### Birla Institute of Technology & Science, Pilani

### Work-Integrated Learning Programmes Division

### Second Semester 2016-2017

### BITS ZG628T: Dissertation Outline

**ID No. :** 2014HT13292

**NAME OF THE STUDENT :** Pramod Kumar N

**EMAIL ADDRESS :** pramod974@gmail.com

**STUDENT’S EMPLOYING :** Coextrix Technologies Pvt. Ltd.,

**ORGANIZATION & LOCATION** Bangalore

**SUPERVISOR’S NAME :** Ramesh Krishnamoorthy

**SUPERVISOR’S EMPLOYING :** Coextrix Technologies Pvt. Ltd., **ORGANIZATION & LOCATION** Bangalore

**SUPERVISOR’S EMAIL** **:** ramesh.krishnamoorthy@coextrix.com

**ADDRESS**

**DISSERTATION TITLE** : Decision Engine Platform

**Decision Engine Platform**

### BITS ZG628T: Dissertation Outline

By

Pramod Kumar N

(2014HT13292)

# Dissertation work carried out at

## Coextrix Technologies Pvt. Ltd., Bangalore

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**BIRLA INSTITUTE OF TECHNOLOGY & SCIENCE**

**PILANI (RAJASTHAN)**

November, 2016

**Birla Institute of Technology & Science, Pilani**

**Work-Integrated Learning Programmes Division**

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**1. Broad Academic Area of Work:** Software Architectures

**2. Background** (Relevance of the project to the current work environment in the employing organization):

In modern day applications that provide more visibility into data irrespective of domain, require collecting data from several different sources. Collected data needs to be consolidated, normalized and then presented through an application.

There is a lack of correctness in the data aggregated owing to the nature of issues with the sources of data itself. Since the original data sources are doing nothing to clean up the data they provide or generally there is no standardization maintained across domains in context. Several applications are designed to clean up the data coming through various sources and allow customers to perform complex analytics on top of the data. Transforming and reconciliation process is extensively complex, but is required to create higher accuracy in the data. The transformation and reconciliation process comprises of multiple rules, interactions with multiple components in order to achieve the accuracy. In popular existing open source technologies the way the rules are written and configured is stereotype and hard to maintain owing to the quantity of rules modelled and its ability to scale in future.

There are not may mature applications available in the open source market where there is an end to end feature to model and maintain a Decision engine which could interact with multiple sources and components. Accurate data has been always sought for and is the next gen thing to get custom insights irrespective of domain. The underlying need to build a configurable and maintainable platform is highly compelling, where a Decision engine facilitates connecting to various sources and components in order to write domain specific configurable rules so as to achieve valuable decision in limited turnaround time.

1. **Objectives**:

There are no matured open source decision engines built using python which satisfies applications current needs. Hence objectives is to

* 1. To build, deploy and scale the existing stereotype rules/models to a more maintainable and configurable Decision engine.
  2. To provide an easy interface and framework to model rules on the fly build, test and deploy it without any manual intervention.

**4**. **Scope of work:**

1. Studying the existing decision engine environments and architectures.
2. Use open source tools and build an engine which can interact with various components.
3. Designing/updating existing applications to use the engine.
4. Validating the applications and analyzing the post deployment activities.
5. **Plan of work :**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl.No** | **Description of Work** | **Start date** | **End date** |
|  | **Literature Review and System Study**   * + Analysis on How a Decision System and Rules Engine is built   + Survey of existing models, tools and technology available | 1/08/2016 | 07/08/2016 |
|  | **Analysis and Design**   * + Identify the various components and architecture   + Design how the workflow needs to be handled | 08/08/2016 | 17/08/2016 |
|  | **Development** | 17/08/2016 | 02/10/2016 |
|  | **System Integration and Testing** | 03/10/2016 | 10/10/2016 |
|  | Testing the application | 11/10/2016 | 18/10/2016 |
|  | Documentation | 19/10/2016 | 25/10/2016 |

1. **Literature References:**

* Python Based Engine 1

https://nebrios.com/

* Python Based Engine 2

http://www.inrule.com/

* Java Based Engine 1

drools.org

* Python based Engine 3

pyke.sourceforge.net

* A Framework for Rule Engine

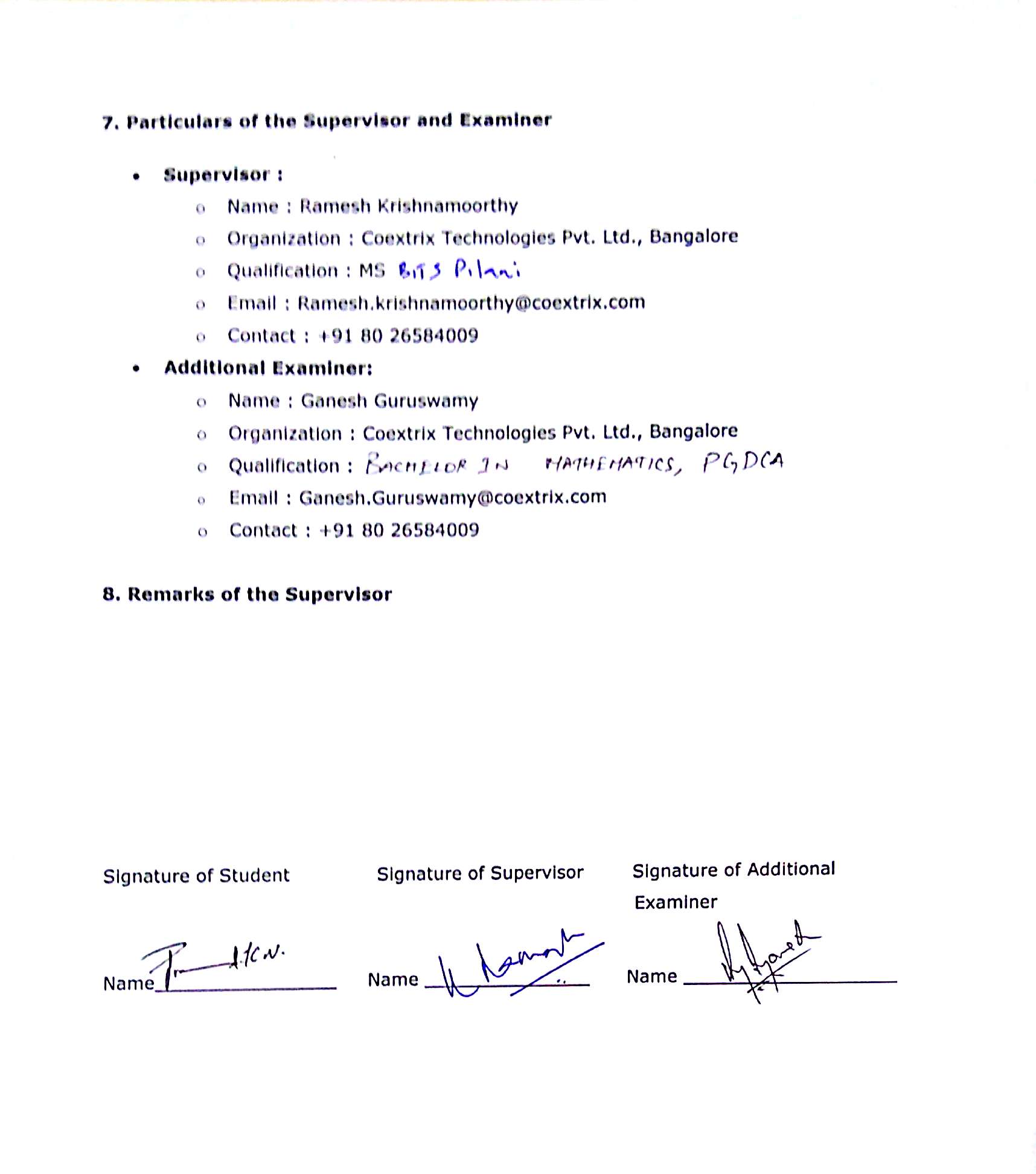
<https://pypi.python.org/pypi/Intellect>

* IBM Knowledge Processing and Decision engine https://www.ibm.com/support/knowledgecenter/SSQP76\_8.7.0/com.ibm.odm.dserver.rules.designer.run/executing\_decision\_topics/con\_decision\_engine.html
* Python Idiomatic Code

https://jeffknupp.com/blog/2013/12/28/improve-your-python-metaclasses-and-dynamic-classes-with-type/

* Python

www.python.org

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