



# Defining design requirements

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# Pre-design

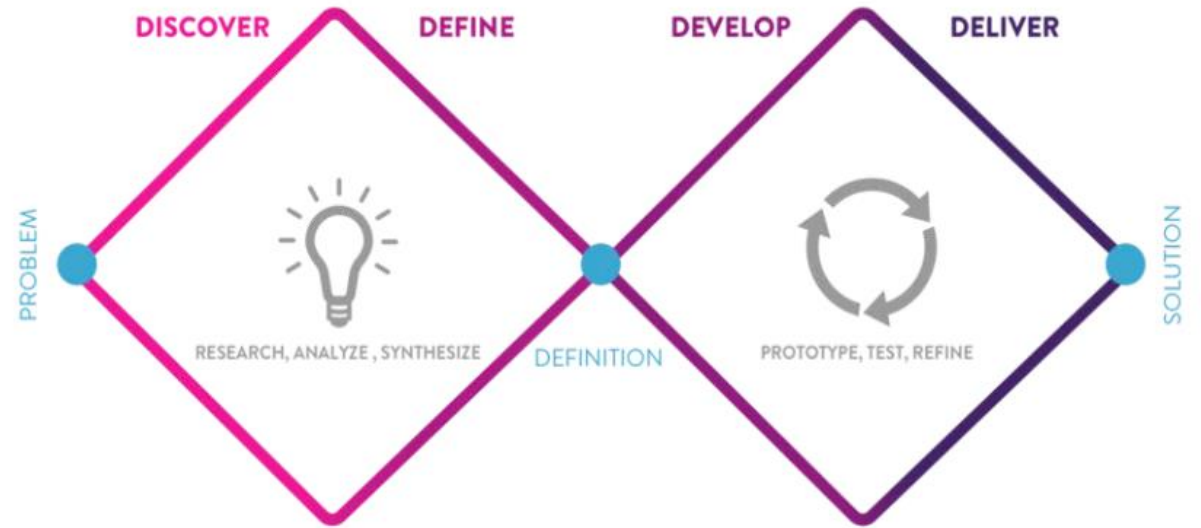
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## DISCOVER

1. User research
  1. Contextual inquiry
  2. Interviews
  3. Observation ...

## DEFINE

1. State Users' Needs and Problems
  1. Define user models (**personas**, user roles, user profiles, market segments)
  2. Recognize their needs, goals and pain points
  3. Articulate and analyze specific tasks
2. Define design requirements (\*value propositions)



# Personas

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User model

# Personas

- Describes users archetypes, **concrete representations of the different types of users** of a specific product.
- Personas are user models that are represented as specific, individual human beings.
- They are not actual people but are **synthesized directly from research and observations of real people**.
- They are personifications: They engage the empathy of the design and development team around the users' goals.




**Figure 3-2:** By designing different cars for different people with different specific goals, we can create designs that other people with needs similar to our target drivers also find satisfying. The same holds true for the design of digital products and software.

# Persona example

## Nattie Anderson

### Main Persona



"Live with no excuses and travel with no regrets, life is too short."

AGE: 28  
GENDER: Female  
INCOME: 70K  
EDUCATION LVL: MBA  
OCCUPATION: Front-end developer  
FAMILY STATUS: Single  
LOCATION: Los Angeles, CA.  
ARCHETYPE: Traveler.

Easy-going Thinker Organised Curious

Achiever

### Bio

Nattie is a yoga teacher who travels 1-3 times each month during the weekends. She only travels inside her country or on adjacent countries and loves to stay in small hotels or Airbnb places. Her goal is to know as many new cities as possible. She spend too much time finding the best option to get a new city based on the price. She expects to find new places and how will she get there and where will she stay on an easy and fast way.

### Goals

- To find new cool cities with thing to do.
- Find the best travel and stay price.

### Challenges / Frustrations

- Not being able to compare prices on an easy way.
- Find optimal routes to destination.
- Find non-common cities with several things to do/visit.
- Get the best travel and accommodation price.

### Personality

Innovator: ☐ Extrovert: ☒

Analytical: ☒ Creative: ☐

Loyal: ☐ Fickle: ☐

Passive: ☐ Active: ☒

### Motivators

Easy to use: ☒

Ability to compare results: ☒

Speed: ☒


Reviews / Recommendations: ☐



Loyalty / Rewards: ☐

### Scenario

Nattie is planning her next trip. But since she has been traveling for a while now she constantly find city results where she has been, she's not interested in those places. Also at the same time she's looking for cheap flights since she may come across an interest new place to visit at a low price.

### Brands

American Airlines 

# Watch

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## Crafting User Experience Personas

[Crafting User Experience Personas - 352 Noodles & Doodles Episode 29 - YouTube](#)

# Personas

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- Based on the real research and observation
- The purpose of working with personas is to be able to develop solutions, products and services based upon the needs and goals of users.
- A persona clarifies who is in your target audience by answering the following questions:
  - Who is my ideal customer?
  - What are the current behavior patterns of my users?
  - What are the needs and goals of my users?
  - What issues and pain-points do they currently face within the given context?
- Helps to answer what and why users do in given context
- Help to discuss and validate design questions and decisions
  - Does this make sense to this persona?
  - Would persona use this?
  - Persona would not use/like this, because...



# Types of Personas

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- The types of personas ([Four Different Perspectives on User Personas | Interaction Design Foundation \(IxDF\)](https://www.interaction-design.org/fundamentals/4-different-perspectives-on-user-personas) ([interaction-design.org](https://www.interaction-design.org))
  - Goal-directed persona
  - Role directed persona
  - Engaging persona
  - Fictional persona



# Persona documentation

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- Persona description:
  - details about the user's education, lifestyle, interests, values, limitations, desires, attitudes, **behavior *patterns* (e.g. infrequent or one-time users, repeat users who will return weekly or daily to view content)**
  - a few fictional personal details to make the persona a realistic character.
  - name, picture
  - goals, pain points (frustrations)
- needs - user stories, epics

# Persona example

## Janet - The Family Planner

CF



### Janet's Vital Statistics

-  Janet is a 38 year old married female living in Berlin, Germany.
-  Janet is the mother of 4 children, aged 1 to 10.
-  Janet lives a busy life, and is often on the go.

*"I'm so busy with everything, but I really feel like I should take the kids on a family trip to give them some great memories!"*

### Janet's Goals and Needs

- Janet wants to plan a trip full of positive memories for her children.
- She feels like she can plan the logistics, but that she needs help with figuring out what family activities to do once she reaches her destination.
- She needs something easy to use, she doesn't feel like she has time to work with complex apps.

### Janet's Motivations

- Her main motivation is to create memories for her family.
- To get ideas for family activities while on an upcoming family vacation.
- To find activities that will keep her children busy and happy.

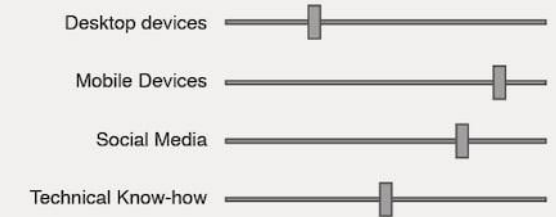
### Janet's Frustrations

- Janet always feels like she has very little time to spend on planning.
- Janet is rarely home and needs a solution that will allow her to easily work while on the go.
- She doesn't want to spend time looking up guides when she gets to her destination, they should be easily available when she needs them.

### Janet's Everyday Activities

- Get the kids out of bed and get them ready for school in the morning.
- Run errands with the non school-aged kids, shopping, lessons, and pre-school.
- Scheduling playdates and meetings with other parents and friends.
- Changing diapers, cleaning, making lunch, and tons of other small tasks!

### Janet's Device and Internet Usage



### Janet's Notable Quotes

- *"I would really love to take a vacation from all of this, especially one where I can spend a little along time with my husband!"*
- *"I've tried things like TripAdvisor, but it doesn't have enough information about activities we can take part in at our destination."*
- *"It would be great to have something I can just keep on me for the whole trip and refer to whenever I want."*

# Goals, needs, pain points

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[A user] needs [need] in order to accomplish [goal]

[Alieda, a multitasking, tech-savvy mother of 2] needs [to quickly and confidently compare options without leaving her comfort zone] in order to [spend more time doing the things that really matter]

- Goals, not features, are the key to product success
- Critical to discover unmet user needs through research. Any unmet need will always have two components:  
goals + pain points -> Unmet needs
- Same goal, different pain point -> different need.

## Goals

Write my essay with an attractive topic.

Make sure my essay is easy to read without grammar errors.

Find the essay topic that is unique from my own experience.

Have resources available anytime to handle my questions.

Determine the right tone for the voice of my essay.

## Pain Points

Not comfortable speaking to professional essay editors.

Cannot afford the services offered by essay tutors.

Don't know how to find the resources.

English is not my first language. Just learning it.

Writing is boring. It's hard for me to focus on writing something.

# Goals

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## Life goals

Who the user wants to be?

- Live the good life.
- Succeed in my ambitions to...
- Be attractive, popular, and respected by my peers.

Explains **why** the user is trying to accomplish the end goals.

Rarely figure directly into the design of an interface's specific elements or behaviors.

Addressing users' life goals makes the difference (assuming that other goals are also met) between a satisfied user and a fanatically loyal user.

## End goals

What the user wants to do?

Be aware of problems before they become critical.

- Stay connected with friends and family.
- Clear my to-do list by 5:00 p.m. every day.
- Find music that I'll love.
- Get the best deal.

End goals represent the user's **motivation for performing the tasks** associated with using a specific product.

Foundation for a product's behaviors, tasks, look, and feel.

## Experience goals

How the user wants to feel?

- Feel smart and in control
- Have fun
- Feel reassured about security and sensitivity
- Feel cool or hip or relaxed
- Remain focused and alert

**Provide focus for a product's visual characteristics and its interactive feel.**

Designers translates persona experience goals into form, behavior, motion, and auditory elements that communicate the proper feel, affect, emotion, and tone

# Constructing personas

## Group interview subjects by role.

- family roles, attitudes or approaches, to relevant activities, or interests and aptitudes regarding lifestyle choices
- job roles or descriptions

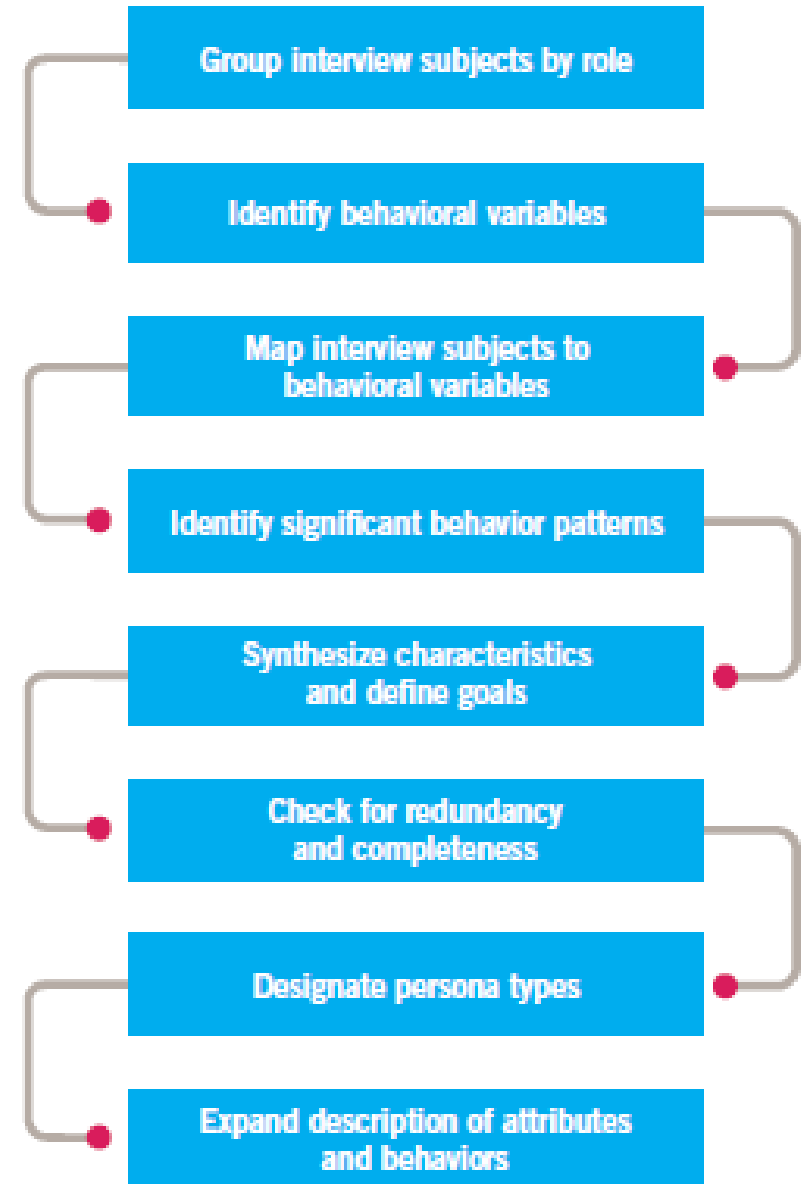


Figure 3-5: Overview of the persona creation process

# Constructing personas

## Identify behavioral variables.

- The most important distinction between behavior patterns emerge by focusing on the following types of variables:
  - Activities—What the user does; frequency and volume
  - Attitudes—How the user thinks about the product domain and technology
  - Aptitudes—What education and training the user has; ability to learn
  - Motivations—Why the user is engaged in the product domain
  - Skills—User abilities related to the product domain and technology.

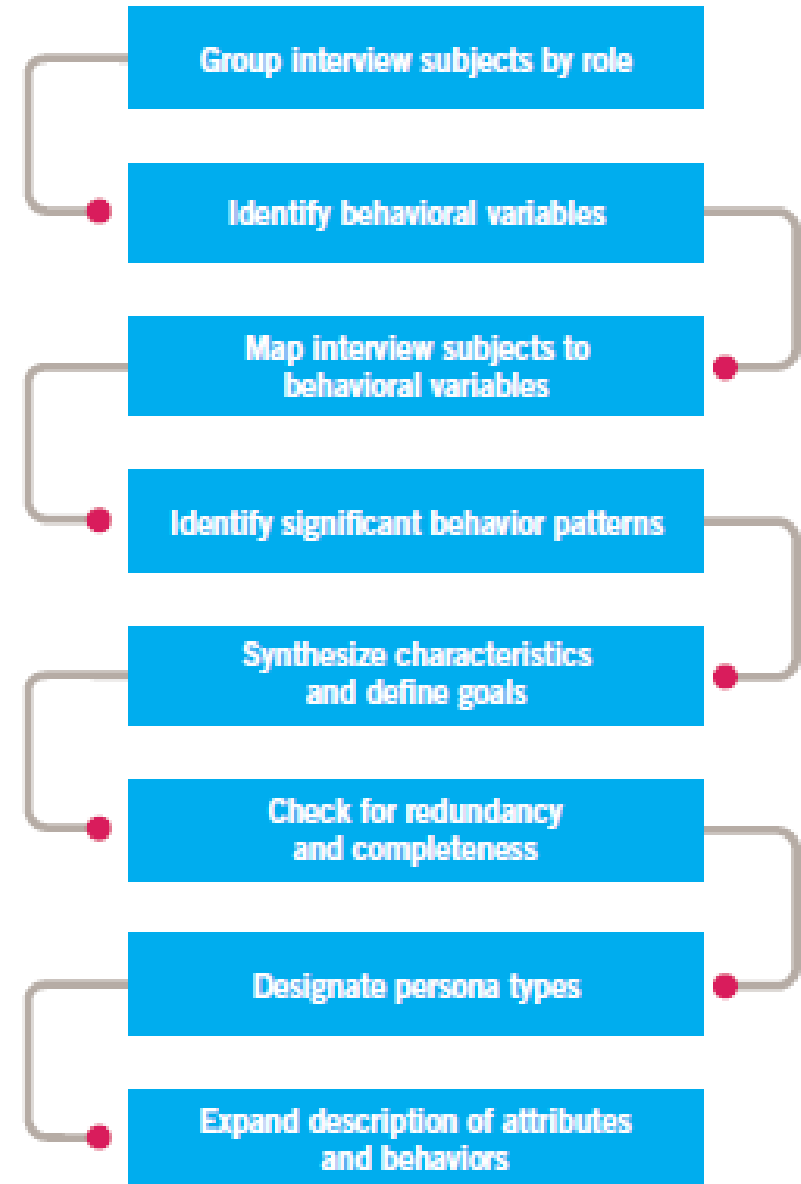


Figure 3-5: Overview of the persona creation process

# Constructing personas

Map interview subjects to behavioral variables.

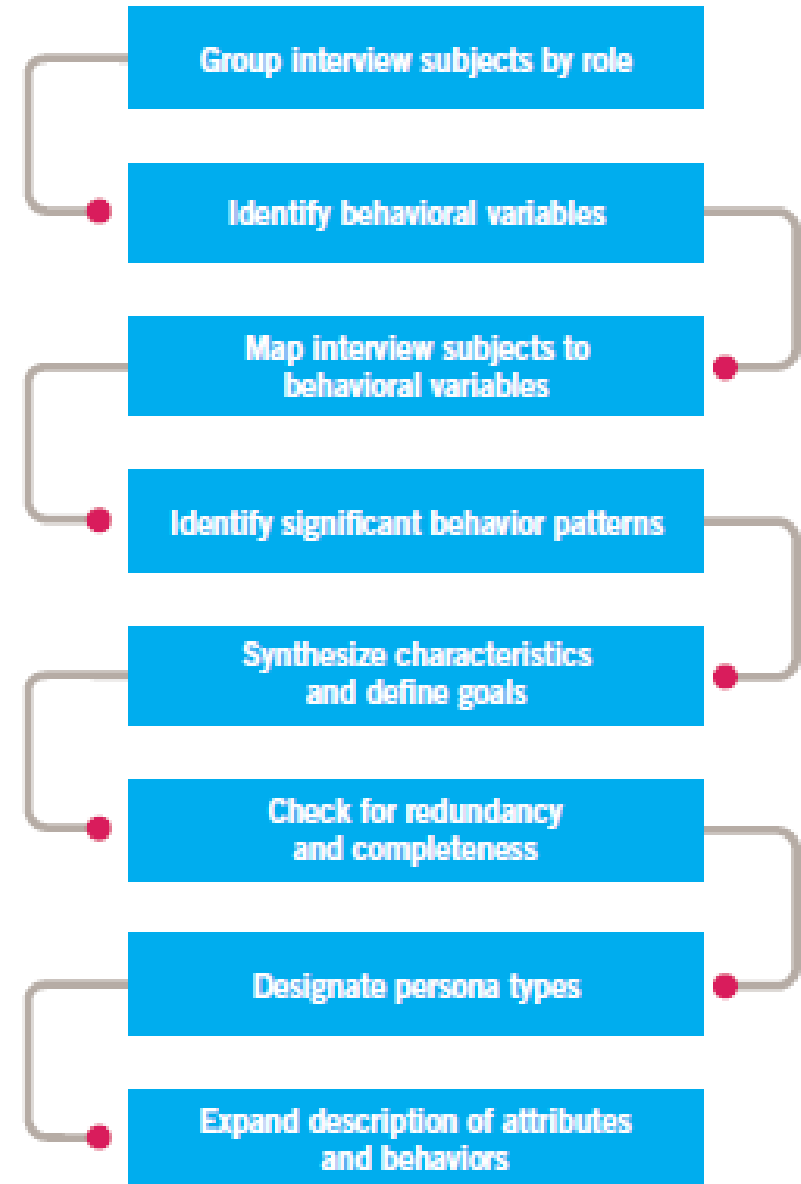


Figure 3-5: Overview of the persona creation process



# Constructing personas

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Identify significant behavior patterns.

- A set of subjects who cluster in six to eight different variables will likely represent a significant behavior pattern that will form the basis of a persona.

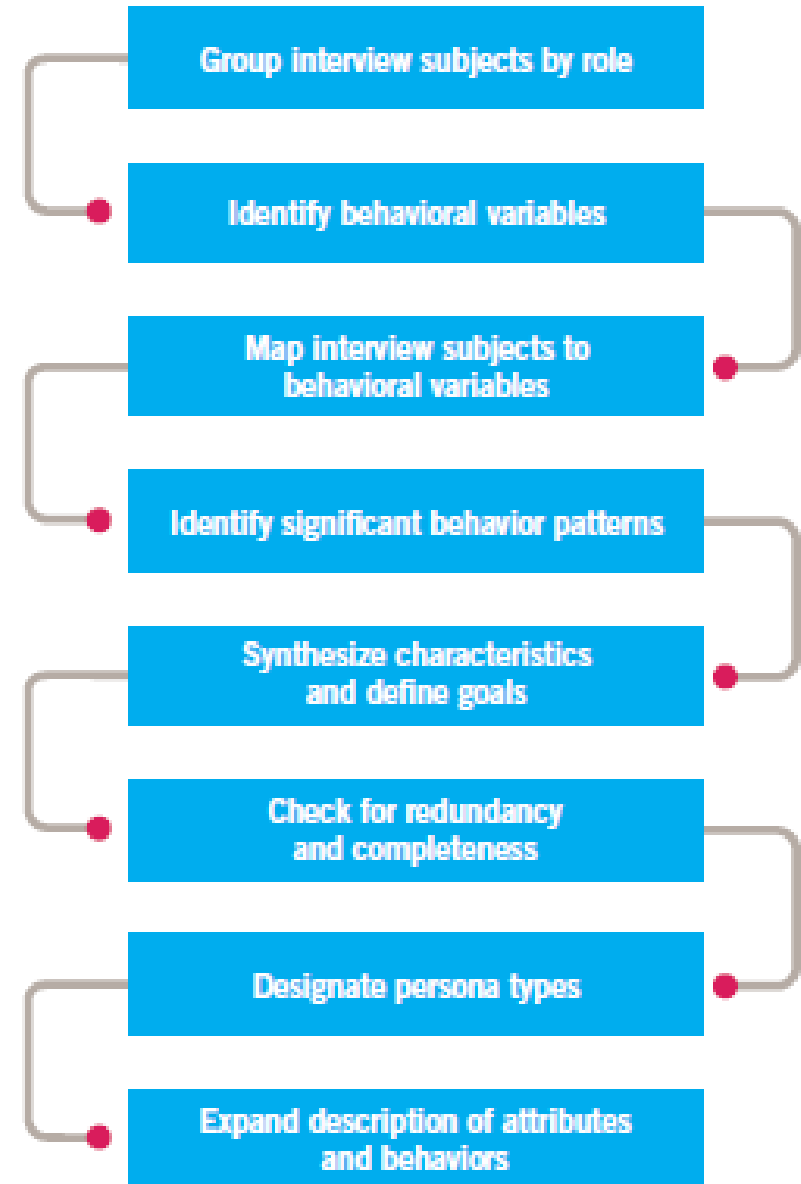


Figure 3-5: Overview of the persona creation process

# Constructing personas

## Synthesize characteristics and define goals.

- We derive a persona's goals and other attributes from their behaviors.
- These behaviors are synthesized from what was observed/identified in the research process as representing meaningful, typical use of the product over a period of time that adequately captures the relevant set of user actions.
  - The behaviors themselves (activities and the motivations behind them)
  - The use environment(s)
  - Frustrations and pain points related to the behavior using current solutions
  - Demographics associated with the behavior
  - Skills, experience, or abilities relating to the behavior
  - Attitudes and emotions associated with the behavior
  - Relevant interactions with other people, products, or services
  - Alternate or competing ways of doing the same thing, especially analog techniques

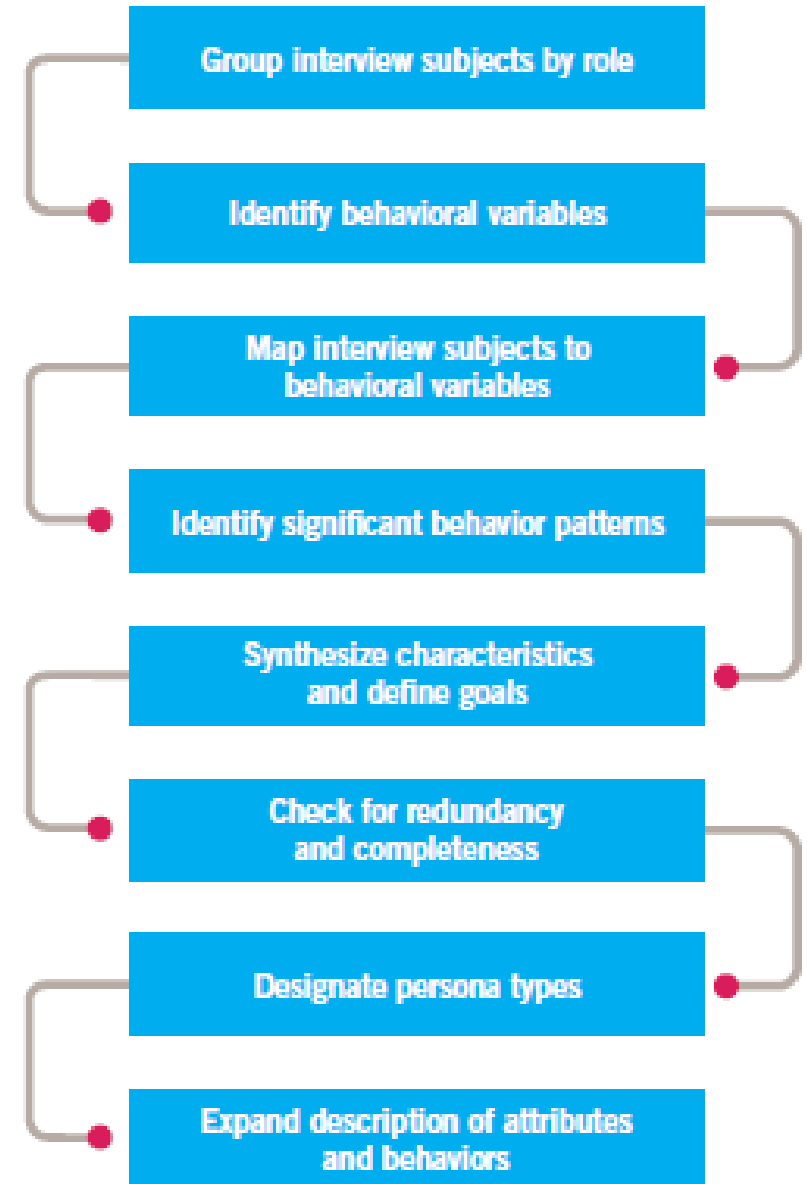


Figure 3-5: Overview of the persona creation process

# Constructing personas

## Designate persona types.

- prioritize personas to determine which should be the primary design target
- **Primary personas** are the main target of interface design. A product can have only one primary persona per interface, but it is possible for some products (especially enterprise products) to have multiple distinct interfaces, each targeted at a distinct primary persona.

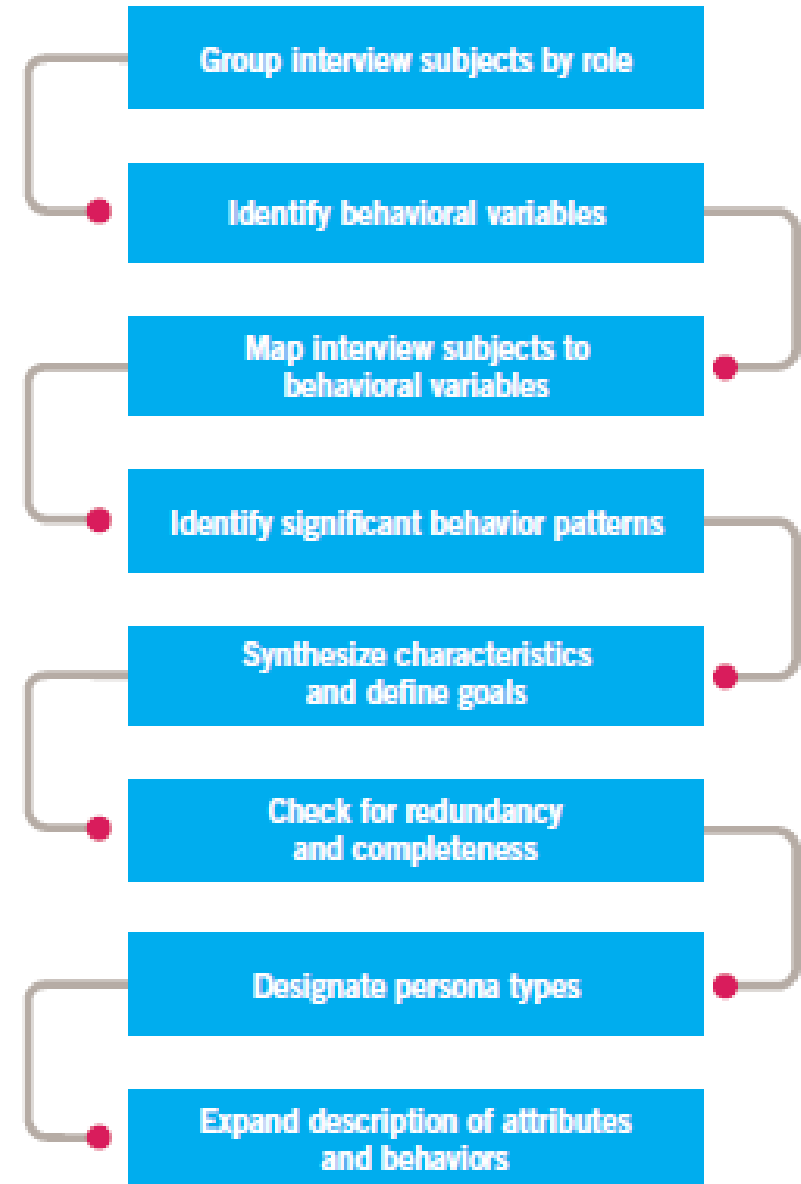


Figure 3-5: Overview of the persona creation process

# Constructing personas

Expand the description of attributes and behaviors.

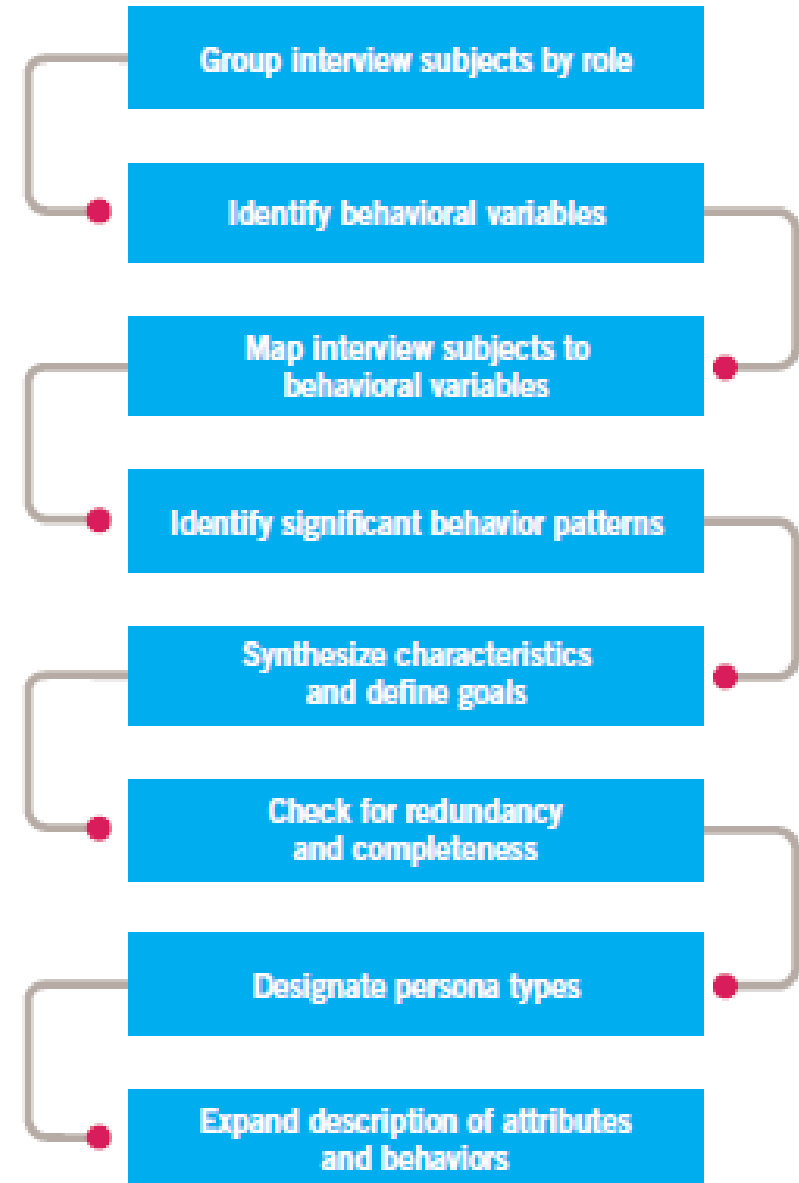
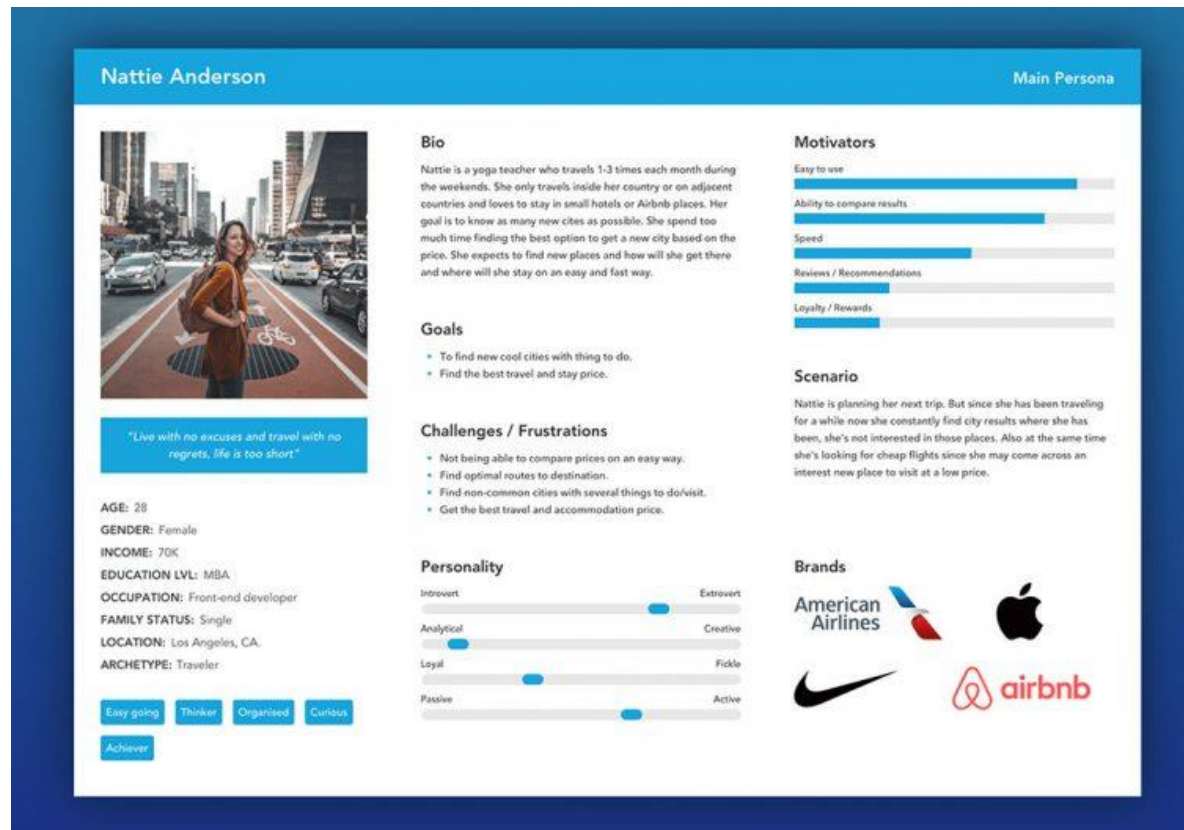


Figure 3-5: Overview of the persona creation process

# Persona example

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Mi smo startup kompanija sa poslovnom idejom da osnujemo FESTIVE platformu za pronalaženje mesta proslave i predstavljanje paketa ponuda za proslave sa očiglednim mehanizmom diferencijacije. Korisnikovo iskustvo u pronalaženju i rezervaciji mesta za proslavu i drugih potrepština trebalo bi da bude poput Airbnb iskustva. Proslave mogu biti venčanja, rođendani, godišnjice i tako dalje. Vlasnici mesta trebalo bi da obezbede prostor i mogućnosti zakazivanja. Takođe ćemo uključiti dobavljače za opremu i nameštaj, hranu, tematske ukrase i zabavu (muzičari, klovnovi itd.).

Svi pružaoci usluga mogu da naprave pakete ponuda za proslave prema temama ili ugođaju. Kupac takođe može da napravi sopstveni paket u skladu sa svojim željama i ukusom.

Kupac može da razgovara sa pružiocima usluga o detaljima i pregovara o snižavanju cena.

Svi pružaoci usluga bi trebalo da imaju istaknutu reputaciju na osnovu rangiranja od strane korisnika, kakoi za sebe, tako i za uslugu.

# Persona example

Zorica



## BEHAVIORS

### TECHNOLOGY

- Često traži ideje za nove torte i ukrase po internetu
- koristi društvene mreže

### MOTIVATIONS

- Ima cilj da bude najbolja u svom poslu.
- Želi da obezbedi stabilne prihode za svoju porodicu.
- Posebno je raduje kada uspe da ispuni sve želje ili prijatno iznenadi kupca.

## DEMOGRAPHICS

Profile: diplomirani ekonomista, samozaposlena majka troje dece, nema radno vreme

Gender: Ženski

Age: 39

Location: Kragujevac

Occupation: poslastičar

## NEEDS & GOALS

### GOALS

- Hoće da poveća obim posla i ima pristup velikom broju kupaca.
- Hoće da poveća vidljivost svojih proizvoda.
- Hoće da napravi saradnju sa što većim brojem vlasnika restorana i prostora za iznajmljivanje.
- Želi da smanji komunikaciju sa kupcima putem telefona.
- Hoće da zna nešto o pouzdanosti kupca po pitanju plaćanja i manirima u komunikaciji sa pružiocima usluga.
- Želi da omogući kupcima plaćanje on-line.

### PAIN POINTS

- Dešava se da ima problema sa naplatom.
- Ponuda poslastičara je velika i teško dolazi do prilike da pokaže svoje kreacije.
- Nakon usmenih dogovora se dešava da pri preuzimanju kupac tvrdi da nije urađeno onako kako je tražio.
- Dopada joj se ideja proslava u privatnim vilama, misli da može da doprinese originalnosti i posebnom ugođaju gostiju, ali ne poznaje ponuđače prostora.

# Usage models

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# Design informing and design requirements

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*Define what the product will do before you design how the product will do it.*

- Design requirements aren't features

Design requirement is different from how the term is commonly used (and, we believe, misused) in the industry. In many product-development organizations, “requirement” has become synonymous with “feature” or “function.” There is clearly a relationship between requirements and functions (key part of design process). We (Cooper) suggest that you think of design requirements as being **synonymous with needs**.

- Design requirements aren't specifications

Product requirement document – defines what and how?

Design requirement document – defines what?

# How to identify requirements?

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- Create problem and vision statements
- Explore/brainstorm
- Identify persona expectations
- Construct context scenarios
- Identify design requirements

## Problem statement

Company X's customer satisfaction ratings are low. Market share has diminished by 10 percent over the past year because users have inadequate tools to perform tasks X, Y, and Z that would help them meet their goal of G.

## Vision statement

The new design of Product X will help users achieve G by allowing them to do X, Y, and Z with greater [accuracy, efficiency, and so on], and without problems A, B, and C that they currently experience. This will dramatically improve Company X's customer satisfaction ratings and lead to increased market share.

# Scenario

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- organizing principle that highlights features and functions that are relevant to real users and describes how they all fit together into a coherent product that satisfies both user and business needs
  - Developing scenarios as a mean of imagining ideal user interactions
  - Using those scenarios to extract design requirements
  - Using these requirements in turn to define the product's fundamental interaction framework
  - Filling in that framework with ever-increasing amounts of design detail

## Scenarios versus Use cases

Scenarios and use cases are both methods of describing the user's interaction with a system, but they serve very different functions.

- **Scenarios** are an iterative means of defining a product's behavior **from the standpoint of specific users** (personas).  
This includes not only the system's functionality, but the priority of functions and how those functions are expressed in terms of what the user sees and how she interacts with the system.
- **Use cases** are a technique based on **exhaustive descriptions of the system's functional requirements**, often of a transactional nature, focusing on low-level user action and accompanying system response. They may be useful for determining that a product is functionally complete, but they should be deployed only in the later stages of design validation.

# Scenario

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- Do not describe task-level interactions, but rather broader and more far-reaching clusters of interactions that are intended to **meet user goals**.
- **Persona-based scenarios** are concise narrative descriptions of one or more personas using a product or service to achieve specific goals.
- It is a story describing an **ideal experience from the persona's perspective**, focusing on people and how they think and behave, rather than on technology or business goals.
- Before any design sketching is performed, **the context scenarios** are created.
  - used to explore, at a high level, how the product can best serve the needs of the personas.

# Context scenario

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- Context scenarios should be broad and relatively shallow in scope. They should not describe product or interaction detail but rather should focus on high-level actions from the user's perspective.
- Address questions such as the following:
  - In what setting(s) will the product be used?
  - Will it be used for extended amounts of time?
  - Is the persona frequently interrupted?
  - Do several people use a single workstation or device?
  - With what other products will it be used?
  - What primary activities does the persona need to perform to meet her goals?
  - What is the expected end result of using the product?
  - How much complexity is permissible, based on persona skill and frequency of use?

# A sample context scenario

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- *Our persona is Vivien Strong, a real-estate agent in Indianapolis, whose goals are to balance work and home life, close the deal, and make each client feel like he or she is her only client.*
- *Here is Vivien's context scenario:*
  - *While getting ready in the morning, Vivien **uses her phone to check her e-mail**. Because it has a relatively large screen and quick connection time, it's more convenient than booting up a computer as she rushes to make her daughter, Alice, a sandwich for school.*
  - *Vivien sees an e-mail from her newest client, Frank, who wants to look at a house this afternoon. The device has his contact info, so she can **call him with a simple action right from the e-mail**.*
  - *While on the phone with Frank, Vivien switches to speakerphone so she can view the screen while talking. She **looks at her appointments** to see when she's free. When she **creates a new appointment**, the phone **automatically makes it an appointment** with Frank, because it knows with whom she is talking. She quickly **enters the address of the property** into the appointment as she finishes her conversation.*
  - *After sending Alice to school, Vivien heads into the real-estate office to gather some papers for another appointment. Her **phone has already updated her Outlook appointments**, so the rest of the office knows where she'll be in the afternoon.*

# A sample context scenario

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- The day goes by quickly, and eventually Vivien is running a bit late. As she heads toward the property she'll be showing Frank, the *phone alerts* her that her appointment is in 15 minutes. When she flips open the phone, she sees not only the appointment, but also a *list of all documents related to Frank*, including e-mails, memos, phone messages, and call logs to Frank's number. Vivien *initiates a call, and the phone automatically connects* to Frank because it knows her appointment with him is soon. She lets him know she'll be there in 20 minutes.
- Vivien knows the address of the property but is unsure exactly where it is. She pulls over and taps the address she put into the appointment. The phone *downloads directions along with a thumbnail map showing her location relative to the destination*.
- Vivien gets to the property on time and starts showing it to Frank. She hears the phone ring from her purse. Normally while she is in an appointment, the phone *automatically goes to voicemail*, but Alice has a code she *can press to get through*. The phone knows it's Alice calling, so it uses a *distinctive ringtone*.
- Vivien takes the call. Alice missed the bus and needs to be picked up. Vivien calls her husband to see if he can do it. She gets his voicemail; he must be out of service range. She tells him she's with a client and asks if he can get Alice. Five minutes later the phone sounds a brief tone. Vivien recognizes it as her husband's; she sees he's sent her an instant message: "I'll get Alice; good luck on the deal!"



# Identify requirements

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- After you are satisfied with an initial draft of your context scenario, you can analyze it to **extract the personas' needs or design requirements**. These design requirements can be thought of as consisting of objects, actions, and contexts. Thus, a requirement from the preceding scenario might read as follows:

Call (**action**) a person (**object**) directly from an appointment (**context**).

# Types of requirements

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- Data requirements

- the objects and adjectives related to those objects.
- accounts, people, addresses, documents, messages, songs, and images, as well as attributes of those, such as status, dates, size, creator, and subject.

- Functional requirements

- the operations or actions that need to be performed on the system's objects and that typically are translated into interface controls
- also define places or containers where objects or information in the interface must be displayed

- Contextual requirements

- describe relationships or dependencies between sets of objects in the system
- This can include which objects in the system need to be displayed together to make sense for work flow or to meet specific persona goals. (For example, when choosing items for purchase, a summed list of items already selected for purchase should probably be visible.)
- Other contextual requirements may include considerations regarding the physical environment the product will be used in (an office, on the go, in harsh conditions) and the skills and capabilities of the personas using the product.

# User stories, Epics

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- User stories are used in the agile development process to scope features. Describe what may be built in the software project. User stories are like informally phrased requirements.
- They don't describe the user's entire flow at a big-picture level or describe what the user's end goal is.
- You are looking for user stories to **drive small pieces of interaction design** and prototyping.
- They are **written from the perspective of an end user or user of a system**.
- short sentences phrased like
  - As a <role> I can <capability>, so that <receive benefit>
  - As <who> <when> <where>, I <want> because <why>
- Large stories or multiple user stories that are very closely related - **Epics**.



## BEHAVIORS

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### Na FESTIVE platformi, Zorica

- Može da registruje objekte koje želi da ponudi, pruži detaljan prikaz i detalje, ima uvid u zadovoljstvo klijenata svakim objektom pojedinačno, upravlja rezervacijama:
  - Može da doda nove i ukloni registrovane objekte.
  - Ima pregled svih svojih objekata.
  - Može da uređuje karticu objekta.
  - Može da kontroliše kalendar raspoloživosti objekta.
  - Ima uvid u rejting, komentare i ocene objekta i domaćina.
  - Ima pregled rezervacija i zahteva za rezervacijama.
  - Ima mogućnost da prihvati, odbije i otkaže rezervaciju.
  - Ima uvid u javni profil klijenata i komentare.
  - Po realizovanoj proslavi u objektu dobija obaveštenje (e-pošta, SMS, obaveštenje u porukama na samoj platformi, u zavisnosti od podešavanja) sa linkom ka sekciji za ocenjivanje saradnje sa klijentom.
- Može da definiše paket ponude objekta i usluga sa posebno definisanim cenama, preporukama za vrstu proslave:
  - Ima pregled svih paketa u koje je uključena njena usluga.
  - Može da definiše/ukloni paket usluga za odabranu vrstu proslave, lokaciju.
  - Kada definiše paket može da mu da naziv i opis, selektuje preporučene vrste proslava. Ima jasno odvojene sekcije za objekat u kom će se održati proslava, usluge organizacije nameštaja i opreme, hrane, dekoracije i zabave. Može da definiše posebne cene za ceo paket, kao i pojedinačne usluge.
  - Uz svaku sekciju ima mogućnost da lako pronade/selektuje objekat i uslugu i doda ih u paket.
  - Kada neko doda njenu uslugu u paket dobija obaveštenje o tome.

## DEMOGRAPHICS

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Age: 39

Location: Kragujevac

Occupation: poslastičar

# User stories, Epics, Scenarios

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- User stories and epics are directed at creating scenarios that describe solutions.
- Stories describe a number of specific situations, which are the basis of a scenario.
  - \* Scenarios usually start by placing the persona in a specific context with a problem they want to or have to solve.