State Transition Diagram

Diagram

- **Welcome** → **User**
- **User** → **Area AND price AND foodtype in utterance?**
- **Area AND price AND foodtype in utterance?** — NO → **ask user area/food/price** → **User**
- **Area AND price AND foodtype in utterance?** — YES → **ask for extra preferences**
- **ask for extra preferences** — no extra preferences → **Confirm extracted preferences**
- **ask for extra preferences** → **No restaurants matching preferences**
- **No restaurants matching preferences** — no restaurants match → **Ask user for new parameters** → **User**
- **Confirm extracted preferences** → **User**
- **User** — No Options → **No restaurants matching preferences**
- **User** — standard preferences → **Suggest restaurant**
- **No restaurants matching preferences** — no restaurants in suggestions → **Suggest restaurant**
- **Suggest restaurant** — NO → **User**
- **Suggest restaurant** → **suggestion good?**
- **suggestion good?** → **User**
- **User** — YES → **Give restaurant contacts**
- **Give restaurant contacts** → **finish?**
- **finish?** — YES → **User** — YES → **Thank you, goodbye**
- **finish?** — NO → (back to Welcome)
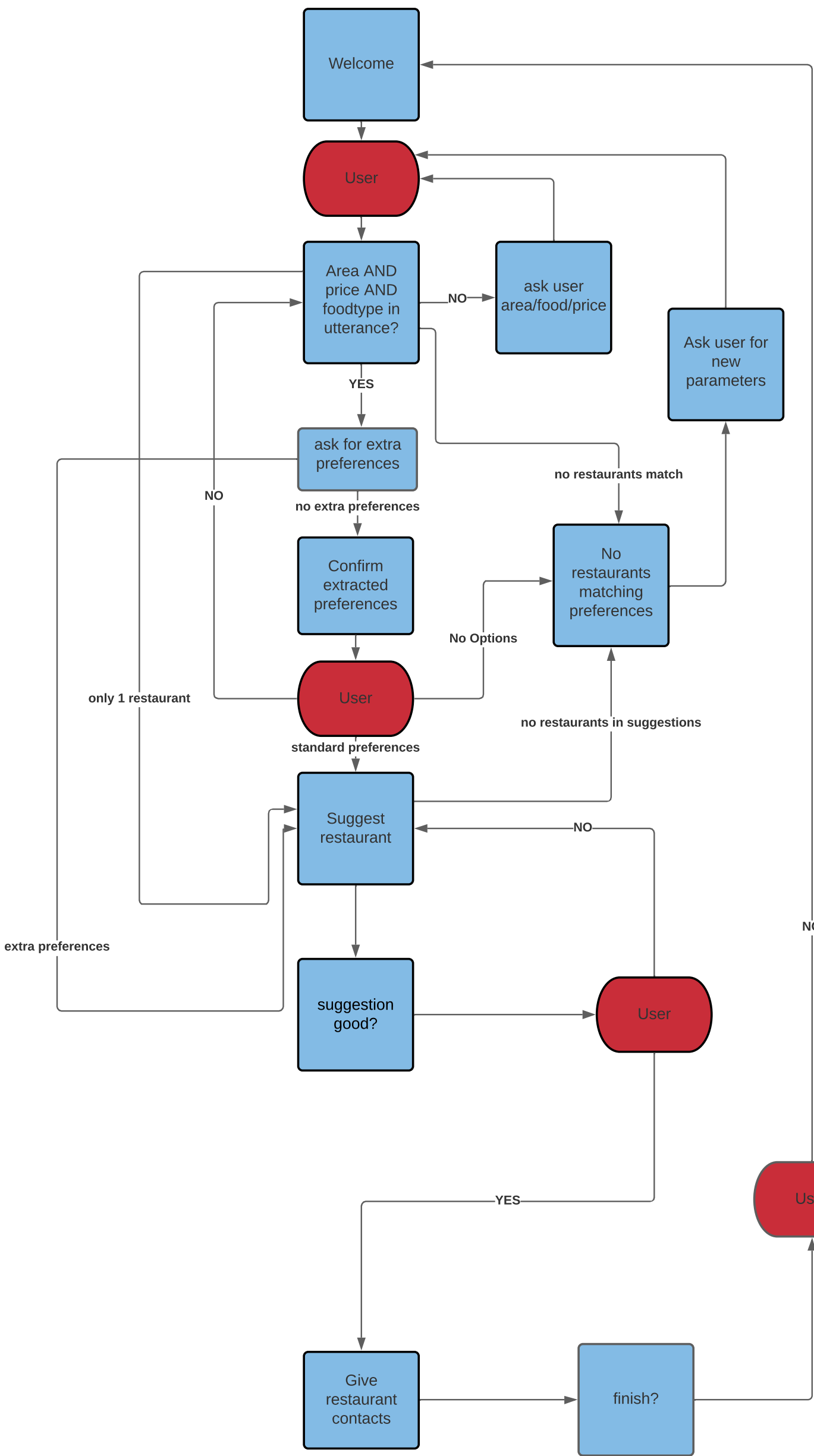- **only 1 restaurant** → Suggest restaurant
- **extra preferences** → Suggest restaurant

Example Dialog:

S:Hi, let's choose a restaurant! Where do you want to eat? Area, price range, food type? #welcome state

U:hi i would like some spanish food

S:So you would like me to find a restaurant serving spanish cuisine. What part of town do you have in mind?

#after user utterance, the system checks if all preferences are filled. In this case, we go to the 'ask user area/food/price' state, which tries to fill the 3 preference slots.

U:perhaps something in the center

S:So you would like me to find a restaurant in the centre of town serving spanish cuisine. What's your budget?

Cheap, moderate, or expensive? #preferences slots still not filled

U:any price is fine

S:Any other requirements? You can choose from: #ask for extra preferences

Good food, open kitchen, good hygiene, children friendly, romantic or busy

U:get me something busy

S:So, you want a restaurant in the centre part of town, with any price range, serving spanish food, am I right?

#there were no restaurants with the extra requirements, we go to 'confirm extracted preferences' state

U:yes #user confirm, go to 'suggest restaurant' state

S:I have found a cool place matching your preferences: 'la tasca'. You like it?

U:no #suggestion not good, go back to suggest restaurant state

S:Okay, I came up with a recommendation: 'la raza'. Sounds good?

U:yes

S:Alright, here are the contacts:'la raza', 01223 464550, 4 - 6 rose crescent. Would you like to finish here?

#give restaurant contacts and go to 'finish?' state

U:yes

Thanks, hope it was useful. See you! #Thank you, goodbye