



Summer Fellowship Report

On

Automated Payment Module

Submitted by

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Under the guidance of

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Acknowledgment

I, Mohit Khandelwal, a FOSSEE intern of the Spoken-Tutorial Project is overwhelmed in all humbleness and gratefulness to acknowledge my deep gratitude to all those who have helped me accomplish the tasks assigned to me.

I wholeheartedly thank Mrs. Nancy Varkey for selecting me to be a part of this valuable project and for providing constant motivation to do better.

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With help of their brilliant guidance and encouragement, i was able to complete the assigned tasks.

Last but not the least, I wholeheartedly thank all the other colleagues working in different projects for helping me evolve better with their support & advices.

With Regards,

Mohit Khandelwal
(IET-DAVV, Indore)

Abstract

The Spoken Tutorial project is the initiative of the ‘Talk to a Teacher’ activity of the National Mission on Education through Information and Communication Technology (ICT), launched by the Ministry of Human Resources and Development, Government of India.

The use of spoken tutorials to popularize software development and its use will be coordinated through this website.

(The Spoken Tutorial project is being developed by IIT Bombay for MHRD, Government of India.)

The spoken Tutorial Project aims to make spoken tutorials on FOSS available in several indian languages, for the learner to be able to learn in the language he/she is comfortable in. The goal is to enable the use of spoken tutorials to teach in any Indian language, and to be taught to learners of all levels of expertise- Beginner, Intermediate or Advanced.

This project is for the community and by the community. Through the portal, we aim to reach out to like-minded individuals to collaborate with us and with each other to create Spoken Tutorials. The next step is to get each Spoken Tutorial dubbed into as many indian languages as possible. This will help anyone anywhere to understand the contents of the Spoken Tutorials. Each of the Tutorials, whether original or dubbed, go through a strict review procedure, after which they are uploaded on the public domain. This is to ensure that the highest possible quality is attained.

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Introduction

Spoken tutorial provides tutorial video for free and open source softwares & tools in various indian regional language. To accomplish this task organization takes helps of many external contributors. This contributors are mostly domain expert and very fluent in regional language. They resides in distant corners of India and contribute to project remotely.

They contributes to spoken tutorial by -

1. writing script for tutorial,
2. recording dubbed audio
3. sometimes both.

Spoken tutorial acknowledges their contribution by paying cash honorarium.

Problem

Present procedure of paying honorarium is entirely manual, which has lots of flaws and problems. The whole honorarium payment process is quite slow and error prone. It includes a lot human involvement. Also there is no provision to track the progress of a honorarium. Neither the contributors stay updated about what's the progress of there honorarium payment.

Proposed Solution

To develop a custom module from scratch to automate the calculation of honorarium payable to all external contributors of the Spoken Tutorial Project with a feature to track the progress of a honorarium. This module will automatically calculates honorarium amount by analysing tutorial video length

and contribution type. Further it will automatically generates honorarium receipt. The module has a interface to update and track the progress while its in process at Accounts departments of IIT-B. On successful completion of honorarium payment process, contributors will be notified and can confirm with just one click.

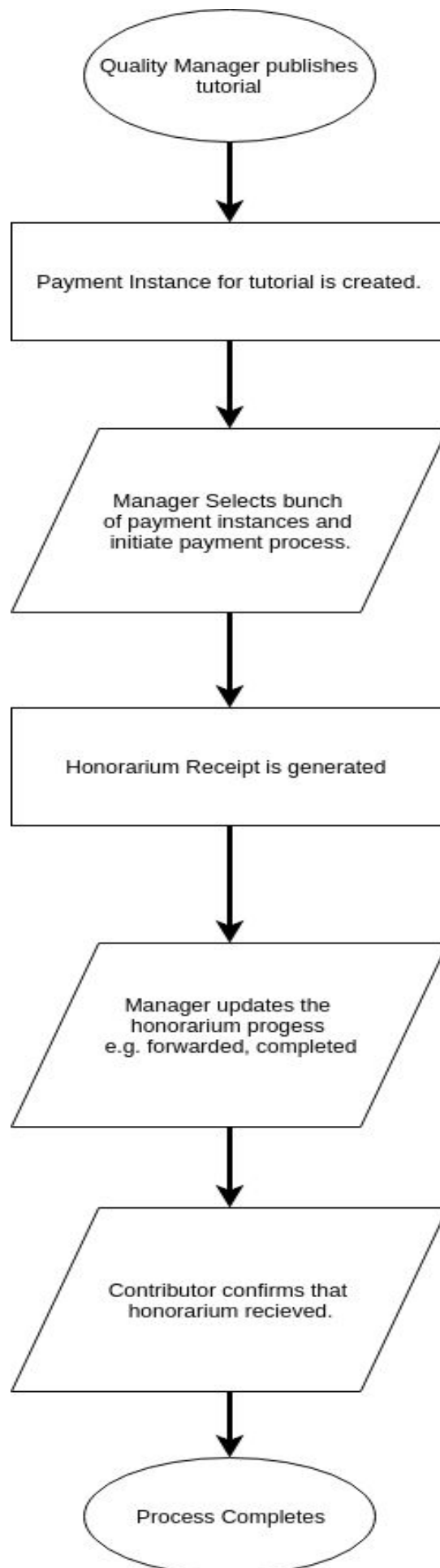
Benefits

The automated payment process will be very beneficial in initiating, tracking and management of honorarium payment of external contributors. It will be helpful not only for managers but for admin and contributor as well. Their will be following benefits of automated process:

- Manager can track payment honorarium.
- Admin can easily get payment related statistics.
- Contributor will be notified instantly.
- Honorarium receipt will be generated automatically reducing manual work.
- Whole payment process will become less error prone.

Workflow

The whole workflow of module is described in the following flow sketch -



Design Considerations

Assumptions and Dependencies

- Python 2.7
- Django == 1.8

Packages & Technology Used

- **Python:** High-Level Scripting Language for Back-End coding and for server side programming. Python features a dynamic types system and automatic memory management and supports multiple programming paradigms.
- **Django:** Python framework for web application development. It follows MVC(Model View Controller) structure for managing the models and controlling the views
- **MySQL:** It is the world's most used open source relational database management that runs as a server providing multi-user access to a number of databases.
- **Python-docx:** It is a Python library for creating and updating Microsoft Word (.docx) files.
- **FFmpeg:** A complete, cross-platform solution to record, convert and stream Audio and Video.
- **HTML:** It is the main markup language for displaying web pages and other information that can be displayed in a web browser.
- **CSS:** (CSS) is a style sheet language used for describing the presentation semantics (the look and formatting) of a document written in a markup language.

- **JavaScript:** It is a prototype-based scripting language that is dynamic, weakly typed and has first-class functions and is mainly used for validation etc.

Results

Once the tutorial is published, admin can see list of due tutorials arranged contributor wise.

Admin can select all tutorials or some tutorials for a contributor and initiate a payment process.

The screenshot shows the 'Payment Due Tutorials' page in the Spoken Tutorial application. The page is organized by contributor. The first contributor is JANE JOSEPH, with one tutorial listed: 'Classes And Objects' (FOSS: Advanced Cpp, Language: Malayalam, Script User: checked, Video User: empty, Duration: 0:10:31, Amount: ₹ 1363, Published At: May 7, 2015, 12:15 p.m.). The second contributor is Jayashree Manikantan, with two tutorials listed: 'Overview of DWSIM' (FOSS: DWSIM, Language: Tamil, Script User: checked, Video User: empty, Duration: 0:16:12, Amount: ₹ 2100, Published At: Sept. 2, 2017, 5:09 p.m.) and 'Sensitivity Analysis and Adjust' (FOSS: DWSIM, Language: Tamil, Script User: checked, Video User: empty, Duration: 0:08:38, Amount: ₹ 1119, Published At: Oct. 13, 2017, 3:52 p.m.). Each list has an 'Initiate Payment' button.

Interface to update & track progress of generated honorarium.

← → ↻ 127.0.0.1:8000/creation/payment/honorarium/ ☆

Spoken Tutorial Software Training ▾ Creation ▾ News ▾ Academics ▾ About ▾ Forums ▾ Statistics ▾ admin_mohit ▾

-- All Courses -- ▾ -- All Languages -- ▾ **Search**

For the purpose of course selection, go here : [Software Offered](#) Keyword Search

☰ Payment Honorariums

Ready to publish / **Payment Due** / Payment In Process

Contributor: --- Select Contributor --- Start Date: yyyy-mm-dd

Payment Status: --- Select Status --- End Date: yyyy-mm-dd

Filter **Clear**

Code	Contributor	Total Amount	Last Updated	Honorarium	Options
#PH-2018-06-00003	Jayashree Manikantan	₹ 2713	June 11, 2018, 10:39 p.m.	View / Download	Mark as Forwarded
#PH-2018-06-00002	Meboreen Mary	₹ 4023	June 11, 2018, 7:19 p.m.	View / Download	Mark as Completed
#PH-2018-06-00004	PADMALOCHINI SELVAMANI	₹ 1457	June 11, 2018, 10:47 p.m.	View / Download	Waiting for Confirmation
#PH-2018-06-00001	Meboreen Mary	₹ 4545	June 11, 2018, 6:36 p.m.	View / Download	Confirmed ✓

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Once the amount is credited contributor will get a notification and a link to confirm honorarium received.

← → ↻ 127.0.0.1:8000/creation/upload/contributed/?page=6 ☆

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S.No	Foss	Tutorial Name	Language	Outline	Script	Slide	Video	Codefiles	Assignment	Additional material	Prerequisite	Keywords	Status	Payment Status
1	PHP and MySQL	MySQL Part 4	Khasi	✓	✓	✓	✓	✓	✓	✗	✓	✓	Accepted	NoData
2	PHP and MySQL	MySQL Part 5	Khasi	✓	✓	✓	✓	✓	✓	✗	✓	✓	Accepted	NoData
3	PHP and MySQL	Sessions	Khasi	✓	✓	✓	✓	✓	✓	✗	✓	✓	Accepted	NoData
4	PHP and MySQL	Cookies Part 2	Khasi	✓	✓	✓	✓	✓	✓	✗	✓	✓	Accepted	✓
5	PHP and MySQL	Cookies Part 1	Khasi	✓	✓	✓	✓	✓	✓	✗	✓	✓	Accepted	✓
6	PHP and MySQL	MD5 Encryption	Khasi	✓	✓	✓	✓	✓	✓	✗	✓	✓	Accepted	!
7	PHP and MySQL	File Upload Part 2	Khasi	✓	✓	✓	✓	✓	✓	✗	✓	✓	Accepted	Confirm
8	PHP and MySQL	PHP String Functions Part 1	Khasi	✓	✓	✓	✓	✓	✓	✗	✓	✓	Accepted	!
9	PHP and MySQL	PHP String Functions Part 2	Khasi	✓	✓	✓	✓	✓	✓	✗	✓	✓	Accepted	NoData
10	PHP and MySQL	Simple Visitor Counter	Khasi	✓	✓	✓	✓	✓	✓	✗	✓	✓	Accepted	NoData
11	PHP and MySQL	MySQL Part 6	Khasi	✓	✓	✓	✓	✓	✓	✗	✓	✓	Accepted	NoData
12	PHP and MySQL	MySQL Part 7	Khasi	✓	✓	✓	✓	✓	✓	✗	✓	✓	Accepted	NoData

A preview of automatically generated honorarium receipt

Date : 26 June, 2018

To,
Professor Kamman Moudgalya,
PI,
Spoken Tutorial Project,
IIT Bombay,
Mumbai

Dear Sir,

I request you to kindly approve the honorarium of **Rs. 2881** /- (Rupees Two Thousand Eight Hundred Eighty One Only) for **ASHWETA FONDEKAR**, for the creation of the following spoken tutorials on **LibreOffice Suite Impress**.

No.	Topic Name	Time
1	Custom Animation	0:12:26
2	Inserting Pictures and Objects	0:09:48

Calculation is pro-rata (based on the total time @Rs.4500 per 10 minutes)

Yours sincerely,

Admin Mohit
Spoken Tutorial Project,
IIT Bombay,
Mumbai

Postal Address:

Account Details:

Account Number:

IFSC :

Bank:

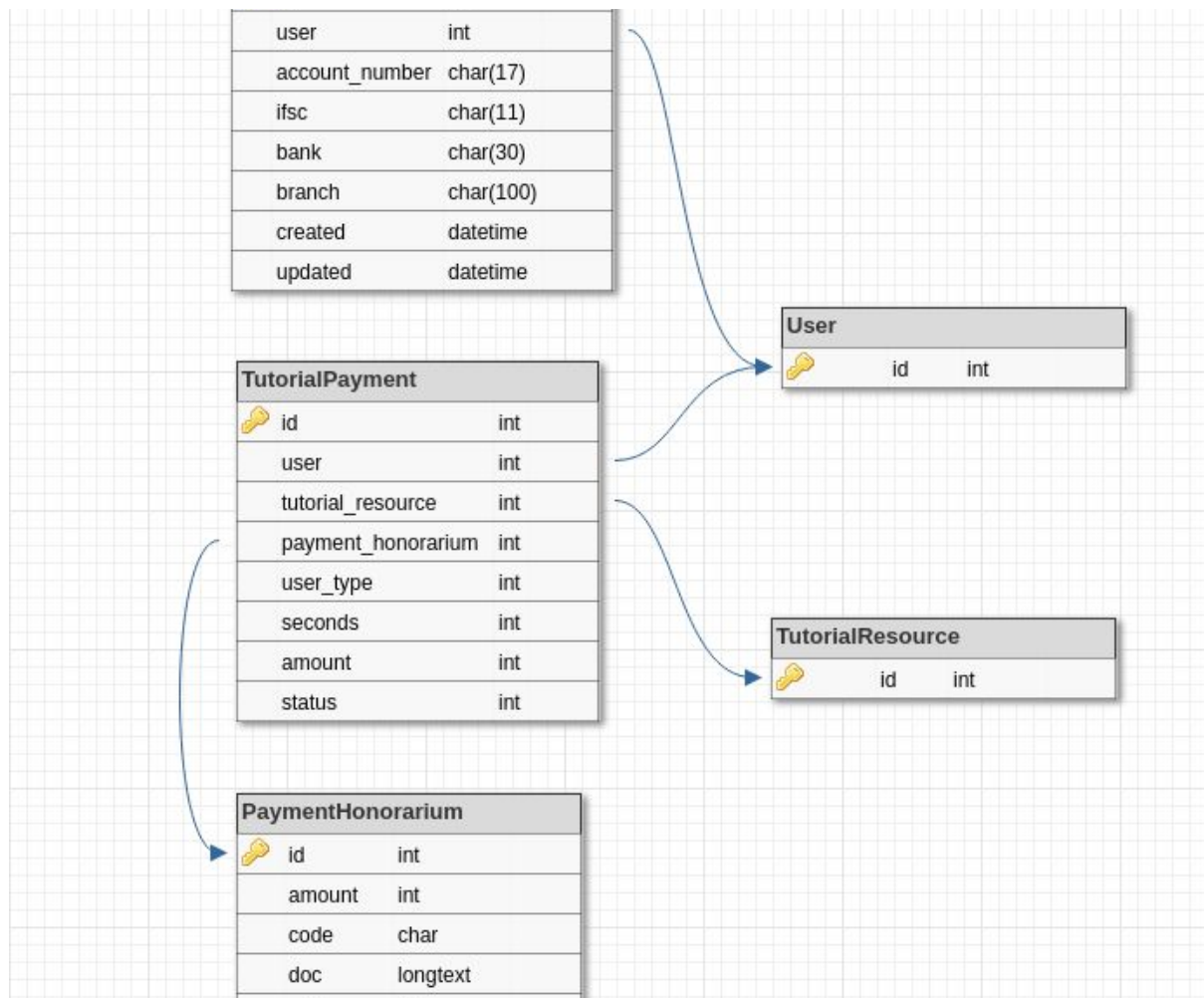
Branch:

Database Modifications

Two new models are created -

- TututorialPayment
- PaymentHonorarium
- BankDetail

The Schema diagram for modification in database is shown as below



Payment Gateway

At present the honorarium payment is processed by IIT-B Accounts section. But as a future aspects spoken tutorial can independently accept and dispatch payments by integrating payment gateway. Payment Gateways are software and servers that transmit Transaction information to Acquiring Banks and responses from Issuing Banks. While integrating payment gateway following things needs to be considered -

Hosted vs Integrated Gateway :

The integrated gateways let visitor enter their payment data while they are on website; the hosted gateways redirect users to the payment processor's platform. An integrated gateway allows users to input their payment data without leaving our website. For them this is a seamless process. But this type of payment gateway will work well only if our website is secure enough, since all payment details will be stored on your server.

Various Gateway Charges :

- Setup fee/registration fee (one-time payment);
- Monthly fee;
- Transaction fee/payment processing fee/credit card processing fee (charged as a percentage or a fixed fee on every transaction);
- Chargeback fee.

Suggested Gateways :

- UPI
- CitrusPay
- Razorpay (Route)
- Softpay
- PayU
- CCAvenue

Reference

- **Python Docx Documentation** - <https://python-docx.readthedocs.io/en/latest/index.html>
- **Django Documentation** - <https://docs.djangoproject.com/en/1.8/>