**PHASE 3:DEVELOPMENT PART 1**

**Creation of chatbot with python :**

To create a chatbot with Python , you need to install some packages. All the packages you need to install to create a chatbot with Machine Learning using the Python programming language are mentioned below:

tensorflow==2.3.1

nltk==3.5

colorama==0.4.3

numpy==1.18.5

scikit\_learn==0.23.2

Flask==1.1.2

**Defining the Intentions of a Chatbot:**

Now we need to define a few simple intents and a group of messages that match those intents and also map some responses based on each intent category. I’ll create a JSON file named “intents.json” including this data as follows**:**

{

"intents": [

{

"tag": "greeting",

"patterns": [

"hi, how are you doing?",

"i'm fine. how about yourself?",

"i'm pretty good. thanks for asking.",

"no problem. so how have you been?",

"what school do you go to?",

"do you like it there?",

"good luck with school.",

"thank you very much.",

"how's it going?",

"never better, thanks.",

"so how have you been lately?",

"i've actually been pretty good. you?",

"which school do you attend?",

"are you enjoying it there?",

"good luck with that.",

"thanks.",

"how are you doing today?",

"i'm absolutely lovely, thank you.",

"everything's been good with you?",

"i haven't been better. how about yourself?",

"where are you going to school?",

"how do you like it so far?",

"i like it so far. my classes are pretty good right now.",

"i wish you luck.",

"it's an ugly day today.",

"i know. i think it may rain.",

"that would be weird.",

"yeah, especially since it's ninety degrees outside.",

"i know, it would be horrible if it rained and it was hot outside.",

"yes, it would be.",

"i really wish it wasn't so hot every day.",

"me too. i can't wait until winter.",

"i like winter too, but sometimes it gets too cold.",

"i'd rather be cold than hot.",

"it doesn't look very nice outside today.",

"you're right. i think it's going to rain later.",

"in the middle of the summer, it shouldn't be raining.",

"that wouldn't seem right.",

"considering that it's over ninety degrees outside, that would be weird.",

"exactly, it wouldn't be nice if it started raining. it's too hot.",

"i know, you're absolutely right.",

"i wish it would cool off one day.",

"that's how i feel, i want winter to come soon.",

"i enjoy the winter, but it gets really cold sometimes.",

"i know what you mean, but i'd rather be cold than hot.",

"i wish it was a nicer day today.",

"that is true. i hope it doesn't rain."

],

"responses": [

"i'm fine. how about yourself?",

"i'm pretty good. thanks for asking.",

"no problem. so how have you been?",

"i go to pcc.",

"it's okay. it's a really big campus.",

"thank you very much.",

"never better, thanks.",

"i've actually been pretty good. you?",

"i'm actually in school right now.",

"i'm going to pcc.",

"it's not bad. there are a lot of people there.",

"good luck with that.",

"thanks.",

"i'm absolutely lovely, thank you.",

"i haven't been better. how about yourself?",

"i'm going to pcc.",

"i like it so far. my classes are pretty good right now.",

"i wish you luck.",

"i know. i think it may rain.",

"that would be weird.",

"yeah, especially since it's ninety degrees outside.",

"i know, you're absolutely right.",

"i wish it would cool off one day.",

"that's how i feel, i want winter to come soon.",

"i enjoy the winter, but it gets really cold sometimes.",

"i know what you mean, but i'd rather be cold than hot.",

"that's exactly how i feel.",

"i know, you're absolutely right.",

"i wish it would cool off one day.",

"that's how i feel, i want winter to come soon.",

"i enjoy the winter, but it gets really cold sometimes.",

"i know what you mean, but i'd rather be cold than hot.",

"that's exactly how i feel."

]

},

{

"tag": "weather\_conversation",

"patterns": [

"it wouldn't seem right if it started raining right now.",

"it would be weird if it started raining in ninety degree weather.",

"any rain right now would be pointless.",

"that's right, it really would be.",

"i want it to cool down some.",

"i know what you mean, i can't wait until it's winter.",

"winter is great. i wish it didn't get so cold sometimes though.",

"i would rather deal with the winter than the summer.",

"it's such a nice day.",

"yes, it is.",

"it looks like it may rain soon.",

"yes, and i hope that it does.",

"why is that?",

"i really love how rain clears the air.",

"me too. it always smells so fresh after it rains.",

"yes, but i love the night air after it rains.",

"really? why is it?",

"because you can see the stars perfectly.",

"i really hope it rains today.",

"yeah, me too.",

"isn't it a nice day?",

"how come?",

"i like how clear the sky gets after it rains.",

"i feel the same way. it smells so good after it rains.",

"i especially love the night air when it rains.",

"really? why?",

"the stars look so much closer after it rains.",

"i really want it to rain today.",

"yeah, so do i.",

"don't you think it's nice out?",

"i hope that it does rain.",

"you like the rain?",

"i understand. rain does make it smell cleaner.",

"i love most how it is at night after it rains.",

"how come?",

"you can see the stars so much more clearly after it rains.",

"i would love for it to rain today.",

"i really want to go to the beach this weekend.",

"that sounds like fun. what's the weather going to be like?",

"i heard that it's going to be warm this weekend.",

"is it going to be perfect beach weather?",

"i believe so.",

"good. i hope it doesn't cool off this weekend.",

"i know. i really want to go to the beach.",

"but you know that california weather is really unpredictable.",

"you're right. one minute it's hot, and then the next minute it's cold.",

"i really wish the weather would just stay the same.",

"i do too. that way we can have our activities planned ahead of time.",

"yeah, that would make things a lot easier."

],

"responses": [

"it would be weird if it started raining in ninety degree weather.",

"any rain right now would be pointless.",

"that's right, it really would be.",

"i want it to cool down some.",

"i know what you mean, i can't wait until it's winter.",

"winter is great. i wish it didn't get so cold sometimes though.",

"i would rather deal with the winter than the summer.",

"yes, it is.",

"it looks like it may rain soon.",

"why is that?",

"i really love how rain clears the air.",

"yes, but i love the night air after it rains.",

"because you can see the stars perfectly.",

"i really hope it rains today.",

"i hope that it does rain.",

"i understand. rain does make it smell cleaner.",

"how come?",

"you can see the stars so much more clearly after it rains.",

"yeah, so do i.",

"i hope that it does rain.",

"i understand. rain does make it smell cleaner.",

"how come?",

"you can see the stars so much more clearly after it rains.",

"i really want to go to the beach this weekend.",

"i heard that it's going to be warm this weekend.",

"i believe so.",

"i know. i really want to go to the beach.",

"you're right. one minute it's hot, and then the next minute it's cold.",

"i really wish the weather would just stay the same.",

"yeah, that would make things a lot easier."

]

},

{

"tag": "beach\_trip",

"patterns": [

"i would like to take a trip to the beach this weekend.",

"a trip to the beach would be fun. how is the weather going to be?",

"it would be nice to go to the beach sometime this weekend.",

"what's the weather going to be like? i may want to go too.",

"it would be nice if the weather would never change.",

"it would be nice if the weather would just stay the same.",

"i really hope it doesn't get cold.",

"that would ruin things, i want to go so badly.",

"the weather in california is unpredictable, so you never know.",

"true. predictable weather would make life easier.",

"the forecast says that it will be warm on the weekend.",

"so do you think it'll be perfect weather for the beach?",

"i think it will be.",

"it wouldn't be good if it got cold this weekend.",

"i want this trip to be perfect, i hope it stays warm.",

"i hope that it does rain.",

"i hope that it does rain.",

"you like the rain?",

"i understand. rain does make it smell cleaner.",

"i would love for it to rain today.",

"i really want to go to the beach this weekend.",

"what's the weather going to be like? i may want to go too.",

"the weather this weekend is supposed to be warm.",

"will it be good beach weather?",

"i believe so.",

"the weather is constantly changing.",

"this california weather is so uncertain, it's impossible to know what'll happen.",

"i know. every day the weather seems different.",

"i would love it if it wasn't always so unpredictable.",

"that would make it easier for us to make plans."

],

"responses": [

"the forecast says that it will be warm on the weekend.",

"it sounds like it will be.",

"i know what you mean, i can't wait until it's winter.",

"winter is great. i wish it didn't get so cold sometimes though.",

"i would rather deal with the winter than the summer.",

"i know. every day the weather seems different.",

"this california weather is so uncertain, it's impossible to know what'll happen.",

"i know. every day the weather seems different.",

"i would love it if it wasn't always so unpredictable.",

"that would make it easier for us to make plans.",

"i hope that it does rain.",

"i understand. rain does make it smell cleaner.",

"i hope that it does rain.",

"i understand. rain does make it smell cleaner.",

"i really want to go to the beach this weekend.",

"you're right. one minute it's hot, and then the next minute it's cold.",

"i really wish the weather would just stay the same.",

"yeah, that would make things a lot easier.",

"i hope that it does rain.",

"i understand. rain does make it smell cleaner.",

"i hope that it does rain.",

"i understand. rain does make it smell cleaner.",

"i really want to go to the beach this weekend.",

"i hope that it does rain.",

"i understand. rain does make it smell cleaner.",

"i hope that it does rain.",

"i understand. rain does make it smell cleaner.",

"i'll see you tomorrow then.",

"i'll see you tomorrow then.",

"until then.",

"until then."

]

},

{

"tag": "social\_call",

"patterns": [

"hello, may i speak to alice please?",

"hi, how are you. is alice there?",

"hi, how are you. is alice there?",

"hello, may i speak to alice please?",

"have you seen the new girl in school?",

"hello, may i speak to alice please?",

"hi, how are you. is alice there?",

"have you seen the new girl in school?"

],

"responses": [

"i've been trying to call you all day.",

"my bad, i had chores to do.",

"what was the reason for your call?",

"sounds good. what did you have in mind?",

"i was thinking about seeing a movie.",

"i'll see you tomorrow then.",

"i may know which girl you're talking about.",

"she has pretty light brown eyes.",

"i really want this trip to be perfect, i hope it stays warm.",

"that would ruin things, i want to go so badly.",

"i hope it's good beach weather.",

"i would love it if it wasn't always so unpredictable.",

"i may know which girl you're talking about.",

"she has pretty light brown eyes.",

"i really want this trip to be perfect, i hope it stays warm.",

"that would ruin things, i want to go so badly.",

"i hope it's good beach weather.",

"call me tomorrow then."

]

},

{

"tag": "new\_girl\_school",

"patterns": [

"so you have seen her around?",

"there's a new girl in school, have you seen her yet?",

"have you met the new girl?",

"have you seen her?",

"who's the new girl in school?",

"did you see the new girl?",

"have you noticed the new girl?",

"have you seen the new student?",

"did you see the new girl at school?",

"have you seen her around the school?",

"have you seen her around?",

"have you seen the new student?",

"have you seen the new girl at our school?",

"have you met the new girl at school?",

"did you notice the new girl?",

"have you seen the new girl?"

],

"responses": [

"yes, i have.",

"i haven't seen her yet.",

"i believe so.",

"i think i might've bumped into her before.",

"i may know which girl you're talking about.",

"i may know which girl you're talking about.",

"i haven't seen her yet.",

"i may know which girl you're talking about.",

"i haven't seen her yet.",

"i may know which girl you're talking about.",

"i think i might've bumped into her before.",

"i haven't seen her yet.",

"i haven't seen her yet.",

"i believe so.",

"i think i might've bumped into her before.",

"i haven't seen her yet."

]

},

{

"tag": "health\_school",

"patterns": [

"why weren't you at school yesterday?",

"why didn't you go to school yesterday?",

"what reason do you have for missing school?",

"why weren't you at school?",

"why didn't you go to school?",

"what's the reason you weren't at school?",

"what's the reason you didn't go to school?",

"why did you miss school?",

"why were you absent from school?",

"what made you miss school?",

"why weren't you at school today?",

"why didn't you go to school today?"

],

"responses": [

"i wasn't really feeling well.",

"my stomach was upset.",

"i'm still feeling under the weather.",

"i wasn't feeling well.",

"my stomach was bothering me.",

"i'm still feeling a little sick.",

"i wasn't feeling well.",

"my stomach was upset.",

"i'm still feeling under the weather.",

"i wasn't feeling well.",

"my stomach was bothering me.",

"i'm still feeling a little sick.",

"i wasn't feeling well.",

"my stomach was bothering me.",

"i'm still feeling a little sick.",

"i wasn't feeling well."

]

},

{

"tag": "congratulations",

"patterns": [

"did you hear the good news?",

"have you heard my good news?",

"i got a promotion at my job.",

"i got promoted at work.",

"i got a promotion.",

"i got promoted.",

"i got a promotion at work earlier this week.",

"i got promoted at work earlier this week.",

"i got a promotion at work the other day.",

"i got promoted at work the other day."

],

"responses": [

"seriously, i am so excited.",

"i'm serious. you deserved this promotion.",

"thank you very much.",

"that's great. congratulations.",

"i appreciate that.",

"i'm serious. you deserved this promotion.",

"thank you very much.",

"that's great. congratulations.",

"i appreciate that.",

"i'm serious. you deserved this promotion.",

"thank you very much.",

"that's great. congratulations.",

"i appreciate that.",

"i'm serious. you deserved this promotion.",

"thank you very much.",

"that's great. congratulations."

]

},

{

"tag": "compliment\_outfit",

"patterns": [

"you look really nice today.",

"i absolutely love what you're wearing today.",

"i really like what you're wearing today.",

"you look great today.",

"your outfit looks fantastic.",

"you look amazing today.",

"you look fantastic today.",

"i love your outfit today.",

"your outfit is really nice today.",

"your outfit looks great today.",

"you look nice today.",

"you look amazing today.",

"you look fantastic today.",

"i love your outfit today.",

"your outfit is really nice today.",

"your outfit looks great today."

],

"responses": [

"thank you. i just got this outfit the other day.",

"thanks again. you look nice today, too.",

"thank you. i just bought these new shoes earlier today.",

"thanks. i think you look nice today, too.",

"thank you. i just got this outfit the other day.",

"thanks again. you look nice today, too.",

"thank you. i just bought these new shoes earlier today.",

"thanks. i think you look nice today, too.",

"thank you. i just got this outfit the other day.",

"thanks again. you look nice today, too.",

"thank you. i just bought these new shoes earlier today.",

"thanks. i think you look nice today, too.",

"thank you. i just got this outfit the other day.",

"thanks again. you look nice today, too.",

"thank you. i just bought these new shoes earlier today.",

"thanks. i think you look nice today, too."

]

},

{

"tag": "hobbies",

"patterns": [

"tell me, what do you enjoy doing in your spare time?",

"what are your hobbies?",

"what do you like to do for fun?",

"what activities do you enjoy?",

"what do you do in your free time?",

"how do you spend your leisure time?",

"what are your favorite hobbies?",

"what are some things you like to do for fun?",

"what are your interests?",

"what are you passionate about?",

"what do you like doing when you're not working?",

"what do you like to do outside of work?",

"what are your preferred pastimes?"

],

"responses": [

"i enjoy drawing and painting.",

"i like to read books and listen to music.",

"i'm a big fan of hiking and outdoor activities.",

"i enjoy playing musical instruments and writing songs.",

"i like playing video games and watching movies.",

"i'm interested in photography and exploring new places.",

"i enjoy cooking and experimenting with new recipes.",

"i like gardening and taking care of plants.",

"i'm passionate about fitness and working out.",

"i enjoy practicing yoga and meditation.",

"i like to go cycling and stay active.",

"i'm into arts and crafts, creating things with my hands.",

"i enjoy going to art exhibitions and museums.",

"i'm interested in learning new languages.",

"i like attending live music concerts and events.",

"i enjoy dancing and attending dance classes."

]

},

{

"tag": "basketball\_game",

"patterns": [

"did you go to the basketball game on friday?",

"were you able to attend friday night's basketball game?",

"i was meaning to ask you if you saw the basketball game on friday.",

"i wanted to go, but i couldn't.",

"it's too bad that i couldn't make it. who won?",

"i really wish i went to the game."

],

"responses": [

"no, i couldn't make it.",

"you missed a really good game.",

"i was unable to make it.",

"you should have been there. it was intense.",

"it's too bad that i couldn't make it. who won?",

"i really wish i went to the game.",

"our school did. they played really well.",

"too bad i was busy. i really wanted to go.",

"yeah, you should have. it was really exciting.",

"our team was victorious.",

"it was a great game.",

"the other team lost by three points, 101-98.",

"it really was. you should've gone."

]

},

{

"tag": "favorite\_music",

"patterns": [

"what type of music do you like to listen to?",

"what kinds of things do you like to do?",

"what kind of music do you enjoy listening to?",

"what is your favorite kind of music?",

"what genres?",

"what do you like doing when you're not working?",

"what are your preferred pastimes?"

],

"responses": [

"i like listening to different kinds of music.",

"i enjoy rock and r&b.",

"i enjoy listening to both rock and r&b.",

"i enjoy listening to all kinds of music.",

"i like to listen to rock and r&b.",

"i enjoy the different types of instruments that they use."

]

},

{

"tag": "favorite\_movie",

"patterns": [

"what's your favorite movie?",

"which movie is your favorite to watch?",

"out of every movie that you've seen, which one is your favorite?"

],

"responses": [

"my favorite movie is superbad.",

"i have to say, my favorite movie is superbad.",

"i'm going to have to say that superbad is the best movie ever."

]

},

{

"tag": "hobbies",

"patterns": [

"what kinds of things do you like to do?",

"what are your hobbies?",

"what do you like to do for fun?",

"what activities do you enjoy?",

"what do you do in your free time?",

"how do you spend your leisure time?",

"what are your favorite hobbies?",

"what are some things you like to do for fun?",

"what are your interests?",

"what are you passionate about?"

],

"responses": [

"i've always liked to draw and paint.",

"when i have time, i sometimes draw and paint.",

"i enjoy drawing and painting.",

"i enjoy drawing and painting.",

"i enjoy drawing and painting.",

"i enjoy drawing and painting."

]

},

{

"tag": "weekend\_plans",

"patterns": [

"what are you doing this weekend?",

"do you know what you're going to do this weekend?",

"you have any ideas as to what you want to do this weekend?"

],

"responses": [

"i'm not sure yet.",

"well, did you want to go see a movie with me?",

"i don't know.",

"would you like to see a movie with me and my friend?"

]

},

{

"tag": "movie\_plans",

"patterns": [

"i'm going to the movies with a friend. how about you?",

"i am going to see a movie with a friend of mine. what about you?",

"you know what you're going to do this weekend?",

"i'm going to the movie theater with my friend. what are you going to do?"

],

"responses": [

"i'm not sure yet. is there something you want to see?",

"no, thanks, maybe another time.",

"thank you for inviting me, but i think i'll pass.",

"all right. another time then."

]

},

{

"tag": "school\_attendance",

"patterns": [

"did you go to school today?",

"have you attended school today?"

],

"responses": [

"no, i didn't go, i've been sick.",

"i'm sorry to hear that. would you like the assignments from english class?",

"i would really appreciate that, thanks.",

"thanks. see you at school tomorrow if you feel better."

]

},

{

"tag": "school\_attendance",

"patterns": [

"did you go to school today?",

"did you make it to school today?",

"did you even bother to go to school today?"

],

"responses": [

"yeah, i went.",

"of course. did you?",

"i always do.",

"yeah, i went. did you go?"

]

},

{

"tag": "movie\_plans",

"patterns": [

"did you see any movies lately?",

"have you been to the movies recently?",

"i want to go to see a movie this weekend.",

"i would love to catch a movie this weekend."

],

"responses": [

"no, not recently.",

"i haven't lately.",

"no, i haven't. why?",

"i don't want to see a movie by myself.",

"i would love to catch a movie this weekend."

]

},

{

"tag": "family\_news",

"patterns": [

"did you hear the news?",

"have you heard what happened?",

"have you heard the news?"

],

"responses": [

"debrah already had her baby.",

"our cousin went into labor and had her baby last week.",

"debrah had her baby last week."

]

},

{

"tag": "visit",

"patterns": [

"thanks for coming to see me today.",

"i'm really glad that you came to see me.",

"i'm really happy that you came to visit me."

],

"responses": [

"i missed you too.",

"so, why haven't you visited me?",

"i would've come to see you sooner, but i've been busy too.",

"i am too.",

"i am too.",

"i am too.",

"i've been missing you like crazy.",

"so am i.",

"so am i."

]

},

{

"tag": "party\_invitation",

"patterns": [

"hey, did you hear about jessica's party this weekend?",

"have you heard about jessica's party on saturday?",

"have you heard about jessica's party coming up?",

"what's going on with you?",

"what's going on?",

"what's happening?",

"what's good with you?"

],

"responses": [

"yeah, but i'm still waiting for my invitation.",

"really? she gave me mine earlier today.",

"i'm guessing that she's going to give me my invite today or tomorrow.",

"i think so. it sounds like it's going to be a lot of fun.",

"i wanted to see if you wanted to come.",

"i'm throwing a party on friday.",

"i'm having a party this friday.",

"i'm having a party next saturday.",

"next saturday, i'm going to have a party.",

"i'm throwing a party on friday."

]

},

{

"tag": "movie\_plans",

"patterns": [

"have you been to the movies lately?",

"have you seen any movies lately?",

"have you gone to the movies recently?",

"have you been to the movies recently?",

"have you gone to see a movie recently?",

"have you seen a movie recently?",

"have you gone to see a movie lately?",

"have you seen a movie lately?",

"have you gone to see a movie this weekend?",

"have you seen a movie this weekend?",

"have you gone to the movies this weekend?",

"have you seen a movie this weekend?"

],

"responses": [

"no, not recently.",

"i haven't lately.",

"no, i haven't. why?",

"i don't want to see a movie by myself.",

"i would love to catch a movie this weekend.",

"i've been missing you like crazy.",

"i haven't lately.",

"i don't really want to.",

"i don't feel like going.",

"i really can't stand going to parties.",

"i am very sorry, but i must go.",

"i have to do some things, and besides, it's not polite to be nosey.",

"i'm sorry, but i have to go.",

"i'm not being nosey. it's just a question.",

"maybe we should learn some good jokes."

]

},

{

"tag": "dog",

"patterns": [

"what kind of dog do you have?",

"poodles bark a lot.",

"poodles never shut up.",

"why did you get a poodle?",

"poodles bark at everything.",

"do you have a dog?",

"i have to walk the dog.",

"poodles are annoying.",

"where's your dog?",

"what's your dog's name?",

"what breed is your dog?",

"tell me about your dog."

],

"responses": [

"i have a little poodle.",

"it's my mom's dog.",

"she says they're good watchdogs.",

"they sure do.",

"it's my mom's dog.",

"poodles bark a lot.",

"they bark at everything.",

"i have to walk the dog."

]

},

{

"tag": "finances",

"patterns": [

"can i borrow $5?",

"where's your money?",

"your wallet is empty?",

"where do you live?",

"what kind of car do you have?",

"do you have a car?",

"are you married?",

"do you have a girlfriend?",

"have you been divorced?",

"do you take good care of it?",

"do you change the oil?",

"what time?",

"where is pasadena?",

"how big is pasadena?",

"how big is los angeles?"

],

"responses": [

"sure. why do you need it?",

"i want to buy lunch.",

"it's not in my wallet.",

"it has about 140,000 people.",

"i have a honda.",

"yes, i do.",

"no. i'm divorced.",

"i don't have a girlfriend, either.",

"i got divorced two years ago.",

"i wash it once a week.",

"my mechanic changes the oil twice a year.",

"it starts at 8 o'clock.",

"it's in california.",

"it's pretty big.",

"it has about 3 million people."

]

},

{

"tag": "goodbyes",

"patterns": [

"i enjoyed talking to you.",

"let's go to the beach.",

"i'm bored.",

"where are you going?",

"i'll talk to you later.",

"well, it was nice talking to you.",

"i'll call you later.",

"talk to you then.",

"see you soon.",

"goodbye."

],

"responses": [

"i enjoyed talking to you too.",

"that's a great idea.",

"where's your money?",

"i have to walk the dog.",

"i'll call you so we can set that up.",

"yes, it was.",

"that's a great idea.",

"being broke is no fun.",

"i'll make sure and come to your next party.",

"all right, see you."

]

},

{

"tag": "tv\_program",

"patterns": [

"what's on tv?",

"what's on tv?",

"there must be something on tv!",

"there must be something on tv!",

"what about that new game show?",

"what about that new game show?",

"tell me you're joking.",

"tell me you're joking.",

"i love that show.",

"i love that show.",

"i watched it once. that was enough.",

"i watched it once. that was enough.",

"it's on right now. let's watch it together."

],

"responses": [

"nothing.",

"nothing.",

"nothing that's interesting.",

"nothing that's interesting.",

"which one?",

"which one?",

"\"deal or no deal\"",

"\"deal or no deal\"",

"i think we have different tastes in TV shows.",

"i think we have different tastes in TV shows.",

"it's not really my thing, but I'm glad you enjoy it.",

"it's not really my thing, but I'm glad you enjoy it.",

"I'd rather do something else, but thanks for the offer."

]

},

{

"tag": "city\_living",

"patterns": [

"i like living here.",

"i like living here.",

"i agree. pasadena is a nice city.",

"i agree. pasadena is a nice city.",

"it's not too big.",

"it's not too big.",

"and it's not too small.",

"and it's not too small.",

"it has great weather all year long.",

"it has great weather all year long.",

"it has the rose parade.",

"it has the rose parade.",

"it has beautiful houses.",

"it has beautiful houses.",

"it has wonderful restaurants.",

"it has wonderful restaurants.",

"it has great schools.",

"it has great schools.",

"it's close to the mountains.",

"it's close to the mountains.",

"the people are friendly.",

"the people are friendly.",

"i'm not ever going to leave.",

"i'm not ever going to leave."

],

"responses": [

"I'm glad you enjoy living in Pasadena.",

"It's great to appreciate where you live!",

"Pasadena is indeed a charming city.",

"The weather here is quite pleasant.",

"The Rose Parade is a wonderful tradition.",

"Those old houses have a unique charm.",

"The local restaurants offer a variety of cuisines.",

"Having good schools nearby is a plus.",

"The proximity to mountains is fantastic.",

"Building a sense of community is important!"

]

},

{

"tag": "home\_needs",

"patterns": [

"we need a new mattress.",

"we need a new mattress.",

"what's the matter with this one?",

"what's the matter with this one?",

"it's not comfortable.",

"it's not comfortable.",

"it seems fine to me.",

"it seems fine to me.",

"i toss and turn all night.",

"i toss and turn all night.",

"you should stop drinking coffee.",

"you should stop drinking coffee.",

"look at these marks on my arms.",

"look at these marks on my arms.",

"what are they?",

"what are they?",

"they are bites.",

"they are bites.",

"did the cat bite you?",

"did the cat bite you?",

"no. the bedbugs in that mattress bit me.",

"no. the bedbugs in that mattress bit me.",

"okay. let's get a new mattress.",

"okay. let's get a new mattress."

],

"responses": [

"A new mattress could definitely improve your sleep.",

"Comfort is important for a good night's rest.",

"Investing in a good mattress is worth it.",

"Bedbugs are a serious issue; a new mattress is a good idea.",

"Choosing the right mattress can make a big difference.",

"Shopping for a comfortable mattress is a good plan!",

"Improving your sleep environment is a great idea.",

"Consider investing in a quality mattress.",

"A good mattress is essential for good sleep quality."

]

},

{

"tag": "technology\_issues",

"patterns": [

"my laptop is so slow.",

"my laptop is so slow.",

"buy a new one.",

"buy a new one.",

"i would if i had the money.",

"i would if i had the money.",

"why is it so slow?",

"why is it so slow?",

"that's a good question.",

"that's a good question.",

"did you take it to a computer shop?",

"did you take it to a computer shop?",

"i would if i had the money.",

"i would if i had the money.",

"well, i guess you have to live with it.",

"well, i guess you have to live with it.",

"sometimes i want to throw it out the window.",

"sometimes i want to throw it out the window.",

"you don't want to do that.",

"you don't want to do that.",

"why not?",

"why not?",

"you might hit someone in the head.",

"you might hit someone in the head."

],

"responses": [

"Laptops can slow down over time due to various reasons.",

"Consider checking for any malware or software issues.",

"Maybe some software cleanup could help speed it up.",

"Upgrading the RAM might improve its performance.",

"You could consider optimizing your laptop's performance.",

"There are ways to improve laptop speed without buying a new one.",

"Taking care of your laptop's storage can also help.",

"Regular maintenance can extend the lifespan of your laptop."

]

},

{

"tag": "dinner\_plans",

"patterns": [

"what's for dinner?",

"what's for dinner?",

"how about a pizza?",

"how about a pizza?",

"you had pizza for lunch.",

"you had pizza for lunch.",

"but i love pizza.",

"but i love pizza.",

"everybody loves pizza.",

"everybody loves pizza.",

"so why can't i have pizza for dinner?",

"so why can't i have pizza for dinner?",

"because you need variety.",

"because you need variety.",

"what's \"variety?",

"what's \"variety?",

"you mean, like a pepperoni pizza instead of a cheese pizza?",

"you mean, like a pepperoni pizza instead of a cheese pizza?",

"no, i mean a salad instead of a pizza.",

"no, i mean a salad instead of a pizza."

],

"responses": [

"Variety in meals is important for a balanced diet.",

"Mixing up your meals is good for your health.",

"How about trying a new recipe for dinner?",

"A variety of food options keeps things interesting.",

"Balancing your meals with different foods is a good idea.",

"You could explore some healthy dinner options.",

"Ever tried making a homemade dinner with a new recipe?",

"Salads can be delicious and healthy dinner options.",

"Experimenting with dinner recipes can be fun and tasty."

]

},

{

"tag": "saving\_for\_goal",

"patterns": [

"we need to save money.",

"we need to save money.",

"why do we need to save money?",

"why do we need to save money?",

"because we need to buy a house.",

"because we need to buy a house.",

"but a house is so expensive.",

"but a house is so expensive.",

"that's why we need to save money.",

"that's why we need to save money.",

"how much do we need to save?",

"how much do we need to save?",

"we need to save enough for a down payment.",

"we need to save enough for a down payment.",

"how much is that?",

"how much is that?",

"that's about $30,000.",

"that's about $30,000.",

"thirty thousand dollars! that will take forever.",

"thirty thousand dollars! that will take forever.",

"not if we save every penny.",

"not if we save every penny.",

"okay. here's seven pennies.",

"okay. here's seven pennies."

],

"responses": [

"Saving for a house is a great financial goal!",

"Buying a house is a big step towards stability.",

"It's important to plan for major expenses like a house.",

"Saving diligently can help achieve your dream of a new home.",

"Small savings can add up over time.",

"Being disciplined with savings will pay off in the long run.",

"Every penny saved brings you closer to your goal.",

"It's about making consistent efforts towards your dreams."

]

},

{

"tag": "ocean\_appreciation",

"patterns": [

"the ocean is so big.",

"the ocean is so big.",

"you can't see the end of it.",

"you can't see the end of it.",

"it goes on and on forever.",

"it goes on and on forever.",

"and it's deep, too.",

"and it's deep, too.",

"i think it's five miles deep.",

"i think it's five miles deep."

],

"responses": [

"The ocean is a vast and mysterious part of our planet.",

"The depths of the ocean are astounding.",

"It's amazing to think about the enormity of the ocean.",

"The ocean holds many secrets in its depths.",

"Exploring the ocean is a fascinating adventure."

]

},

{

"tag": "ocean\_questions",

"patterns": [

"are there fish at the bottom?",

"are there fish at the bottom?",

"are there more fish or more people?",

"are there more fish or more people?",

"i think there are more fish.",

"i think there are more fish.",

"i hope so. i love to eat fish."

],

"responses": [

"There are fish at the top and the bottom."

]

},

{

"tag": "family\_issues",

"patterns": [

"i'm upset with my mom.",

"i'm upset with my mom.",

"why is that?",

"why is that?",

"what happened?",

"what happened?",

"that was very nice of you.",

"that was very nice of you.",

"why did she do that?",

"why did she do that?",

"what's wrong with that?",

"what's wrong with that?",

"i hope your mom broke up with him."

],

"responses": [

"Communication with family can be difficult sometimes.",

"It's important to express your concerns to your mom.",

"Trust and understanding are crucial in relationships.",

"Sometimes, people make choices we don't agree with.",

"Let's hope everything works out for the best.",

"Supporting family members is important, even if it's challenging."

]

},

{

"tag": "animal\_communication",

"patterns": [

"do animals talk to each other?",

"do animals talk to each other?",

"what do they talk about?",

"what do they talk about?",

"what else do they talk about?",

"what else do they talk about?",

"do they talk about us?",

"do they talk about us?",

"what do they say about us?",

"what do they say about us?",

"ha! we're not funny-looking; animals are funny-looking.",

"ha! we're not funny-looking; animals are funny-looking.",

"we're funny-looking because we wear clothes."

],

"responses": [

"Animals communicate with each other using various means.",

"Their communication often involves topics like food, weather, and other animals.",

"Observing animal behavior can provide fascinating insights into their communication.",

"It's intriguing to think about the conversations animals might have.",

"Each animal species likely has its own way of communication."

]

},

{

"tag": "housekeeping",

"patterns": [

"i have to clean the house.",

"i have to clean the house.",

"yes, it's very dirty.",

"yes, it's very dirty.",

"you can help me.",

"you can help me.",

"why me?",

"why me?",

"what do you want me to do?",

"what do you want me to do?",

"that's a lot of work.",

"that's a lot of work.",

"tell me when you finish.",

"tell me when you finish.",

"i don't think so. you'll just give me more work."

],

"responses": [

"Cleaning and organizing can be a satisfying task.",

"It's important to maintain a clean living space.",

"Dividing chores can make the task easier and quicker.",

"You'll feel accomplished after completing the cleaning.",

"A clean environment contributes to a clear mind."

]

},

{

"tag": "tv\_obsession",

"patterns": [

"you're watching too much tv.",

"you're watching too much tv.",

"what do you mean?",

"what do you mean?",

"i'm having fun.",

"i'm having fun.",

"who cares?",

"who cares?",

"i care. do something.",

"i care. do something?",

"i turned up the volume.",

"i turned up the volume.",

"that's not what i meant by \"do something.\"",

"that's not what i meant by \"do something.\"",

"will you do something? leave me alone."

],

"responses": [

"Balancing TV time with other activities is important.",

"There's a whole world beyond the TV screen to explore.",

"Engaging in a variety of activities can enhance your overall well-being.",

"Spending time outdoors or with friends can be refreshing.",

"Finding a balance in entertainment is essential for a fulfilling life."

]

},

{

"tag": "grandma\_letter",

"patterns": [

"did you write a letter to grandma?",

"did you write a letter to grandma?",

"did you tell her about school?",

"did you tell her about school?",

"did you put the letter in an envelope?",

"did you put the letter in an envelope?",

"did you put a stamp on the envelope?",

"did you put a stamp on the envelope?",

"they're in the kitchen drawer.",

"they're in the kitchen drawer.",

"okay. i just put a stamp on the envelope.",

"okay. i just put a stamp on the envelope.",

"give me the envelope, and i'll mail it for you.",

"give me the envelope, and i'll mail it for you.",

"when is grandma going to learn about e-mail?",

"when is grandma going to learn about e-mail?"

],

"responses": [

"Sending a letter to grandma is a lovely gesture.",

"Grandma will be thrilled to hear from you.",

"Mailing a letter is a classic and thoughtful way to communicate.",

"Stamps are necessary for sending letters via mail.",

"Technology is advancing, but some people still prefer traditional mail."

]

},

{

"tag": "blowing\_nose",

"patterns": [

"What was that noise?",

"Did you have to blow right next to the phone?",

"Did you hear that?",

"Of course I heard that. I thought a plane had crashed into your house.",

"It wasn't that loud.",

"I will blow my nose sometime for you, and you'll see.",

"Okay. I'll take your word for it.",

"I thought you had an elephant in your house.",

"You're funny.",

"What did you say? I think I've gone deaf."

],

"responses": [

"I had to blow my nose.",

"I'm going into the bathroom to blow my nose. I'll be right back."

]

},

{

"tag": "friends",

"patterns": [

"I have lots of friends.",

"Really? How many do you have?",

"That is a lot of friends. Do you have a best friend?",

"How many best friends do you have?",

"Do you have a best friend?",

"I have only one best friend.",

"I feel sorry for you.",

"I have only a few friends.",

"You must be lonely. I will share my friends with you.",

"That's very nice of you."

],

"responses": [

"Of course. I have lots of best friends.",

"I think about twenty-five.",

"I'm sorry, I can't really have friends as I'm a computer program, but I'm here to chat with you!"

]

},

{

"tag": "going\_outside",

"patterns": [

"I hate to go outside.",

"Me too.",

"Why do you hate to go outside?",

"I meet too many jerks.",

"This city is full of jerks.",

"Rude people are everywhere.",

"But what can you do?",

"You can yell at them.",

"And they will yell back at you.",

"Yelling doesn't do any good.",

"No. The best thing to do is just stay home."

],

"responses": [

"I agree."

]

},

{

"tag": "blow\_nose",

"patterns": [

"I'm going to the bathroom to blow my nose. I'll be right back."

],

"responses": [

"Okay, take your time."

]

},

{

"tag": "cheating",

"patterns": [

"Don't you ever cheat on me.",

"Why would I do that?",

"Because men like to cheat.",

"Some men do, but not me.",

"I'm watching you.",

"I don't want any other woman.",

"I will poke your eyes out.",

"Honey, please. You're the only woman for me, forever. I swear it."

],

"responses": [

"You won't catch me, because I love you. I'm not a cheater."

]

},

{

"tag": "loneliness",

"patterns": [

"I have only a few friends.",

"You must be lonely. I will share my friends with you.",

"That's very nice of you.",

"I feel sorry for you."

],

"responses": [

"You're funny.",

"I'm here to keep you company. We can chat anytime you want."

]

},

{

"tag": "going\_shopping",

"patterns": [

"I have to go shopping today.",

"You'd better take an umbrella."

],

"responses": [

"I will blow my nose sometime for you, and you'll see.",

"Okay. I'll take your word for it."

]

},

{

"tag": "funny",

"patterns": [

"You're funny."

],

"responses": [

"What did you say? I think I've gone deaf."

]

},

{

"tag": "college",

"patterns": [

"Do you go to college?",

"What college do you go to?",

"Do you like it?"

],

"responses": [

"Yes, I do.",

"I go to Pasadena City College.",

"Of course! It's all over the news."

]

},

{

"tag": "greeting",

"pattern": ["hello", "hi", "hey"],

"response": "Hello! How can I assist you today?"

},

{

"tag": "goodbye",

"pattern": ["bye", "goodbye", "see you later"],

"response": "Goodbye! Have a great day."

},

{

"tag": "ask\_about\_day",

"pattern": ["How are you?", "How's your day?", "How have you been?"],

"response": "I'm just a computer program, but I'm here to help you!"

},

{

"tag": "thanks",

"pattern": ["thank you", "thanks", "appreciate it"],

"response": "You're welcome! If you have more questions, feel free to ask."

},

{

"tag": "blowing\_nose",

"pattern": ["I had to blow my nose.", "Did you hear that?", "I'm going into the bathroom to blow my nose. I'll be right back."],

"response": "Alright, take your time. If you need assistance later, just let me know."

},

{

"tag": "friends",

"pattern": ["I have lots of friends.", "How many best friends do you have?", "I think about twenty-five."],

"response": "Having a good circle of friends is wonderful. Quality over quantity, right?"

},

{

"tag": "cheating",

"pattern": ["Don't you ever cheat on me.", "I don't want any other woman.", "You're the only woman for me, forever. I swear it."],

"response": "I'm here to support and chat. No cheating involved!"

},

{

"tag": "hate\_going\_outside",

"pattern": ["I hate to go outside.", "This city is full of jerks.", "The city is full of jerks."],

"response": "Sometimes dealing with rude people can be challenging. How about finding some peaceful spots?"

},

{

"tag": "form\_help",

"pattern": ["Let me help you.", "What does 'mi' mean?", "What does 'mm/dd/yy' mean?"],

"response": "I'll assist you with understanding the form. 'Mi' means middle initial, and 'mm/dd/yy' is the format for month/day/year using numbers."

},

{

"tag": "animal\_shelter",

"pattern": ["Let's go to the animal shelter.", "I want to get a puppy for my son.", "I'll get him one of those little dogs."],

"response": "Adopting a puppy can be a wonderful experience. They bring so much joy and love to a family."

},

{

"tag": "weather",

"pattern": ["What's the weather like?", "It looks like rain.", "Why do you say that?"],

"response": "Checking the weather is a good idea. It helps you plan your day accordingly."

},

{

"tag": "shopping",

"pattern": ["I have to go shopping today.", "You'd better take an umbrella.", "I can't believe how hot it is."],

"response": "Shopping on a hot day can be exhausting. Don't forget to stay hydrated and take breaks!"

},

{

"tag": "art",

"pattern": ["People are funny.", "I saw a painting of a jar that was full of pencils.", "Did he ever take art lessons?"],

"response": "Art is a fascinating form of expression. Some artists have unique perspectives and interpretations."

},

{

"tag": "long\_distance\_service",

"pattern": ["I don't have long-distance service with my home phone.", "I use a calling card.", "How much is it?"],

"response": "Using a calling card is a smart way to manage long-distance calls cost-effectively."

},

{

"tag": "college",

"pattern": ["Do you go to college?", "What college do you go to?", "Do you like it?"],

"response": "I'm not a human, so I don't attend college. However, I'm here to help you with any questions you have about college!"

},

{

"tag": "dating",

"patterns": [

"I have a date tonight.",

"I'm nervous about my date.",

"What should I wear on my date?"

],

"responses": ["It's normal to feel nervous before a date. Just be yourself and wear something that makes you feel confident."]

},

{

"tag": "cooking",

"patterns": [

"I'm making spaghetti for dinner.",

"What's a good recipe for chicken stir-fry?",

"How long do you boil eggs for?"

],

"responses": ["Cooking can be fun! For spaghetti, make sure to boil the pasta until al dente. For chicken stir-fry, a mix of veggies and a good sauce can make it delicious. Eggs usually need about 7-10 minutes to boil."]

},

{

"tag": "travel",

"patterns": [

"I'm planning a trip to Paris.",

"Have you been"

],

"responses": ["Traveling can be a great adventure! Paris has so much to offer. Make sure to visit the Eiffel Tower and Louvre Museum."]

},

{

"tag": "dating",

"patterns": [

"Tell me some dating tips.",

"What are good conversation starters for a date?",

"How can I make a good first impression on a date?"

],

"responses": [

"Dating can be exciting! Start with a genuine compliment to break the ice. Be yourself and ask open-ended questions to keep the conversation flowing."

]

},

{

"tag": "tv\_shows",

"patterns": [

"Recommend some popular TV shows.",

"What's a good series to binge-watch?",

"Tell me about the latest episodes of 'Stranger Things'."

],

"responses": [

"There are many great TV shows out there! Some popular ones include 'Game of Thrones', 'Breaking Bad', and 'Stranger Things'. Check them out for some entertainment!"

]

},

{

"tag": "sports",

"patterns": [

"What's the latest sports news?",

"Tell me about the upcoming football games.",

"Who won the last NBA championship?"

],

"responses": [

"Sports are thrilling! The NBA championship was won by the Milwaukee Bucks. For the latest updates, follow reputable sports news outlets."

]

},

{

"tag": "blowing\_nose",

"patterns": [

"I had to blow my nose.",

"Did you have to blow right next to the phone?",

"Did you hear that?"

],

"responses": [

"I had to blow my nose. I'll be right back.",

"I thought a plane had crashed into your house.",

"You're funny!"

]

},

{

"tag": "friendship",

"patterns": [

"I have lots of friends.",

"Do you have a best friend?",

"How many best friends do you have?"

],

"responses": [

"I have lots of best friends.",

"I think about twenty-five.",

"I have only one best friend.",

"I feel sorry for you."

]

},

{

"tag": "cheating",

"patterns": [

"Don't you ever cheat on me.",

"I don't want any other woman.",

"You won't catch me, because I love you. I'm not a cheater."

],

"responses": [

"I'm an open book. Watch me all you want.",

"I don't want any other woman. You're the only woman for me, forever. I swear it."

]

},

{

"tag": "outdoor\_dislike",

"patterns": [

"I hate to go outside.",

"You must be lonely. I will share my friends with you.",

"Yelling doesn't do any good.",

"The city is full of jerks."

],

"responses": [

"You're funny.",

"What did you say? I think I've gone deaf.",

"I will poke your eyes out.",

"I thought you had an elephant in your house."

]

},

{

"tag": "learning\_language",

"patterns": [

"You speak two languages.",

"How long will it take me to learn?",

"How soon can we begin?"

],

"responses": [

"Spanish is easy. I'll be happy to teach you.",

"It's a great idea to learn a new language!",

"Learning a new language can be a rewarding experience."

]

},

{

"tag": "work\_from\_home",

"patterns": [

"I work from home.",

"Working remotely is great.",

"I love the flexibility of working from home."

],

"responses": [

"Working from home has its advantages.",

"It's nice to have the freedom to work from home.",

"Remote work allows for a better work-life balance."

]

},

{

"tag": "favorite\_music\_genre",

"patterns": [

"I love listening to jazz.",

"My favorite music genre is rock.",

"Classical music is my go-to choice."

],

"responses": [

"Jazz is such a soothing genre.",

"Rock music is full of energy and passion.",

"Classical music has a timeless beauty to it."

]

},

{

"tag": "morning\_person",

"patterns": [

"I'm a morning person.",

"Waking up early is refreshing.",

"Mornings are my most productive time."

],

"responses": [

"Early risers get a head start on the day!",

"Mornings can be so peaceful and serene.",

"Productivity often thrives in the morning hours."

]

},

{

"tag": "vacation\_preference",

"patterns": [

"I prefer beach vacations.",

"Mountain getaways are my favorite.",

"Exploring cities is my ideal vacation."

],

"responses": [

"Beach vacations are perfect for relaxation and fun in the sun.",

"The mountains offer a refreshing escape from the daily grind.",

"Exploring cities provides a rich cultural experience."

]

},

{

"tag": "cooking",

"patterns": [

"I enjoy cooking new recipes.",

"Cooking is a creative outlet for me.",

"I like experimenting with different ingredients."

],

"responses": [

"Cooking is a great way to express creativity in the kitchen.",

"Experimenting with ingredients can lead to delicious discoveries.",

"Preparing meals can be a satisfying and enjoyable activity."

]

},

{

"tag": "favorite\_movie\_genre",

"patterns": [

"I'm a fan of action movies.",

"Romantic comedies are my favorite.",

"I enjoy watching science fiction films."

],

"responses": [

"Action movies are adrenaline-pumping and exciting.",

"Romantic comedies bring a smile to my face.",

"Science fiction films spark my imagination."

]

},

{

"tag": "hobby",

"patterns": [

"I like painting in my free time.",

"Reading is a hobby I'm passionate about.",

"I enjoy hiking on the weekends."

],

"responses": [

"Painting is a wonderful way to express creativity.",

"Reading opens up new worlds and perspectives.",

"Hiking is a great way to connect with nature and stay active."

]

},

{

"tag": "pet\_preference",

"patterns": [

"I love dogs.",

"Cats are my favorite pets.",

"I prefer having birds as pets."

],

"responses": [

"Dogs are loyal companions and bring so much joy.",

"Cats have a unique charm and are independent.",

"Birds can be delightful and entertaining pets to have."

]

},

{

"tag": "travel\_experience",

"patterns": [

"I've traveled to multiple countries.",

"Traveling is a big part of my life.",

"I enjoy immersing myself in different cultures."

],

"responses": [

"Traveling broadens the mind and enriches experiences.",

"Experiencing different cultures is incredibly enriching.",

"Exploring new countries provides valuable perspectives."

]

},

{

"tag": "exercise\_routine",

"patterns": [

"I workout at the gym regularly.",

"Running is my preferred form of exercise.",

"I practice yoga for fitness."

],

"responses": [

"Regular exercise is essential for a healthy lifestyle.",

"Running is a great way to stay in shape and clear the mind.",

"Yoga offers a holistic approach to fitness and well-being."

]

},

{

"tag": "favorite\_book\_genre",

"patterns": [

"I love reading mystery novels.",

"Fantasy books are my go-to.",

"Thrillers are my favorite kind of books."

],

"responses": [

"Mystery novels keep you on the edge of your seat.",

"Fantasy books transport you to magical realms.",

"Thrillers provide an adrenaline-pumping reading experience."

]

},

{

"tag": "favorite\_music\_genre",

"patterns": [

"I enjoy listening to classical music.",

"Rock music is my jam.",

"Hip-hop and rap are my favorite genres."

],

"responses": [

"Classical music is timeless and beautiful.",

"Rock music has a raw and energetic vibe.",

"Hip-hop and rap have powerful rhythms and meaningful lyrics."

]

},

{

"tag": "favorite\_sports",

"patterns": [

"I'm a big fan of soccer.",

"Basketball is my favorite sport.",

"I enjoy watching and playing tennis."

],

"responses": [

"Soccer is the world's most popular sport and incredibly exciting.",

"Basketball is fast-paced and full of action.",

"Tennis is a graceful and strategic sport."

]

},

{

"tag": "technology\_interest",

"patterns": [

"I'm interested in artificial intelligence.",

"Virtual reality technology fascinates me.",

"I'm into coding and software development."

],

"responses": [

"Artificial intelligence is revolutionizing the way we interact with technology.",

"Virtual reality is opening up new realms of possibility.",

"Coding and software development are essential skills in today's digital age."

]

},

{

"tag": "cooking\_preference",

"patterns": [

"I love cooking Italian dishes.",

"Asian cuisine is my favorite to cook.",

"Baking is my passion in the kitchen."

],

"responses": [

"Italian dishes have rich flavors and are a delight to cook.",

"Asian cuisine offers a wide variety of flavors and cooking techniques.",

"Baking allows for creativity and produces delicious treats."

]

},

{

"tag": "travel\_interest",

"patterns": [

"I love traveling to new places.",

"Exploring different cultures is my passion.",

"I enjoy going on road trips and discovering new landscapes."

],

"responses": [

"Traveling broadens your horizons and enriches your life.",

"Experiencing diverse cultures is a fascinating adventure.",

"Road trips provide a sense of freedom and excitement."

]

},

{

"tag": "hobby",

"patterns": [

"Painting is my favorite hobby.",

"I enjoy gardening in my free time.",

"Cooking new recipes is a hobby I'm passionate about."

],

"responses": [

"Painting allows for self-expression and creativity.",

"Gardening is therapeutic and rewarding.",

"Trying out new recipes can be a delightful culinary adventure."

]

},

{

"tag": "favorite\_movie\_genre",

"patterns": [

"I love watching action movies.",

"Romantic comedies are my favorite.",

"Sci-fi films captivate my imagination."

],

"responses": [

"Action movies are thrilling and full of adrenaline.",

"Romantic comedies are heartwarming and enjoyable.",

"Sci-fi films take you on futuristic adventures."

]

},

{

"tag": "career\_aspiration",

"patterns": [

"I aspire to be a successful entrepreneur.",

"I dream of becoming a renowned scientist.",

"My goal is to be a skilled artist and make a living from it."

],

"responses": [

"Being an entrepreneur allows for innovation and growth.",

"Becoming a scientist means contributing to the advancement of knowledge.",

"Being an artist is fulfilling and allows for creative expression."

]

},

{

"tag": "favorite\_video\_game",

"patterns": [

"I'm a big fan of role-playing games (RPGs).",

"First-person shooters (FPS) are my favorite genre of video games.",

"I love playing strategy games."

],

"responses": [

"RPGs provide immersive storytelling and character development.",

"FPS games offer intense action and competition.",

"Strategy games challenge your intellect and planning skills."

]

},

{

"tag": "color\_preference",

"patterns": [

"I like the color blue.",

"My favorite color is green.",

"I prefer shades of purple."

],

"responses": [

"Blue is a calm and soothing color.",

"Green represents nature and tranquility.",

"Purple is associated with creativity and luxury."

]

},

{

"tag": "music\_genre",

"patterns": [

"I enjoy listening to classical music.",

"Rock music is my go-to genre.",

"I'm a fan of electronic dance music (EDM)."

],

"responses": [

"Classical music is timeless and elegant.",

"Rock music has a powerful and energetic vibe.",

"EDM is great for dancing and lifting your mood."

]

},

{

"tag": "book\_genre",

"patterns": [

"Mystery novels are my favorite.",

"I love reading science fiction books.",

"Romance novels are a go-to for me."

],

"responses": [

"Mystery novels keep you on the edge of your seat.",

"Science fiction books take you to new and exciting worlds.",

"Romance novels are heartwarming and full of emotions."

]

},

{

"tag": "fitness\_preference",

"patterns": [

"I enjoy yoga for staying fit.",

"Weightlifting is my preferred way to exercise.",

"I like to go for a run to keep in shape."

],

"responses": [

"Yoga improves flexibility and mindfulness.",

"Weightlifting helps build strength and muscle.",

"Running is a great cardiovascular workout."

]

},

{

"tag": "pet\_preference",

"patterns": [

"I love dogs as pets.",

"Cats are my favorite companions.",

"I'm a fan of exotic pets like reptiles."

],

"responses": [

"Dogs are loyal and loving companions.",

"Cats are independent and affectionate.",

"Exotic pets bring a unique charm and fascination."

]

},

{

"tag": "food\_preference",

"patterns": [

"I love Italian cuisine.",

"Sushi is my favorite.",

"Mexican food is a go-to for me."

],

"responses": [

"Italian cuisine is known for its rich flavors and variety.",

"Sushi is a delicate and delicious choice.",

"Mexican food offers bold and spicy flavors."

]

},

{

"tag": "travel\_destination",

"patterns": [

"I dream of visiting Paris.",

"Japan is at the top of my travel list.",

"I'd love to explore the beaches of Bali."

],

"responses": [

"Paris is known for its romantic atmosphere and iconic landmarks.",

"Japan offers a blend of traditional culture and modern technology.",

"Bali has stunning beaches and a vibrant cultural scene."

]

},

{

"tag": "movie\_preference",

"patterns": [

"I enjoy action movies.",

"Comedies always make me laugh.",

"Drama films captivate me."

],

"responses": [

"Action movies are thrilling and full of excitement.",

"Comedies are great for a good laugh and relaxation.",

"Drama films often have powerful storytelling and emotional depth."

]

},

{

"tag": "hobby\_interest",

"patterns": [

"I love painting as a hobby.",

"Playing musical instruments is my passion.",

"Hiking and outdoor activities are my interests."

],

"responses": [

"Painting allows for creative expression and relaxation.",

"Playing musical instruments is both enjoyable and rewarding.",

"Hiking and outdoor activities connect you with nature and provide adventure."

]

},

{

"tag": "weather\_preference",

"patterns": [

"I like sunny and warm weather.",

"I prefer a cool and breezy climate.",

"Rainy days are my favorite."

],

"responses": [

"Sunny and warm weather is perfect for outdoor activities.",

"A cool and breezy climate is refreshing and invigorating.",

"Rainy days create a cozy and calming atmosphere."

]

},

{

"tag": "technology\_interest",

"patterns": [

"I'm fascinated by artificial intelligence.",

"Virtual reality technology amazes me.",

"Space exploration and astronomy are my interests."

],

"responses": [

"Artificial intelligence is a rapidly evolving field with endless possibilities.",

"Virtual reality technology offers immersive and exciting experiences.",

"Space exploration and astronomy provide insights into the vastness of the universe."

]

},

{

"tag": "book\_genre",

"patterns": [

"I enjoy reading fantasy novels.",

"Mystery and detective stories are my favorite.",

"Science fiction books captivate me."

],

"responses": [

"Fantasy novels transport you to magical worlds and epic adventures.",

"Mystery and detective stories keep you on the edge of your seat.",

"Science fiction books explore imaginative and futuristic concepts."

]

},

{

"tag": "exercise\_preference",

"patterns": [

"I love going for a run to stay active.",

"Yoga and meditation are my go-to exercises.",

"Weightlifting and strength training are my preferred workouts."

],

"responses": [

"Running is a great way to improve cardiovascular health and clear your mind.",

"Yoga and meditation provide relaxation and promote overall well-being.",

"Weightlifting and strength training help build muscle and improve strength."

]

},

{

"tag": "music\_genre",

"patterns": [

"I'm a fan of rock music.",

"Classical music is my musical preference.",

"I enjoy listening to hip hop and rap."

],

"responses": [

"Rock music is energetic and diverse, with a wide range of sub-genres.",

"Classical music is timeless and showcases incredible musical talent.",

"Hip hop and rap offer powerful beats and meaningful lyrics."

]

},

{

"tag": "language\_learning",

"patterns": [

"I'm learning Spanish as a second language.",

"Japanese language and culture fascinate me.",

"I'm trying to improve my French speaking skills."

],

"responses": [

"Learning Spanish opens up opportunities to communicate with millions of people.",

"Japanese language and culture are rich and full of nuances.",

"Improving your French speaking skills can enhance travel experiences and cultural understanding."

]

},

{

"tag": "art\_style",

"patterns": [

"I admire impressionist art.",

"Abstract art speaks to me.",

"Realism in art captivates my attention."

],

"responses": [

"Impressionist art captures fleeting moments and emotions in a unique way.",

"Abstract art allows for interpretation and creativity in viewing.",

"Realism in art showcases incredible attention to detail and precision."

]

},

{

"tag": "travel\_destination",

"patterns": [

"I dream of visiting Paris someday.",

"Exploring the beaches of Bali is on my bucket list.",

"I'd love to hike in the Swiss Alps."

],

"responses": [

"Paris is known for its art, fashion, and culinary delights.",

"Bali offers stunning beaches, vibrant culture, and delicious cuisine.",

"The Swiss Alps provide breathtaking scenery and excellent hiking opportunities."

]

},

{

"tag": "cooking\_preference",

"patterns": [

"I enjoy cooking Italian dishes.",

"Indian cuisine is a favorite of mine.",

"I love experimenting with vegetarian recipes."

],

"responses": [

"Italian dishes are known for their flavors and simplicity.",

"Indian cuisine offers a diverse range of spices and flavors.",

"Experimenting with vegetarian recipes can lead to creative and healthy meals."

]

},

{

"tag": "movie\_genre",

"patterns": [

"I'm a fan of romantic comedies.",

"Action-packed movies are my go-to choice.",

"Science fiction films captivate my imagination."

],

"responses": [

"Romantic comedies bring a smile to your face and warm your heart.",

"Action-packed movies provide an adrenaline rush and excitement.",

"Science fiction films transport you to futuristic and imaginative worlds."

]

},

{

"tag": "hobby",

"patterns": [

"I enjoy painting and expressing my creativity.",

"Gardening is my therapeutic hobby.",

"I love solving challenging puzzles in my free time."

],

"responses": [

"Painting allows for self-expression and a sense of accomplishment.",

"Gardening is a peaceful and rewarding hobby, connecting you with nature.",

"Solving puzzles sharpens the mind and is a great way to unwind."

]

},

{

"tag": "book\_recommendation",

"patterns": [

"Can you recommend a good mystery novel?",

"I'm looking for a fantasy book to read.",

"Any recommendations for self-help books?"

],

"responses": [

"Sure! For mystery, try 'The Girl with the Dragon Tattoo' by Stieg Larsson.",

"If you enjoy fantasy, 'The Name of the Wind' by Patrick Rothfuss is a great choice.",

"For self-help, 'The Subtle Art of Not Giving a F\*ck' by Mark Manson is highly recommended."

]

},

{

"intents": [

{

"tag": "favorite\_music",

"patterns": [

"I love listening to classical music.",

"Rock music is my all-time favorite.",

"Jazz tunes always put me in a good mood."

],

"responses": [

"Classical music is timeless and soothing.",

"Rock music is energetic and has a great beat.",

"Jazz tunes have a unique improvisational style and are truly uplifting."

]

},

{

"tag": "fitness\_goals",

"patterns": [

"I'm aiming to improve my strength and endurance.",

"I want to lose weight and get in shape.",

"My goal is to run a marathon someday."

],

"responses": [

"Improving strength and endurance requires consistent training and a balanced diet.",

"Losing weight and getting in shape involve a combination of regular exercise and a healthy diet.",

"Running a marathon is a fantastic goal! Training gradually and staying dedicated will help you achieve it."

]

},

{

"tag": "dream\_vacation",

"patterns": [

"My dream vacation involves exploring ancient ruins.",

"I'd love to relax on a beautiful tropical island.",

"Visiting bustling cities and experiencing their culture is my ideal vacation."

],

"responses": [

"Exploring ancient ruins can be a fascinating and enriching experience.",

"Relaxing on a tropical island offers tranquility and stunning natural beauty.",

"Visiting bustling cities allows for diverse cultural experiences and exciting adventures."

]

},

{

"tag": "pet\_preference",

"patterns": [

"I'm a dog person through and through.",

"Cats are my favorite furry companions.",

"I love the playful nature of rabbits and hamsters."

],

"responses": [

"Dogs are loyal and loving companions, always ready for an adventure.",

"Cats have a charming and independent nature, making them great companions.",

"Rabbits and hamsters are adorable and playful pets, bringing joy to any household."

]

},

{

"tag": "coding\_languages",

"patterns": [

"I'm proficient in Python and enjoy its versatility.",

"JavaScript is my go-to language for web development.",

"I'm learning C++ to broaden my programming skills."

],

"responses": [

"Python is a powerful and versatile language used in various applications.",

"JavaScript is essential for web development, enabling dynamic and interactive websites.",

"Learning C++ will enhance your programming skills and open up new opportunities."

]

}

]

}

]

}

**Data preparation:**

The second step of this task to create a chatbot with Python and Machine Learning is to prepare the data to train our chatbot. I’ll start this step by importing the necessary libraries and packages:

import json

import numpy as np

import tensorflow as tf

from tensorflow import keras

from tensorflow.keras.models import Sequential

from tensorflow.keras.layers import Dense, Embedding, GlobalAveragePooling1D

from tensorflow.keras.preprocessing.text import Tokenizer

from tensorflow.keras.preprocessing.sequence import pad\_sequences

from sklearn.preprocessing import LabelEncoder

**Now I will read the JSON file and process the required files:**

with open('intents.json') as file:

data = json.load(file)

training\_sentences = []

training\_labels = []

labels = []

responses = []

for intent in data['intents']:

for pattern in intent['patterns']:

training\_sentences.append(pattern)

training\_labels.append(intent['tag'])

responses.append(intent['responses'])

if intent['tag'] not in labels:

labels.append(intent['tag'])

num\_classes = len(labels)

**Now we need to use the label encoder method provided by the Scikit-Learn library in Python:**

lbl\_encoder = LabelEncoder()

lbl\_encoder.fit(training\_labels)

training\_labels = lbl\_encoder.transform(training\_labels)

**Tokenization:**

Now we need to vectorize the data using the Tokenization method to create a chatbot with Python

vocab\_size = 1000

embedding\_dim = 16

max\_len = 20

oov\_token = "<OOV>"

tokenizer = Tokenizer(num\_words=vocab\_size, oov\_token=oov\_token)

tokenizer.fit\_on\_texts(training\_sentences)

word\_index = tokenizer.word\_index

sequences = tokenizer.texts\_to\_sequences(training\_sentences)

padded\_sequences = pad\_sequences(sequences, truncating='post', maxlen=max\_len)

**Training a Neural Network**

Now the next and most important step in the process of building a chatbot with Python and Machine Learning is to train a neural network. Now, I will train and create a neural network to train our chatbot:

model = Sequential()

model.add(Embedding(vocab\_size, embedding\_dim, input\_length=max\_len))

model.add(GlobalAveragePooling1D())

model.add(Dense(16, activation='relu'))

model.add(Dense(16, activation='relu'))

model.add(Dense(num\_classes, activation='softmax'))

model.compile(loss='sparse\_categorical\_crossentropy', optimizer='adam', metrics=['accuracy'])

model.summary()

epochs = 500

history = model.fit(padded\_sequences, np.array(training\_labels), epochs=epochs)

**Saving The Neural Network:**

We’ve trained the model, but before we go any further in the process of building a chatbot with Python and Machine Learning, let’s save the model so that we can use this neural network in the future as well:

# to save the trained model

model.save("chat\_model")

import pickle

# to save the fitted tokenizer

with open('tokenizer.pickle', 'wb') as handle:

pickle.dump(tokenizer, handle, protocol=pickle.HIGHEST\_PROTOCOL)

# to save the fitted label encoder

with open('label\_encoder.pickle', 'wb') as ecn\_file:

pickle.dump(lbl\_encoder, ecn\_file, protocol=pickle.HIGHEST\_PROTOCOL)

**Now let’s Build a Chatbot with Python and our Trained Model:**

Now I am going to implement a chat function to interact with a real user. When the message from the user will be received, the chatbot will compute the similarity between the sequence of the new text and the training data.

Taking into account the trust scores obtained for each category, it categorizes the user’s message according to an intention with the highest trust score:

import json

import numpy as np

from tensorflow import keras

from sklearn.preprocessing import LabelEncoder

import colorama

colorama.init()

from colorama import Fore, Style, Back

import random

import pickle

with open("intents.json") as file:

data = json.load(file)

def chat():

# load trained model

model = keras.models.load\_model('chat\_model')

# load tokenizer object

with open('tokenizer.pickle', 'rb') as handle:

tokenizer = pickle.load(handle)

# load label encoder object

with open('label\_encoder.pickle', 'rb') as enc:

lbl\_encoder = pickle.load(enc)

# parameters

max\_len = 20

while True:

print(Fore.LIGHTBLUE\_EX + "User: " + Style.RESET\_ALL, end="")

inp = input()

if inp.lower() == "quit":

break

result = model.predict(keras.preprocessing.sequence.pad\_sequences(tokenizer.texts\_to\_sequences([inp]),

truncating='post', maxlen=max\_len))

tag = lbl\_encoder.inverse\_transform([np.argmax(result)])

for i in data['intents']:

if i['tag'] == tag:

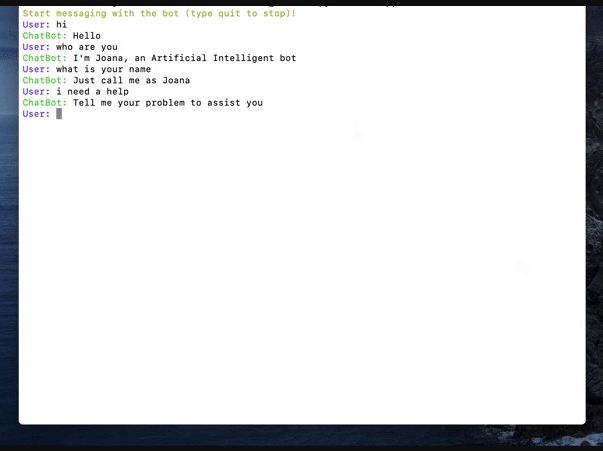
print(Fore.GREEN + "ChatBot:" + Style.RESET\_ALL , np.random.choice(i['responses']))

# print(Fore.GREEN + "ChatBot:" + Style.RESET\_ALL,random.choice(responses))

print(Fore.YELLOW + "Start messaging with the bot (type quit to stop)!" + Style.RESET\_ALL)

chat()

**Sample Output:**

****

**Conclusion**

The development phase was the heartbeat of the project, where concepts and designs were brought to life through code. We successfully set up the development environment, organized the codebase, and implemented crucial features such as user interaction, natural language processing, response generation, and database management. Our codebase is now a functional representation of the envisioned chatbot, ready for testing and refinement.