K. J. Somaiya Institute of Engineering and Information Technology, Sion, Mumbai

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DEPARTMENT OF INFORMATION TECHNOLOGY

Synopsis of Mini Project On

JAVA DOWNLOAD MANAGER

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Academic Year: 2020-2021

(REV- 2019 'C' Scheme) - SEM III (SE - IT)

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CERTIFICATE

This is to certify that following students:

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have submitted Mini-Project Report on *"***JAVA DOWNLOAD MANAGER***"* as the partial fulfillment for the requirement of Second Year of Engineering (3rd Semester) in S.E. - Information Technology under my guidance during the academic year 2020-2021.

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Date of Examination: _____

Signature of Internal Examiner **Signature of External Examiner**

Table of Contents

Acknowledgement

Before presenting our project entitled “JAVA DOWNLOAD MANAGER”, we would like to convey our sincere thanks to the many people who guided us throughout the course for this project work. First, we would like to express our sincere thanks to our beloved Principal Dr. Suresh Ukarande & Vice Principal Dr.Sunita Patil for providing various facilities to carry out this project.

We would like to express our sincere thanks to Prof. Harsh bhor along with Prof. Nasim Banu Shah for h guidance, encouragement, co-operation and suggestions given to us at progressing stages of the project. Finally, we would like to thank our H.O.D Dr. Radhika Kotecha and all teaching, non-teaching staff of the college and friends for their moral support rendered during the course of the project work and for their direct and indirect involvement in the completion of our project work, which made our endeavor fruitful.

Abstract

In this era of internet, downloading is the most prominent and common task. Since this task is so important task on internet. It should be managed so that the efficiency of the usage is high. The download manager is a small tool that makes it easy to download data from internet. A download manager it accelerates to noticeably increase the speed of file being downloaded into several parts and downloading these parts at the same time.

The main objective of the Download manager project in java is to organizing and managing the Downloading task. Any file like Documents, ppts, .mp3 files, video files. This project is useful to download qny file quickly. This application like a IDM download manager. User can pause, resume file downloading add link to file downloading Stop downloading, start downloading this application useful for any operating system. IDM are used only for Windows operating system. But it's the best option for downloading files on any operating system. Here No Database uses but if you want update this version store recent download and other thing project. A download manager is a computer program dedicated to the task of downloading possibly unrelated stand alone files from the internet for storage.

Download managers are useful for very active internet internet users. For broadband users download manager can help download very large files by resuming broken downloads, by limiting the bandwidth used so that any other internet activities are not affected and the server is not overloaded. This can also include automatically downloading whole sites and regularly updating them. Download manager java project is a desktop application which is developed in java platform.

Chapter 1: Introduction

Download manager is a program that helps us download files from Internet efficiently. The program can pause or resume downloads. It also can split the files to be downloaded into 2 or more segments, which are processed in parallel, making the download faster. In this project, we will share with you how we write a download manager program in Java with those features.

A download manager is a computer program dedicated to the task of downloading (and sometimes uploading) possibly unrelated stand-alone files from (and sometimes to) the Internet for storage.

This project is aimed to develop a multi-thread segmented Download Manager that manages multiple segmented downloads and supports HTTP, and other downloads.

A download manager is a software that helps you to prioritize your downloads, faster download speeds, automatic antivirus checking, support for pausing and resuming downloads, and also offers built in scheduler. This software may be built into a web browser or as a stand-alone manager. This project is complete backend by java only.

1.1 **Motivation**

The aim of these project is to develop and design the easy and useful environment of downloading files quickly from internet. It is designed in java and that is why we can use this software on any operating system.

It allows users for downloading various type of files. So the users will be able to download anywhere, anytime with the help of internet connectivity.

The download manager tool will be written in java, but due to lack of experience in java, while developing the tool practicing techniques with java and working on it as much as possible will help some java skills and be more ready to develop the application. The basic and first idea was to develop a simple to use, free downloading system with efficiency.

For the scope of the project, the project will be tested as the program is being developed. When the project is near completion. More testing will be done in order to make it less buggy or more user friendly.

Objectives

- To develop the segmented downloads from HTTP.
- This system will also allow downloads to be paused and resumed.
- It will also help in downloading several several files from a given link .
- To develop a robust and efficient system for downloading files.

1.2 Scope

- Internet download manager is useful for very active internet users
- Download managers are design to give users greater control over downloads.

Chapter 2: Literature Review

Gone are the days when the pen was the most important tool in this world; times have changed and now the internet rules the world. The internet offers a collection of important services and resources that are essential to daily living.

The early days of mobile phones in the 1980s, several generations of cellular technologies have come and gone, with the market requiring more powerful technology roughly every 10 years. The rapid rise in the use of mobile phones brought about second generation systems (2G) in the 90s, such as “GSM” or “IS-95”. Then came “Mobile broadband” data in the 2000s with the arrival of smart phones and 3G systems, such as “UMTS” or “CDMA 2000” then became the norm. Since 2010, operators have moved on to deploying 4G radio-mobile networks, mainly based on LTE technology

Each new generation aims to improve network performance, from the point of view to download and upload stuff easily.

The limited availability of Internet broadband access in remote areas contrasts with the pervasive ultrahigh-speed Internet access available in all major urban areas, creating a digital divide that affects the Global North and the Global South alike. Even though there is demand for Internet broadband service in these regions, current solutions are not economically viable. Low population density, geographical barriers, and large distances constitute challenges that are hard to overcome with current technologies in a cost-efficient manner. Specifically, one major factor that hinders conventional 4G network coverage in remote areas is the usage of licensed bands. The high price of the spectrum and the low number of potential subscribers within the 4G cell coverage reduces the economic feasibility of network deployment in remote areas.

But even as times changed, a lot of problems showed its effect on downloading, Both rural as well as in urban areas.

Have you ever had an Internet download interrupted, putting you back at square one? If you have a broadband connection, and connect to the Internet through a router, the Internet connection may be unstable. Issues with Internet connectivity and the stability of the connection can cause downloads to fail, especially if the Internet connection is interrupted. When an Internet

connection is unstable, it may disconnect and reconnect intermittently. Even a disconnection lasting a fraction of a second can cause the failure of a file download. If you connect to the Internet with a dial up connection, it's very likely that you've run into this all too common nuisance. Everything from call-waiting disconnects to computer crashes can leave a download dead in its tracks. To say the least, restarting a download from scratch over and over can be a very time-consuming and frustrating experience. A sometimes overlooked fact is that many interrupted downloads can be resumed. This allows you to recommence downloading from the point at which a download terminates instead of having to begin anew. In this a tool called Download Manager is developed that manages Internet downloads for you and makes simple work of resuming interrupted downloads. It also lets you pause and then resume a download, and manage multiple downloads, simultaneously. At the core of the Download Manager 's usefulness is its ability to take advantage of downloading only specific portions of a file. In a classic download scenario, a whole file is downloaded from beginning to end. If the transmission of the file is interrupted for any reason, the progress made toward completing the downloading of the file is lost. The Download Manager, however, can pick up from where an interruption occurs and then download only the file's remaining fragment. Not all downloads are created equal, though, and there are some that simply cannot be restarted. Details on which files are and are not resumable are explained in the following section. Not only is the Download Manager a useful utility, it is an excellent illustration of the power and succinctness of Java's built-in APIs--especially as they apply to interfacing to the Internet. Because the Internet was a driving force behind the creation of Java, it should come as no surprise that Java's networking capabilities are unsurpassed. For example, attempting to create the Download Manager in another language, such as C++, would entail significantly more trouble and effort.

Today downloading big stuff quickly and easily becomes the important thing. Here is list of some top download manager.

JDownloader:

JDownloader is one of the best download managers that you can get for your Windows PC. the downloader manager allows users to start, stop or pause downloads, set bandwidth limitations, auto-extract archives, and much more. Some of my other favorite features of this app include multiple file downloads, support for popular content sites such as Video and YouTube, add-on support, and more.

Internet Download Manager:

Internet Download Manager also known as IDM is probably one of the most popular download managers for Windows out there. It deletes the extra step need to consciously use a download manager as it automatically captures all downloads. Other features of IDM include the ability to pause and resume downloads, support for downloading multiple files in parallel, faster download speeds, and more

Ninja Download Manager:

Ninja Download Manager is one of my most favorite download manager apps for Windows. First of all, the app is probably the best looking download managers out there. The software uses multiple simultaneous connections which basically divides the whole file into different chunks and uses different server points to download different chunks, thereby bringing your exponentially faster download speeds.

Chapter 3: Functionalities of Proposed System

Client: Download manager

The download manager is a system service that handles long-running HTTP downloads. Clients may request that a URI be downloaded to a particular destination file. The download manager will conduct the download in the background, taking care of HTTP interactions and retrying downloads after failures or across connectivity changes and system reboots.

The Web server

On the opposite side of the communication channel, is the server, which serves the document as requested by the client. A server appears as only a single machine virtually: this is because it may actually be a collection of servers, sharing the load (load balancing) or a complex piece of software interrogating other computers (like cache, a DB server, or e-commerce servers), totally or partially generating the document on demand.

A server is not necessarily a single machine, but several server software instances can be hosted on the same machine. With HTTP/1.1 and the Host header, they may even share the same IP address.

Proxies

Between the download manger and the server, numerous computers and machines relay the HTTP messages. Due to the layered structure of the Web stack, most of these operate at the transport, network or physical levels, becoming transparent at the HTTP layer and potentially making a significant impact on performance. Those operating at the application layers are generally called proxies. These can be transparent, forwarding on the requests they receive without altering them in any way, or non-transparent, in which case they will change the request in some way before passing it along to the server. Proxies may perform numerous functions:

Chapter 4: Implementation Details and Results

HTTP

HTTP is a protocol which allows the fetching of resources, such as HTML documents. It is the foundation of any data exchange on the Web and it is a client-server protocol, which means requests are initiated by the recipient, usually the Web browser. A complete document is reconstructed from the different sub-documents fetched, for instance text, layout description, images, videos, scripts, and more.

HTTP as an application layer protocol, on top of TCP (transport layer) and IP (network layer) and below the presentation layer.Designed in the early 1990s, HTTP is an extensible protocol which has evolved over time. It is an application layer protocol that is sent over TCP, or over a TLS-encrypted TCP connection, though any reliable transport protocol could theoretically be used. Due to its extensibility, it is used to not only fetch hypertext documents, but also images and videos or to post content to servers, like with HTML form results. HTTP can also be used to fetch parts of documents to update Web pages on demand.

JAVA.NET.URL

The java.net.URL class represents a URL. There are constructors to create new URLs and methods to parse the different parts of a URL. However the heart of the class are the methods that allow you to get an Input Stream from a URL so you can read data from a server.

The URL class is closely tied to protocol and content handlers. The objective is to separate the data being downloaded from the protocol used to download it. The protocol handler is responsible for communicating with the server, that is moving bytes from the server to the client. It handles any necessary negotiation with the server and any headers. Its job is to return only the actual bytes of the data or file requested. The content handler takes those bytes and translates them into some kind of Java object such as an Input Stream or Image Producer.

Figure 4.1: User URL Screen.

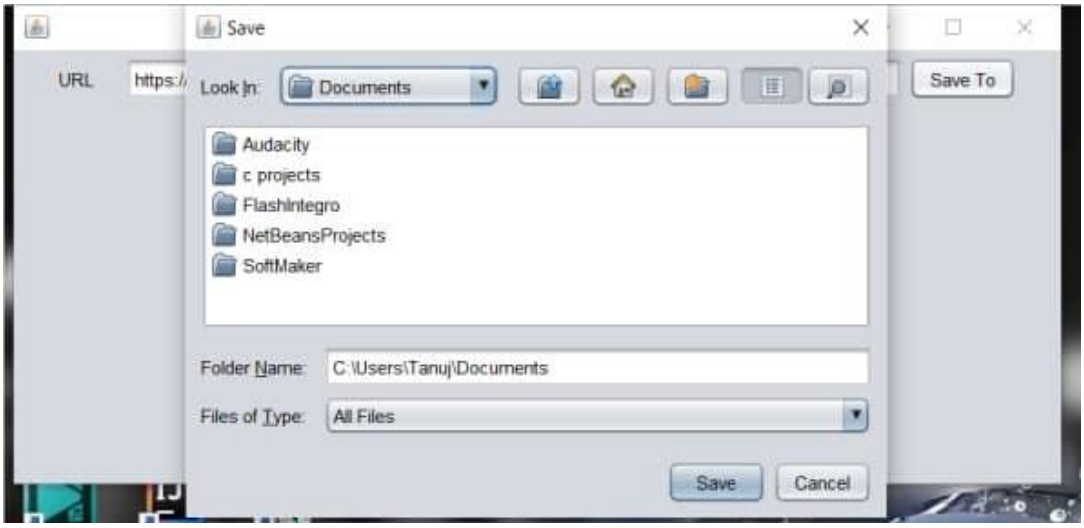

Figure 4.2: URL Saving Screen.

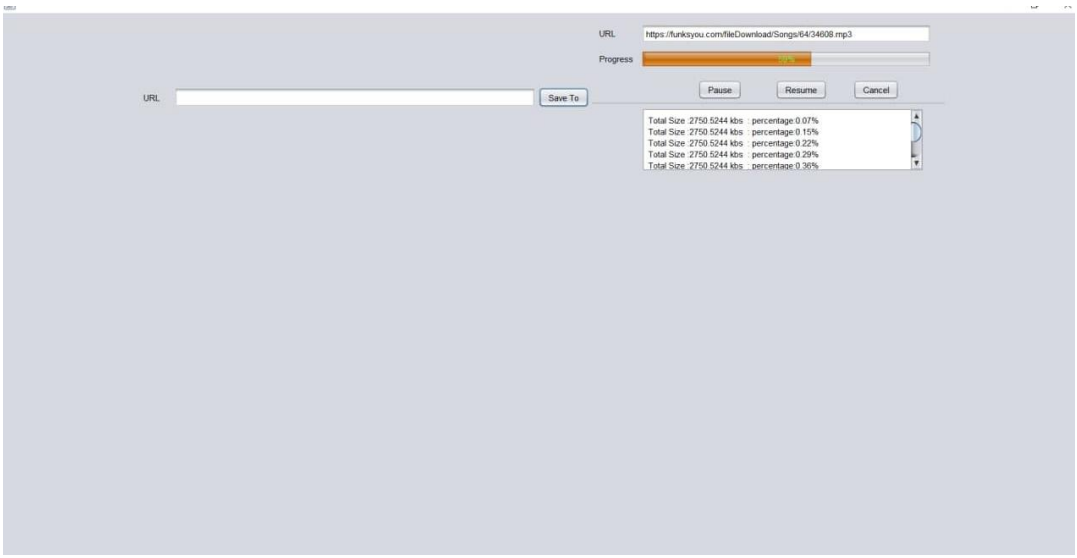

Figure 4.3: URL Downloading Screen.

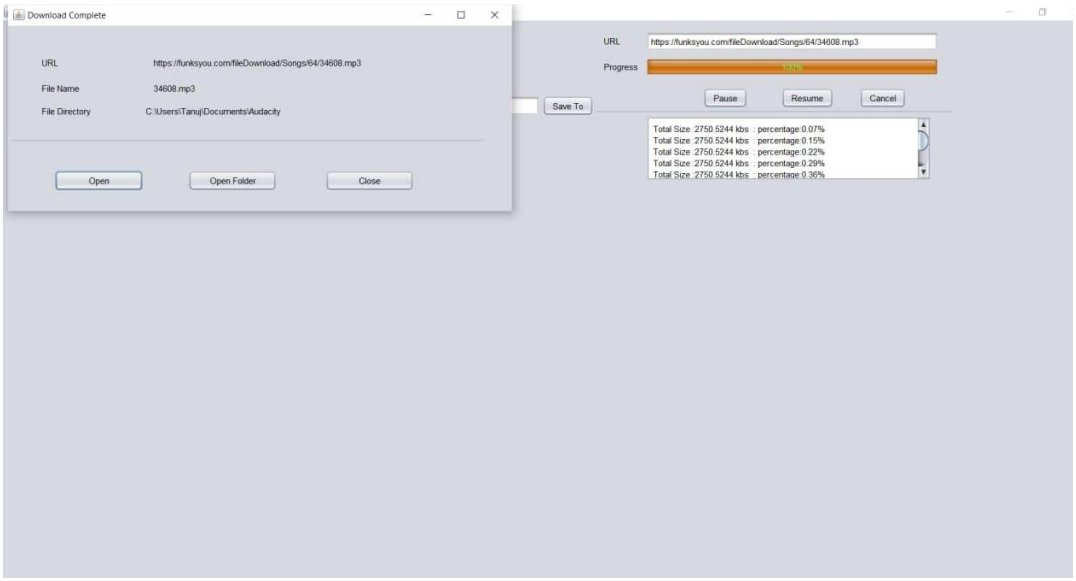

Figure 4.4: URL Detail Screen.

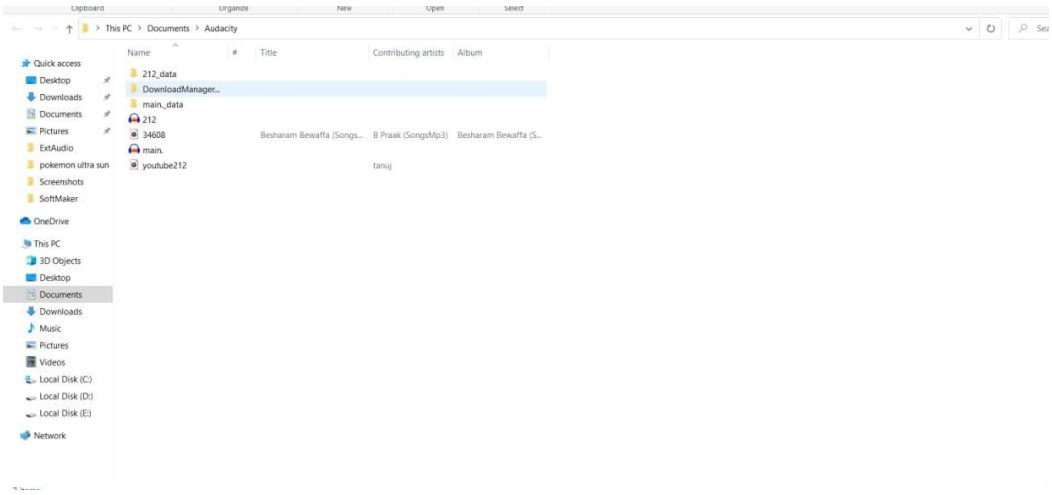

Figure 4.5: User Folder Screen.

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