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Contextual Suggestions of Suitable Meeting Times

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Contextual Suggestions of Suitable Meeting Times

ABSTRACT

This disclosure describes the use of text parsing and suggestion techniques to simplify and automate the process of setting up meetings, e.g., via email. Per techniques of this disclosure, with user permission, text being composed in an outgoing email is analyzed using a contextual parser. The parser detects when the outgoing message is related to a meeting to be set up and also identifies meeting parameters such as participants, date/time, duration, etc. Based on the identified parameters, a list of suggested times for the proposed meeting is provided to the user. Upon user acceptance of the suggestion, the meeting is automatically set up and added to the participants' calendars.

KEYWORDS

- Calendar invite
- Meeting setup
- Meeting scheduling
- Electronic calendar
- Suggested meeting
- Natural language processing (NLP)
- Contextual parser

BACKGROUND

A common use case for email communication is for a group of users to set up meetings. When a user wishes to conduct a meeting with others, the typical process flow includes: composing and sending an email to other meeting participants (invitees), opening up a calendar application, looking up availability of the other participants (where supported), manually checking for availability of non-colliding meeting times among the participants, creating a calendar event (meeting) based on a common open slot on the calendar, and reminding

participants of the meeting either via a calendar alert or via email. This is a cumbersome process that includes many manual steps.

DESCRIPTION

This disclosure describes a low-friction framework with fewer steps for setting up meetings. Per techniques of this disclosure, with user permission, contextual parsers are applied to sentences composed by the user in an email application to automatically suggest suitable times for a proposed meeting. The suggested list of times can be provided via a dropdown menu in an email composition user interface (UI) and can enable automatic booking of the meeting based on availability of the meeting participants (invitees). Based on the selected meeting time, calendar entries can automatically be created and confirmed in the calendars of the meeting participants.
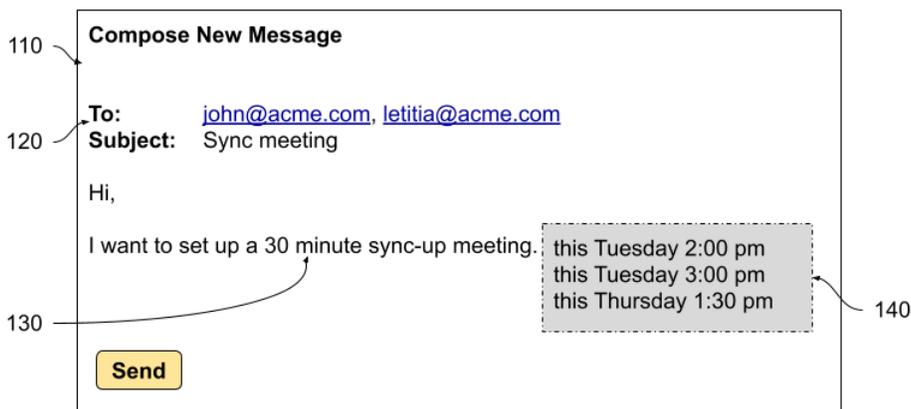

Fig. 1: Available meeting times are suggested via a dropdown menu in the email UI

Fig. 1 depicts an email application user interface with an example of contextual suggestion of available meeting times, per techniques of this disclosure. In this illustrative example, a user utilizes an email application (110) to set up a meeting. As the user composes an email to set up a meeting for a particular recipient (invitee) group by entering their email ids (120), with user permission and express consent, a backend parser is utilized to semantically parse the text. Calendar-specific keywords (hot words), e.g., preferred date(s) for the meeting,

preferred times for the meeting, duration of the meeting (130), additional guests in the email text that are not recipients of the email, etc., are identified in the text of the email by the parser. Parsing can be performed entirely on-device at the client device of the user.

The keywords are utilized by an inference engine to determine suitable meeting times based on availability indicated in respective calendars of the meeting invitees, accessed with specific permission from the respective users. In this illustrative example, the respective calendars of the meeting invitees and the duration of meeting inferred from keywords ("30 minute") are utilized to suggest meeting times (140) via a dropdown menu within the email user interface. Upon user selection of a meeting time, invites are automatically sent to the meeting participants via email.
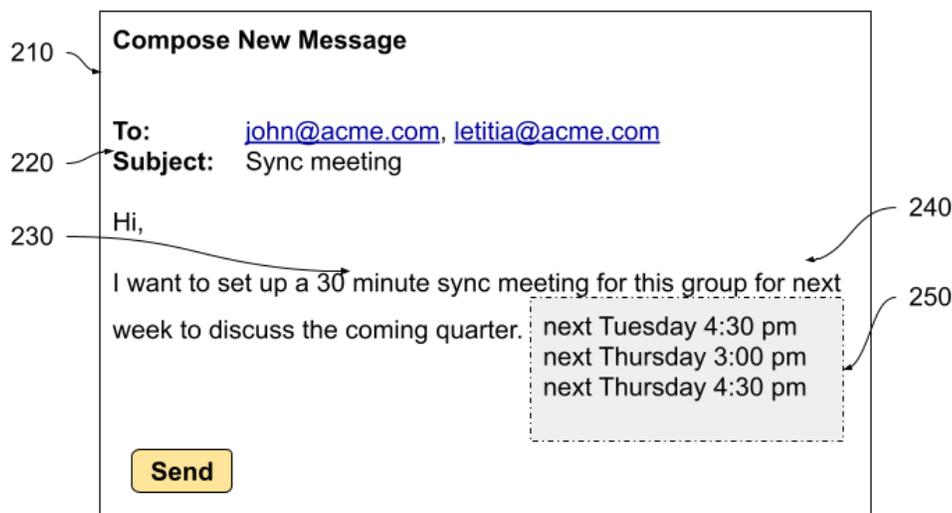
Compose New Message

To:	john@acme.com, letitia@acme.com
Subject:	Sync meeting

Hi,

I want to set up a 30 minute sync meeting for this group for next week to discuss the coming quarter.

next Tuesday 4:30 pm
next Thursday 3:00 pm
next Thursday 4:30 pm

Send

Fig. 2: Contextual information is utilized to suggest suitable meeting times

Fig. 2 depicts another example of contextual suggestion of available meeting times, per techniques of this disclosure. In this illustrative example, a user composes an email using their email application (210) and specifies intended recipients (220). In addition to specifying the duration of the meeting (230), the user also mentions a preferred time - "next week" - (240) for

the meeting. In this illustrative example, the hot word ("next week") is detected by the parser, and the inference engine first identifies available meeting times (slots) for the preferred time.
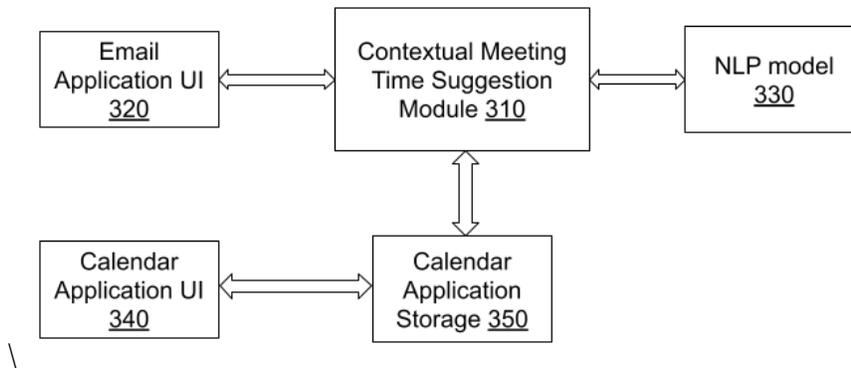

Fig. 3: Interacting elements of a contextual meeting suggestion module

Fig. 3 depicts an example of elements of a contextual meeting suggestion module, per techniques of this disclosure. With user permission, the contextual meeting time suggestion module receives raw text from an email application UI (320) of a user. The raw text is provided to a natural language processing (NLP) model (330) which identifies relevant keywords (hot words) in the raw corpus. Based on the identified keywords, available times are identified in calendar application storage (350) for the meeting participants, and based on meeting time, date, and/or duration preferences detected in the email text composed by the user.

The available times are suggested to the user via the email application UI. Based on user selection of a preferred time for the meeting, the meeting is automatically created and backpropagated to the respective calendars of the meeting participants and to respective calendar UIs (340) of the meeting participants.

The described text parsing and suggestion techniques provide users with a convenient low-friction, 2-step action workflow to create meetings with a reduced user intent-to-action time by synergistically combining email and calendar applications.

Further to the descriptions above, a user may be provided with controls allowing the user to make an election as to both if and when systems, programs, or features described herein may enable the collection of user information (e.g., information about a user's outgoing email, a user's calendar, social network, social actions or activities, profession, or a user's preferences,), and if the user is sent content or communications from a server. In addition, certain data may be treated in one or more ways before it is stored or used so that personally identifiable information is removed. For example, a user's identity may be treated so that no personally identifiable information can be determined for the user, or a user's geographic location may be generalized where location information is obtained (such as to a city, ZIP code, or state level) so that a particular location of a user cannot be determined. Thus, the user may have control over what information is collected about the user, how that information is used, and what information is provided to the user.

CONCLUSION

This disclosure describes the use of text parsing and suggestion techniques to simplify and automate the process of setting up meetings, e.g., via email. Per techniques of this disclosure, with user permission, text being composed in an outgoing email is analyzed using a contextual parser. The parser detects when the outgoing message is related to a meeting to be set up and also identifies meeting parameters such as participants, date/time, duration, etc. Based on the identified parameters, a list of suggested times for the proposed meeting is provided to the user. Upon user acceptance of the suggestion, the meeting is automatically set up and added to the participants' calendars.