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SAVING CONTENT ON A DEVICE

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SAVING CONTENT ON A DEVICE

ABSTRACT

A content saving system receives a request to download content to a device at a later time, determines a later time to download the content, and notifies the user regarding the downloaded content at an appropriate time. The system determines the later time to download content using one or more variables such as device location, device internet connectivity, device battery level, time-of-day, day-of-week, calendar entry information, etc. When the one or more variables are met, the device downloads the requested content. The system then determines an appropriate time to notify the user regarding the downloaded content using one or more predetermined conditions such as device location, device battery level, time-of-day, day-of-week, calendar entry, etc. When the predetermined conditions are met, the system provides a notification to the user about the downloaded content.

PROBLEM STATEMENT

When planning for a trip, a user may want to read or watch a list of long-form articles, magazines, books, novels, or videos on the flight or during the trip. However, the user might forget the list or fail to bring or download the content on the list prior to departing for the trip. At times, the user might bookmark certain web pages for reading later but has no time to download them before boarding the flight or otherwise entering a situation with no, low, or expensive internet connectivity. This may lead to inconvenience and make it almost impossible for the user to access the content at a desired time.

DETAILED DESCRIPTION

The system and techniques described in this disclosure relate to a content saving system that downloads user-requested electronic content to a device at a later time and notifies the user that the downloaded content is available for consumption at an appropriate time. The system can be implemented in an Internet, an intranet, or another client and server environment. The client device can be any electronic device such as mobile device, a smartphone, a tablet, a handheld electronic device, a wearable device, a laptop, or a printing device etc.

Fig. 1 illustrates an example method 100 for saving and consuming content at appropriate times. The method 100 can be performed by a content saving system. The system receives 102 a request from a user to download content to be consumed at a desired, later time. The content may include, but not limited to an electronic document, an electronic form that needs to be filled in, a list of things to do, a list of places to visit, a website, a music album, a book, a video, or another type of electronic media. The content may further include an offline map for a destination based on user's itinerary, certain articles related to user's destination based on the user's email history, itinerary, to-do list, and calendar events. The content may include a web page that the user has bookmarked for reading at a later time which may or may not have a time-stamp of when the user wants the content to be returned, e.g., Monday at 8 am, or an event based time-stamp, e.g., "Before my flight to Boston." The content may also include short natural language strings that indicate what content the user wants later, e.g., voice commands for setting reminders about a certain survey form to be filled in.

The system determines 104 a later time to download the content using one or more variables. The one or more variables may include: WiFi connectivity of the user's mobile device, device's battery level, device's local storage capacity, time of day, etc. The variables may take into account the device activity at the time of downloading the content, e.g., active, on charging, in restricted mode, or idle. For example, if the device is currently in use by the user for playing music, the system may determine the feasibility of downloading content in the background in a manner that does not interrupt the user's interaction with the device. These variables may be predefined by the system or can be configured by the user. The system can automatically set the one or more variables or the user can input the one or more variables into the system via a settings menu. For example, the user can set the threshold battery level of the device or the threshold internet connectivity into the system. The one or more variables can be stored in a memory of the physical storage device, user's electronic device, in a cloud server, or in an account associated with the user, etc. Alternatively, or additionally, the system may prompt the user when the device is ready to download the content to be consumed later. The user may then reschedule the content to be downloaded at a later time based on a subsequent occurrence of the one or more variables, or the user can allow the content to be downloaded at that time.

When the variables are satisfied, the system downloads 108 the content before the desired time. When the variables are not satisfied, the system waits 106 for a pre-set amount of time and rechecks whether the variables are met so that the content can be downloaded before the desired time. Alternatively, or additionally, the user may also define a specific time for the system to recheck the variables via a prompt e.g. "check tonight" or "ask tomorrow morning". The downloaded content can be stored locally on the device so that the content is easily accessible

when the user wants to consume the content. For example, the user may be interested in watching a video on a video streaming platform during an airplane flight. The system may download an offline version of the video when connected to wifi and store it locally at the mobile device for the user to watch during the flight.

The system provides 110 a notification to the user about the downloaded content at the desired time. The system may remind the user to consume the downloaded content at the desired time. The desired time may be either predefined by the user, if appropriate, or before a series of events, e.g., providing a notification about the downloaded video to the user when he/she is in the flight. Since the system has to download the content prior to notification, if the notification time is approaching, the device may overlook the "battery level" condition variable and download the content even when the battery is low. The system can notify the user using various notification techniques, e.g., e-mail notifications, reminder cards, message/ping notification, or any audio/visual notification.

Fig. 2a illustrates an example system 200 including a user interface representation 202 for saving content and making it available to be consumed at a desired time by a user. The system 200 can include a client device which can be a mobile phone, smartphone, tablet, laptop, touch screen device, or any other portable communication device which enables a user to download and consume content (204a, 204b, 204c) from Internet. The system 200 identifies and downloads the content (204a, 204b, 204c) when the predefined conditions for downloading the content (204a, 204b, 204c) are satisfied. The content (204a, 204b, 204c) can include various articles 204a, documents 204b, and books 204c, which the user may be interested in reading while on his trip. Alternatively, or additionally, the system 200 may determine related articles based on user's

itinerary and destination information and the user can be prompted to download these suggested

articles which may be helpful during his/her trip. For example, the system 200 may determine

from the email history and itinerary, that the user is going to start a trip to India on the next day;

accordingly, the system may suggest and download certain related articles 204a which may be an

interesting read for the user before he/she lands at the new place.

Fig. 2b illustrates the example system 200' providing a user interface (UI) representation

of a notification 202' presented to the user about the downloaded content at the desired time. The

notification 202' can be presented to the user at the desired time set by the user or the

notifications can be configured to be presented based on priority of the content to be consumed

by the user. Further, the UI may include options to view the downloaded content which when

selected directly open the downloaded content on user's device. The UI may also include other

option to snooze or dismiss the notifications and configuring the notifications to be provided

again after a predetermined amount of time.

Fig. 3 is a block diagram of an exemplary environment that shows components of a

system for implementing the techniques described in this disclosure. The environment includes

client devices 310, servers 330, and network 340. Network 340 connects client devices 310 to

servers 330. Client device 310 is an electronic device. Client device 310 may be capable of

requesting and receiving data/communications over network 340. Example client devices 310 are

personal computers (e.g., laptops), mobile communication devices, (e.g. smartphones, tablet

computing devices), set-top boxes, game-consoles, embedded systems. Client device 310 may

execute an application, such as a web browser 312 or 314 or a native application 316. Web

applications 313 and 315 may be displayed via a web browser 312 or 314. Server 330 may be a

web server capable of sending, receiving and storing web pages 332. Web page(s) 332 may be stored on or accessible via server 330. Web page(s) 332 may be associated with web application 313 or 315 and accessed using a web browser, e.g., 312. When accessed, webpage(s) 332 may be transmitted and displayed on a client device, e.g., 310. Resources 318 and 318' are resources available to the client device 310 and/or applications thereon, or server(s) 330 and/or web pages(s) accessible therefrom, respectively. Resources 318' may be, for example, memory or storage resources; a text, image, video, audio, JavaScript, CSS, or other file or object; or other relevant resources. Network 340 may be any network or combination of networks that can carry data communication.

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 collection of user information (e.g., information about a user's social network, social actions or activities, profession, a user's preferences, or a user's current location), 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.
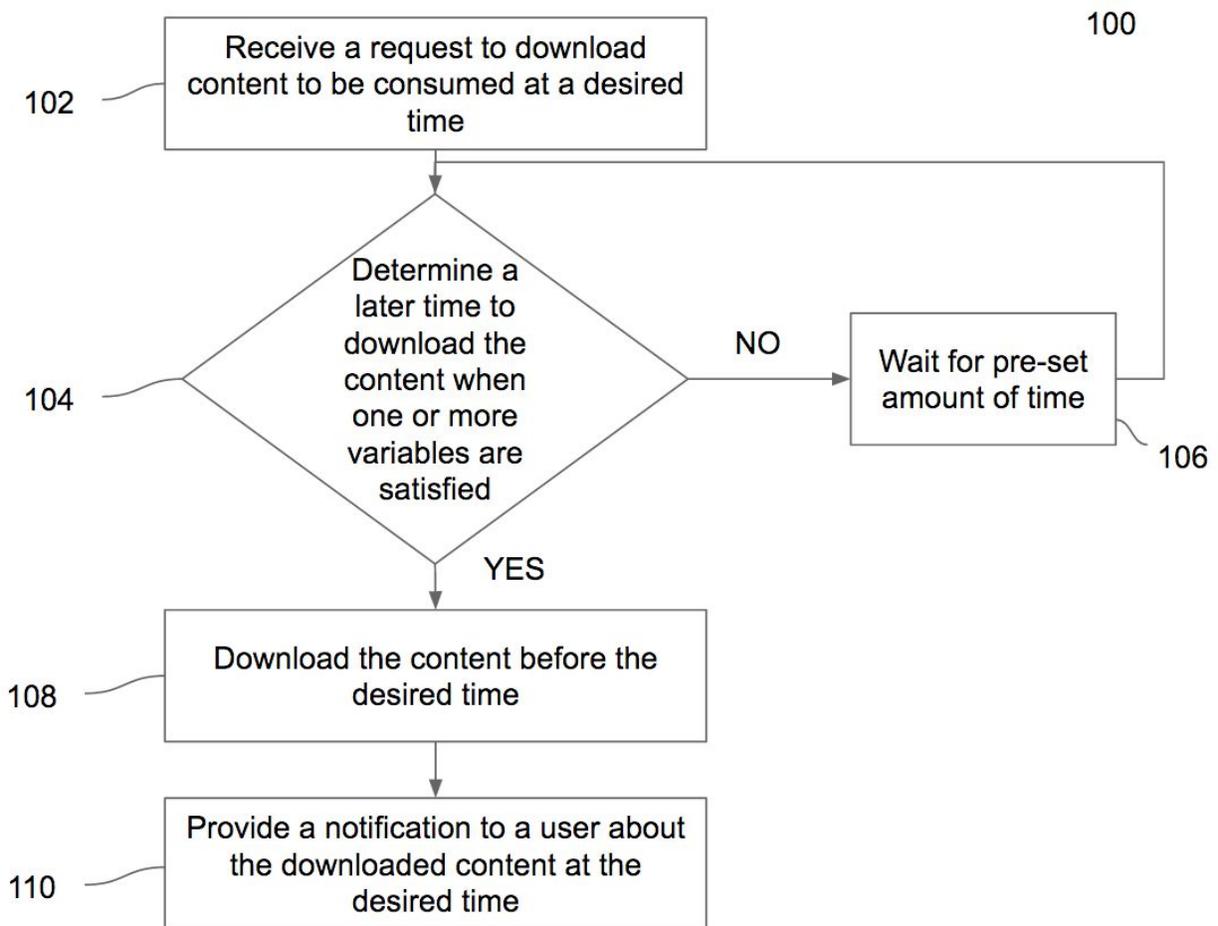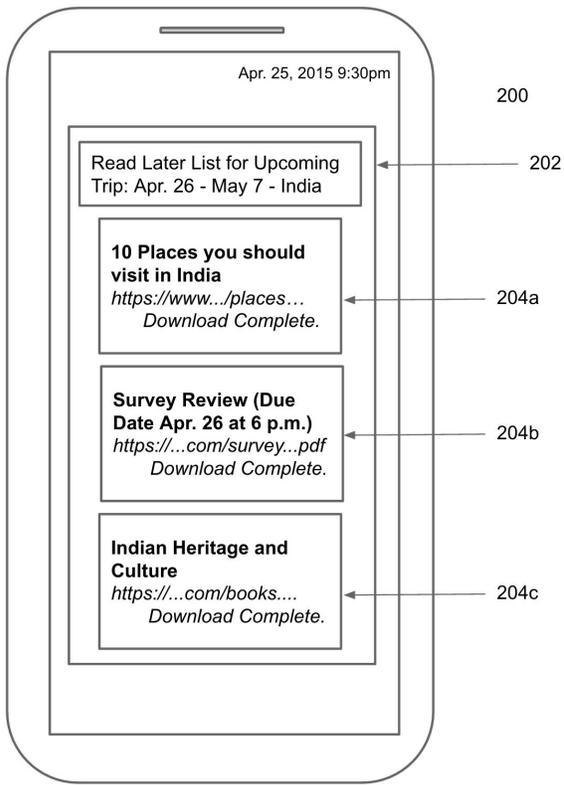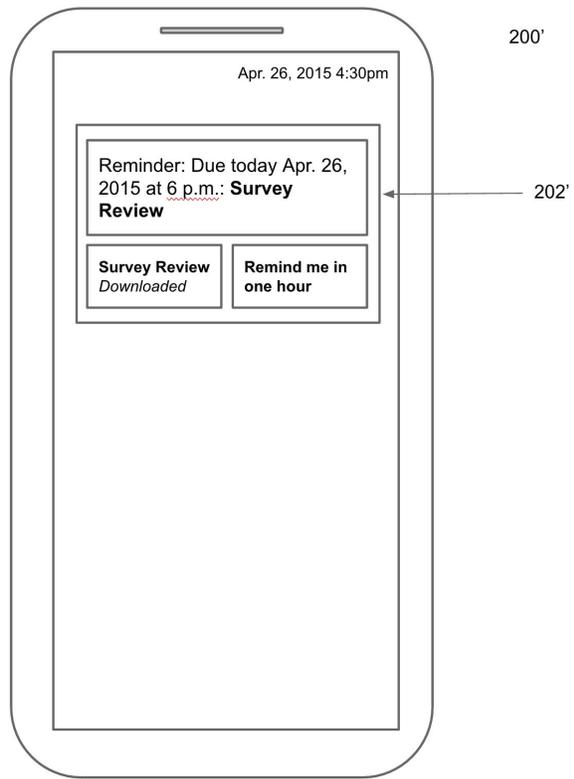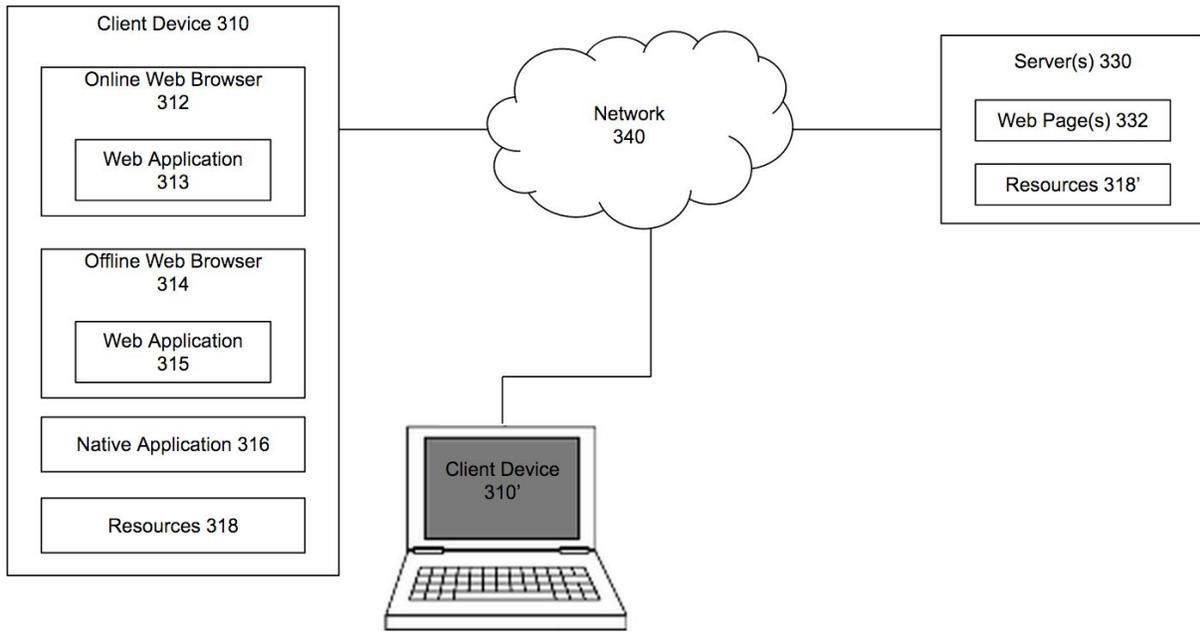
DRAWINGS

Fig. 1

Apr. 25, 2015 9:30pm

200

Read Later List for Upcoming
Trip: Apr. 26 - May 7 - India — 202

**10 Places you should
visit in India**
https://www.../places…
Download Complete. — 204a

**Survey Review (Due
Date Apr. 26 at 6 p.m.)**
https://...com/survey...pdf
Download Complete. — 204b

**Indian Heritage and
Culture**
https://...com/books....
Download Complete. — 204c

Fig. 2a

200'

Apr. 26, 2015 4:30pm

Reminder: Due today Apr. 26,
2015 at 6 p.m.: **Survey
Review** — 202'

Survey Review
Downloaded

**Remind me in
one hour**

Fig. 2b

Fig. 3