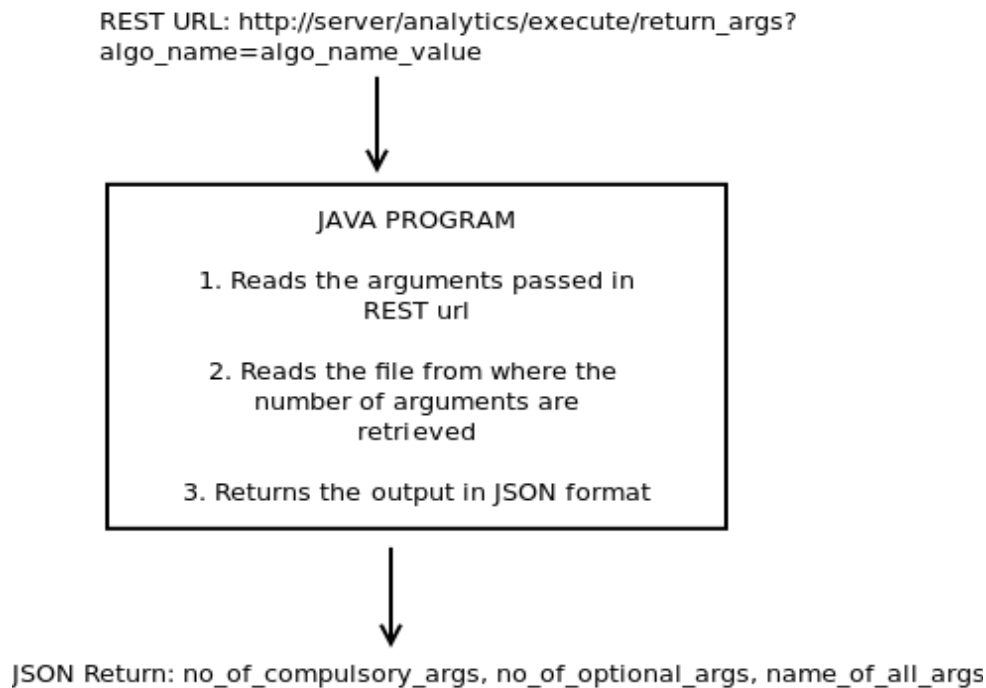## Algorithms required for Analytics:

The algorithms required for analytics are categorized in three types:

1. Executing existing algorithm
2. Adding new algorithm
3. Adding new framework

1. Executing existing algorithm:

REST URL: http://server/analytics/execute/return_args?
algo_name=algo_name_value

JAVA PROGRAM

1. Reads the arguments passed in REST url

2. Reads the file from where the number of arguments are retrieved

3. Returns the output in JSON format

JSON Return: no_of_compulsory_args, no_of_optional_args, name_of_all_args

Step 1: Input from user
  (1) Algorithm name
  (2) Dataset

Step 2: Extraction
  (1) Name of algorithm and number of parameters are given as arguments in REST url
  (2) Extract the arguments
  (3) Read algorithm name
  (4) Match the algorithm name with its framework

Step 3: Copying dataset
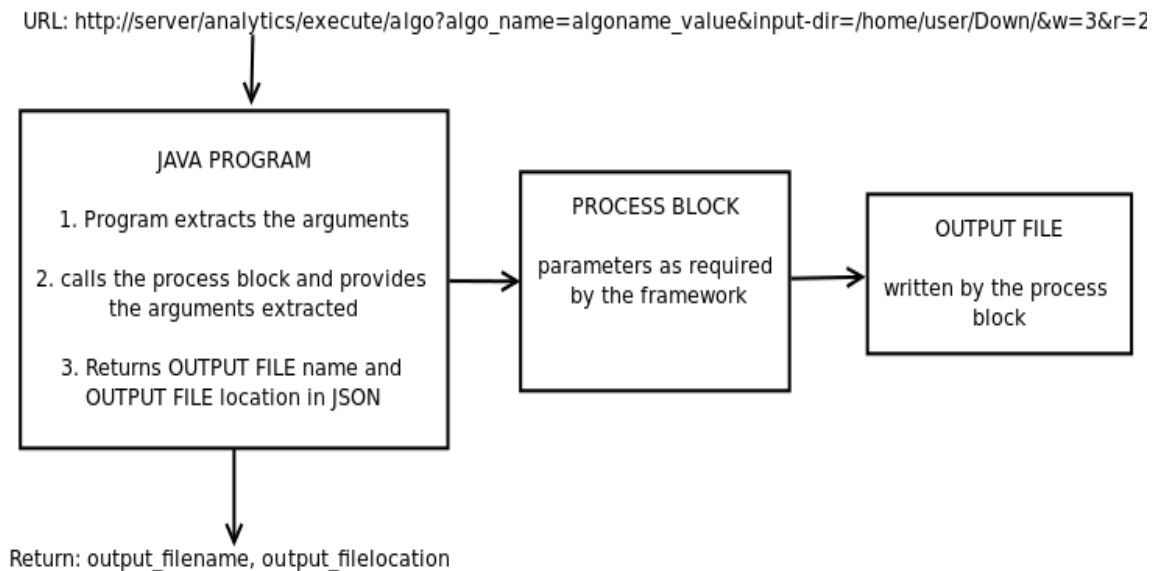 (1) Copy the dataset in HDFS

Step 4: Execution
  (1) Execute algorithm in the execution environment of framework
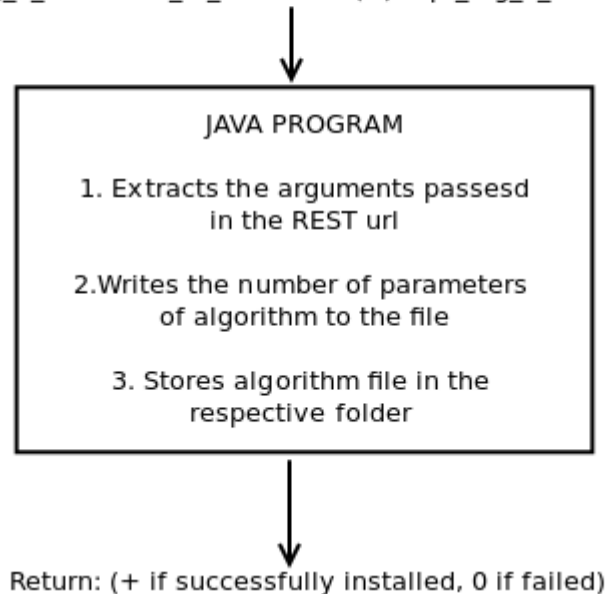
Step 5: Output
  (1) Output is written in a file by process block
  (2) Return output file name and location in JSON format

URL: http://server/analytics/execute/algo?algo_name=algoname_value&input-dir=/home/user/Down/&w=3&r=2

```
JAVA PROGRAM

1. Program extracts the arguments

2. calls the process block and provides
   the arguments extracted

3. Returns OUTPUT FILE name and
   OUTPUT FILE location in JSON
```

```
PROCESS BLOCK

parameters as required
by the framework
```

```
OUTPUT FILE

written by the process
block
```

Return: output_filename, output_filelocation

2. Adding new algorithm:

URL: http://server/analytics/add/algo?framework_name=framework_name_value
&algorithm_name=algorithm_name_value
&algorithm_file=algorithm_file_path
&no_of_algorithm_comp_args=2
&no_of_algorithm_opt_args=1
&comp_arg_1_name=input_dir_path(inp-dir)
&comp_arg_2_name=no_of_combiners(w)&opt_arg_1_name=no_of_reducers(r)

```
JAVA PROGRAM

1. Extracts the arguments passesd
   in the REST url

2.Writes the number of parameters
   of algorithm to the file

3. Stores algorithm file in the
   respective folder
```

Return: (+ if successfully installed, 0 if failed)

Step 1: Input from user
       (1) Algorithm name
       (2) Algorithm file
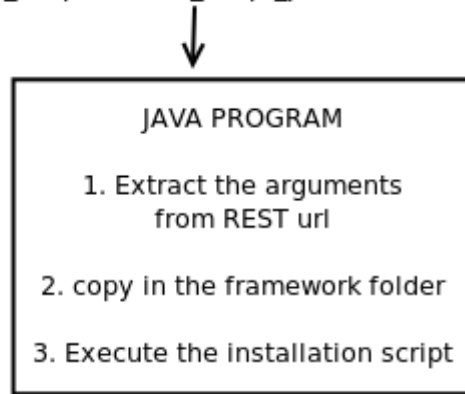   (3) Framework name
Step 2: Extraction
       (1) Name of algorithm, framework name and number of parameters are given as
           arguments in REST url
       (2) Extract the arguments
       (3) Locate the algorithm file
       (4) Match the algorithm name with its framework

Step 3: Output
   (1) Show message for successful addition of algorithm in JSON format

3. Adding new framework:

URL: http://server/analytics/add/framework?framework_name=framework_name_value
  &compessed_file=compressed_file_path
  &install_script=install_script_path

```
JAVA PROGRAM

1. Extract the arguments
     from REST url

2. copy in the framework folder

3. Execute the installation script
```

Return: (+ if successfully installed, 0 if failed)

Step 1: Input from user
   (1) Framework name
   (2) Compressed file
   (3) Installation script
Step 2: Extraction
   (1) Extract the arguments from REST url
   (2) Copy the compessed file in the framework folder
   (3) Execute the installation script

Step 3: Output
   (1) Show message for successful addition of algorithm in JSON format