adjust that. See Cron service in appendix.

Purchase membership

This is a page with explanation of membership options and a form for credit card payment, options to pay with PayPal, Web Money etc.

Each time somebody purchases a membership administrator should be notified by email. There must be a place or config parameter where we can turn that off/on.

Member profile

Opening a profile marks it as viewed.

John

DUAL

… Decription of relations…

Like

I am:	
Looking for:	
	General
Gender:	male
Age:	20
Living:	Toronto, ON, Canada
Sociotype:	INTP
	Appearance
Height:	160m
Hair color	black
Hair length	short
Hair type	curly
Eye color	brown
Eye wear	none
Weight	61 kg
BMI	21
Body type	athletic
Ehtnicity	black
Body art	piercing
	Lifestyle
Drinking	occasionally
Smoking	occasionally
Marital status	single

If a user liked a member with paid membership user's profile should appear under **Analytics | Profile Views** and should be marked as a profile that liked the member. Free users will not know that somebody liked them.

Analytics

At this point this is a page with basic stats on the amount of sent messages, response rate and profile views. In future we will need to add an advice on what to do to improve response rate.

Matching | Articles | About |

Profile	Messages	Search	Analytics	[Log out]

You've sent 100 messages to unique people and got 10 responses.

Your response rate is 10%

Members with higher response rate:

- Have higher profile completeness
- Have less match preferences
- Sent 250 messages in average
- Use word marriage in their profile
- Are willing to relocate

Profile views

☐ Notify me via email when somebody viewed my profile (paid membership only).

☐ Notify me via email when somebody liked me (paid membership only).

<...> Members who viewed the profile recently <...>

Appendix 1 – Database

Note: This is for reference only, not a full DB structure. Improvements, corrections, additions are welcome.

***** MONGO *******

```
// db.members
{ _id:
, username:
, password:
, name:
, email:
, ....                          <= sociotype, hair color etc.... (see New search page)
, favorites: [ { _id:
        , name:}
            , {....     }]
, membership:
, profilecompleteness:          <= 1-just name and email, 2-profile, 3-test, 4-match
}

// db.messages
{ _id:
, fromId:
, toId:
, subject:
, text:
, date:
, read:
}
```

```
// db.searches
{ _id:
, ownerId:
, searchName:
, ....                              <=criteria (see New search page)
, alert:
, lastRan
}
```

***** REDIS *******

```
member:session:<memberId>           <sessionID>
member:viewed:<memberId>            <memberId> <memberId>
member:liked:<memberId>             <memberId> <memberId>
member:image:<memberId>                    <path> <path>
member:viewcount:<memberId>               <#>
member:messagecount:<memberId>                  <#>
member:messagemembercount:<memberId>        <#>
member:viewcount:<memberId>               <#>
member:matchprefcount:<memberId>       <#>
member:responsecount:<memberId>                 <#>
```

Appendix 2 - Cron: scheduled tasks

Can we utilize Linux cron to run SQL query and send emails using template in templates folder?

(01) Birthday – email.

(02) Membership expiration – reminder to renew, discount.

(03) Next day after registration if test has not been completed – remind to complete because it's important.

(04) New matches for existing searches (if chosen) – main search from profile match settings.

(05) Alerts on saved searches