

BRAND > code

Shane Curcuru, VP Brand Management, ASF

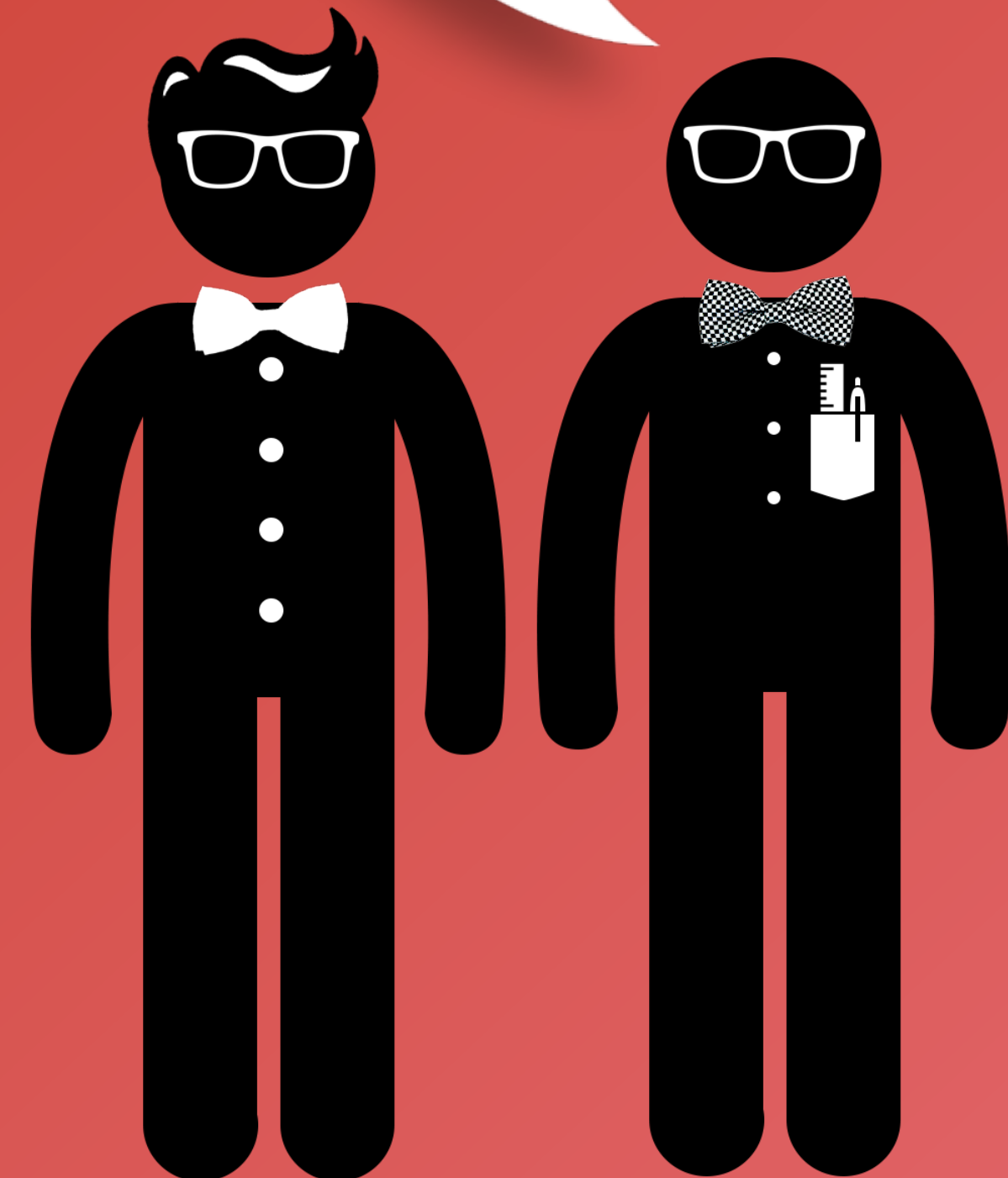
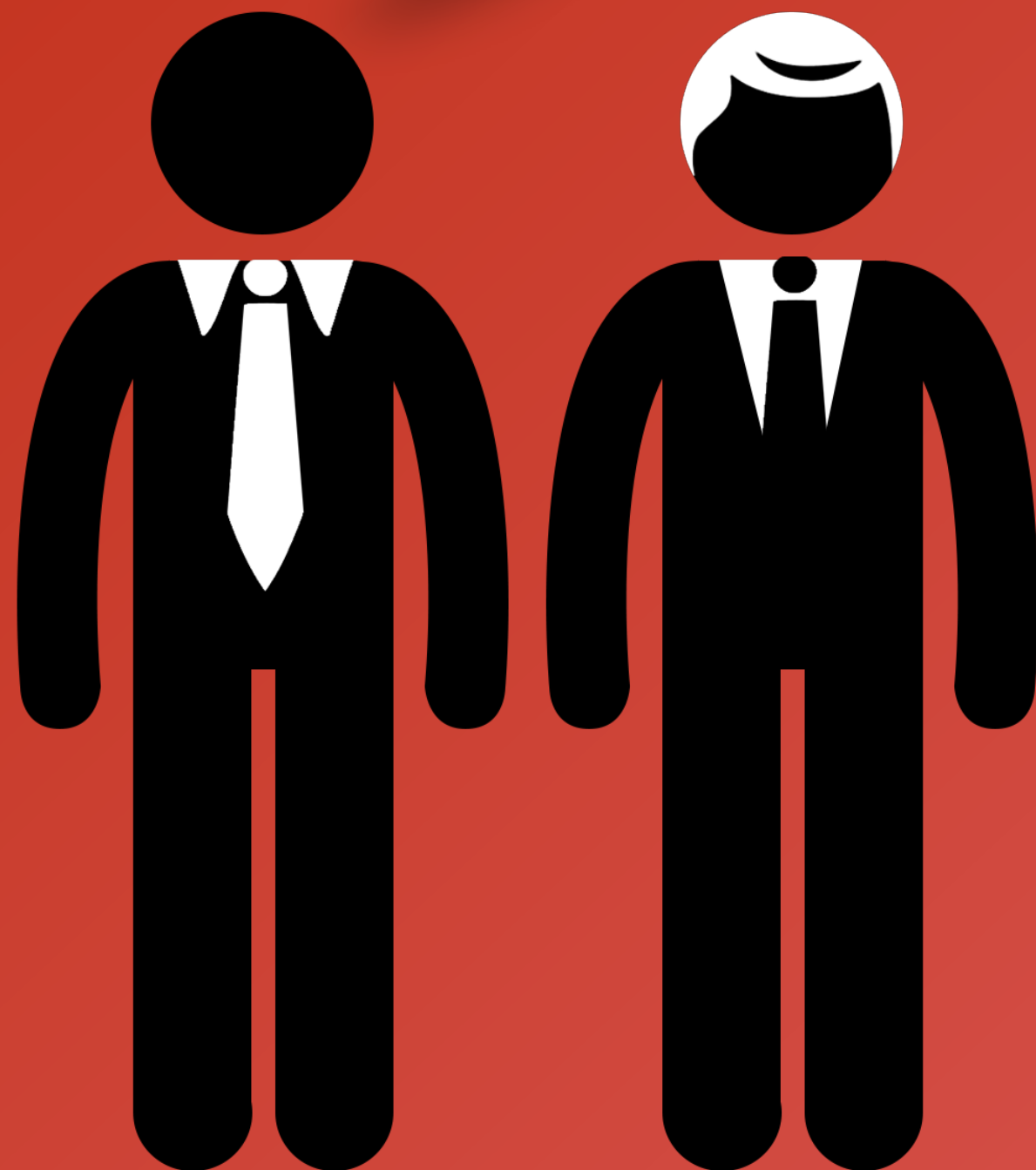
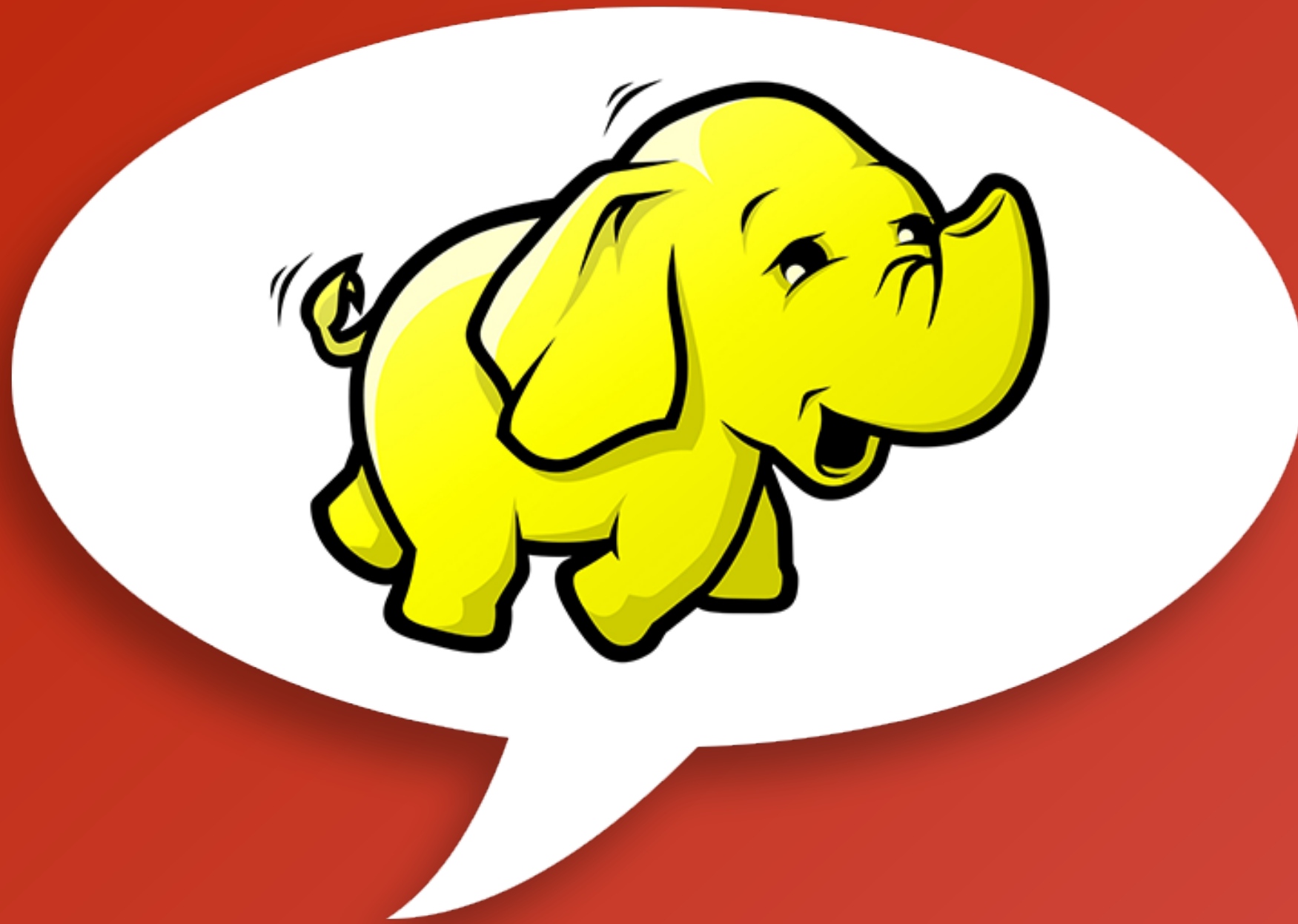


APACHE



APACHE®







```
<7>
<8> int mac_carthy (int a)
<9> {
<10>     int b;
<11>

    <Union 223 envs> [mac_carthy:1;mac_carthy.c]::<{ <mac_carthy,(Global), Bot >, <mac_carthy_return,(Global),i_91. . .101.> }::<{ <a,(Local),i_-10. . .111.>, <b,(Local), Bot > }::<{
};<{ No signal }::<{ To do }[mac_carthyG mac_carthy_returnG ] [aL bL ] []
<12>     if (a > 100)
    <Union 223 envs> [mac_carthy:4;mac_carthy.c]::<{ <mac_carthy,(Global), Bot >, <mac_carthy_return,(Global),i_91. . .101.> }::<{ <a,(Local),i_-10. . .111.>, <b,(Local), Bot > }::<{
};<{ No signal }::<{ To do }[mac_carthyG mac_carthy_returnG ] [aL bL ] []
<13>     {

    <Union 223 envs> [mac_carthy:5;mac_carthy.c]::<{ <mac_carthy,(Global), Bot >, <mac_carthy_return,(Global),i_91. . .100.> }::<{ <a,(Local),i_102. . .111.>, <b,(Local), Bot > }::<{
};<{ No signal }::<{ To do }[mac_carthyG mac_carthy_returnG ] [aL bL ] []
<14>     return (a-10);
    <Union 223 envs> [mac_carthy:15;mac_carthy.c]::<{ <mac_carthy,(Global), Bot >, <mac_carthy_return,(Global),i_91. . .101.> }::<{ <a,(Local),i_-10. . .111.>, <b,(Local),i_91. . .91
.> }::<{ No signal }::<{ To do }[mac_carthyG mac_carthy_returnG ] [aL bL ] []
<15>     }
<16>     else
<17>     {

    <Union 223 envs> [mac_carthy:9;mac_carthy.c]::<{ <mac_carthy,(Global), Bot >, <mac_carthy_return,(Global),i_91. . .100.> }::<{ <a,(Local),i_-10. . .100.>, <b,(Local), Bot > }::<{
};<{ No signal }::<{ To do }[mac_carthyG mac_carthy_returnG ] [aL bL ] []
<18>     b = mac_carthy (mac_carthy (a+1));
    <Union 223 envs> [mac_carthy:14;mac_carthy.c]::<{ <mac_carthy,(Global), Bot >, <mac_carthy_return,(Global),i_91. . .91.> }::<{ <a,(Local),i_-10. . .100.>, <b,(Local),i_91. . .91
.> }::<{ No signal }::<{ To do }[mac_carthyG mac_carthy_returnG ] [aL bL ] []

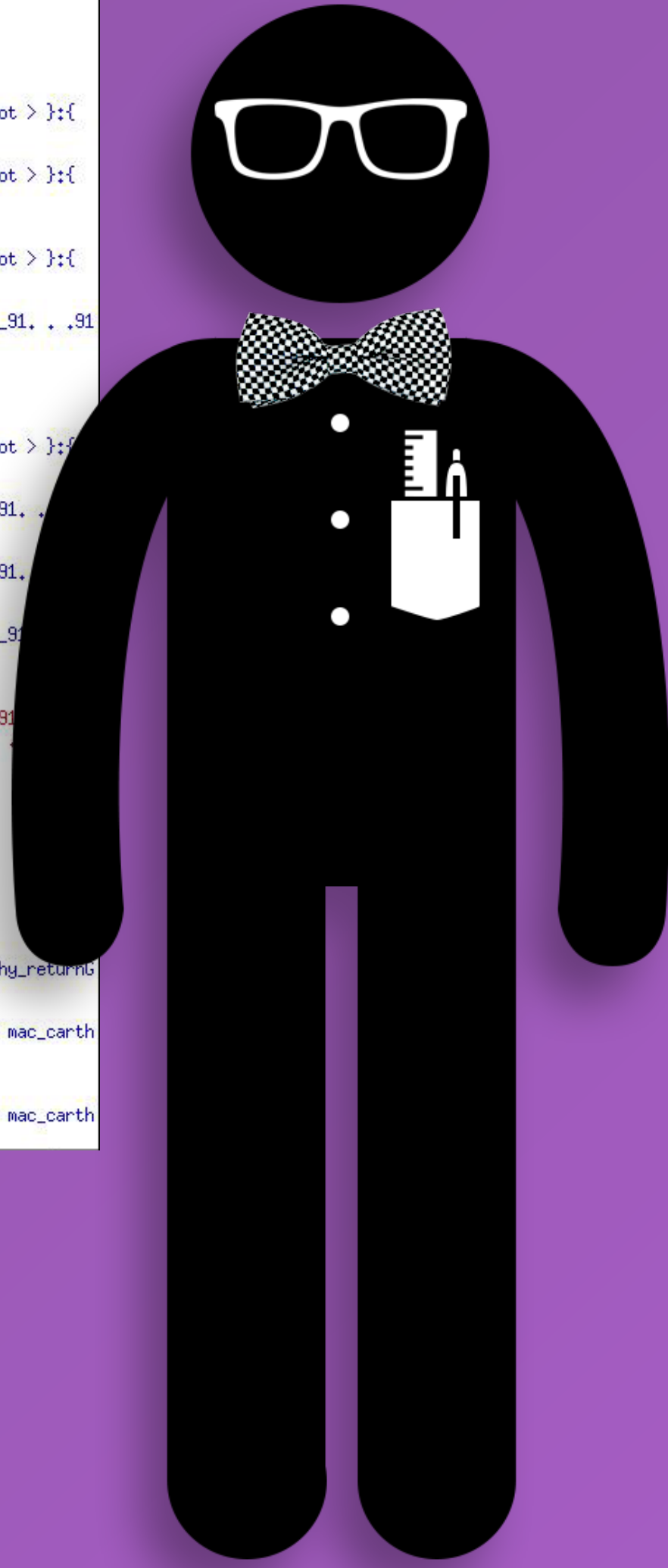
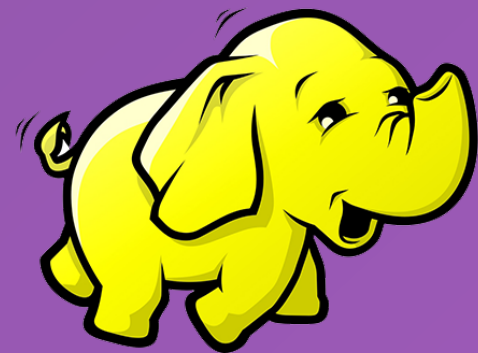
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.> }::<{ No signal }::<{ To do }[mac_carthyG mac_carthy_returnG ] [aL bL ] []
    return (b);
    <Union 223 envs> [mac_carthy:15;mac_carthy.c]::<{ <mac_carthy,(Global), Bot >, <mac_carthy_return,(Global),i_91. . .101.> }::<{ <a,(Local),i_-10. . .111.>, <b,(Local),i_91. . .91
.> }::<{ No signal }::<{ To do }[mac_carthyG mac_carthy_returnG ] [aL bL ] []

    of function
    <Union 223 envs> [mac_carthy:15;mac_carthy.c]::<{ <mac_carthy,(Global), Bot >, <mac_carthy_return,(Global),i_91. . .101.> }::<{ <a,(Local),i_-10. . .111.>, <b,(Local),i_91. . .91
.> }::<{ No signal }::<{ To do }[mac_carthyG mac_carthy_returnG ] [aL bL ] []
    <x1,(Local),i_0. . .1.>, <x2,(Local),i_100. . .100.>, <x3,(Local),i_-10. . .-10.>, <x4,(Local),i_10. . .10.>, <x5,(Local),i_91. . .101.>, <x6,(Local),i_1. . .1
.>, <x7,(Local),i_11. . .11.> }::<{ No signal }::<{ To do }[mac_carthyG mac_carthy_returnG ] [aL bL ] [.x2L .x1L .x4L .x3L .x7L .x6L .x5L ]
    }
    }

    int main (int argc, char * argv[])
    {
        int x;

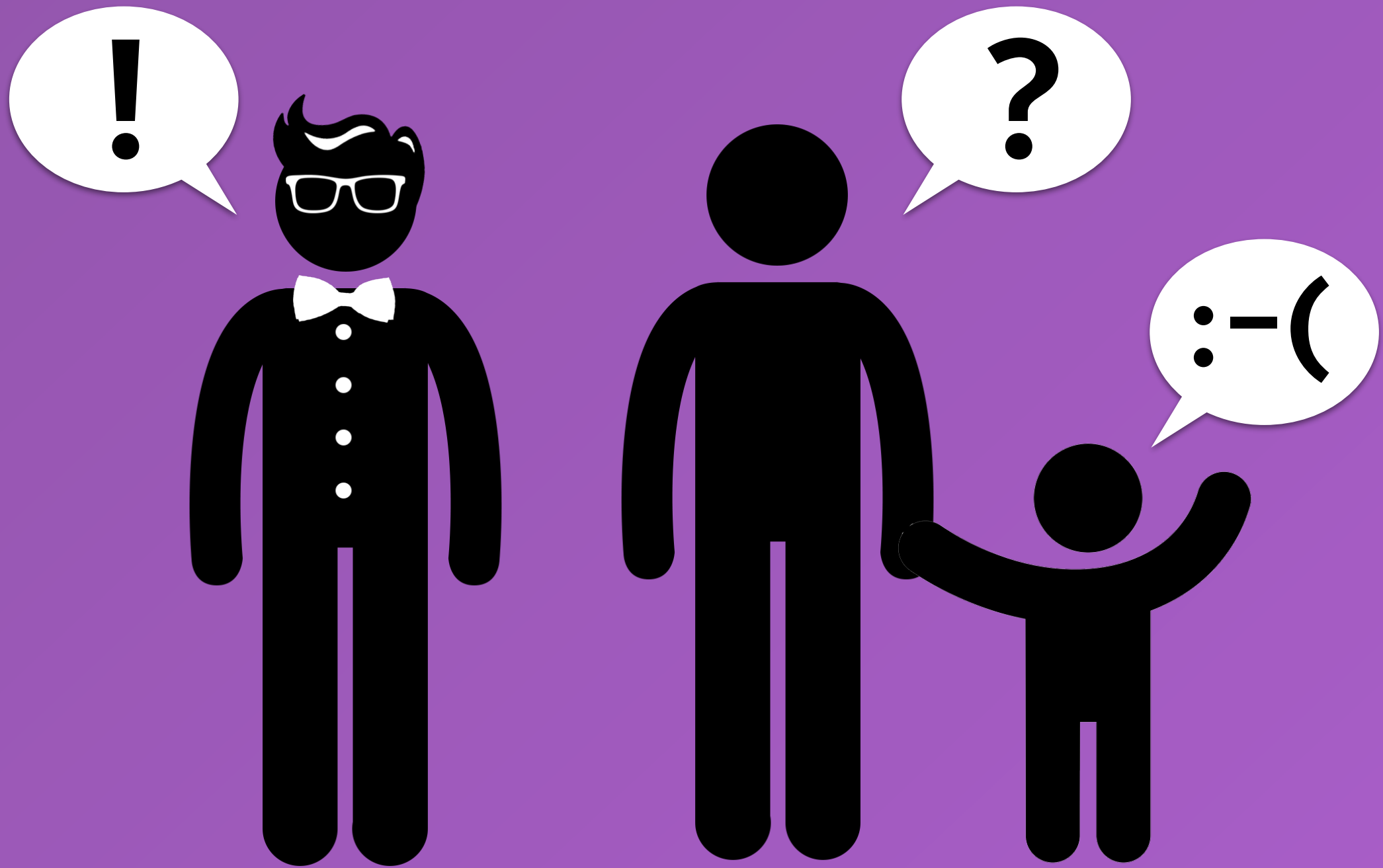
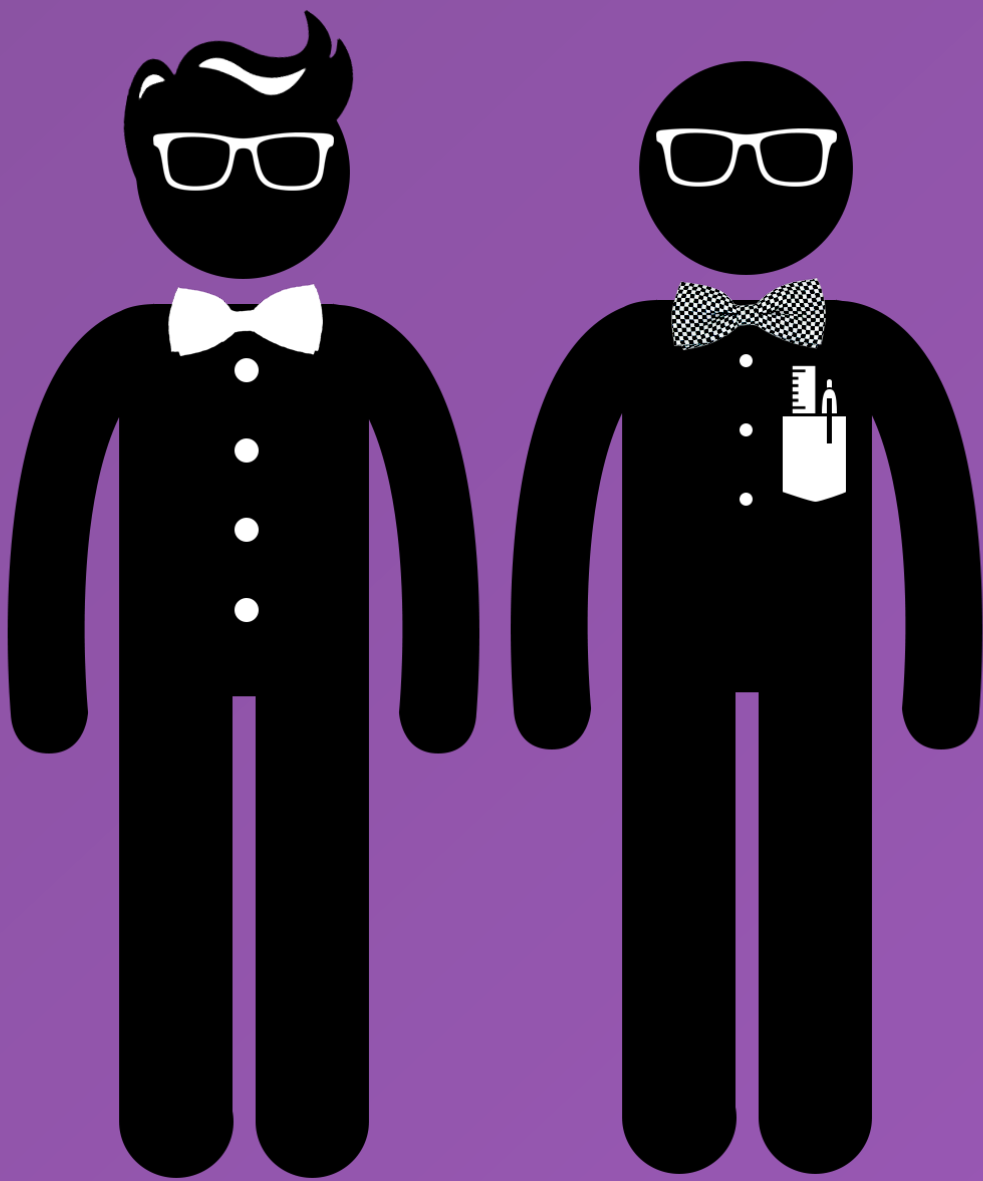
    <Union 1 envs> [main:1;mac_carthy.c]::<{ <mac_carthy_return,(Global), Bot >, <main,(Global), Bot > }::<{ <x,(Local), Bot > }::<{ };<{ No signal }::<{ To do }[mainG mac_carthy_returnG
] [xL ] []
<28>     x = -10;
    <Union 1 envs> [main:3;mac_carthy.c]::<{ <mac_carthy_return,(Global), Bot >, <main,(Global), Bot > }::<{ <x,(Local),i_-10. . .-10.> }::<{ };<{ No signal }::<{ To do }[mainG mac_carth
y_returnG ] [xL ] []
<29>

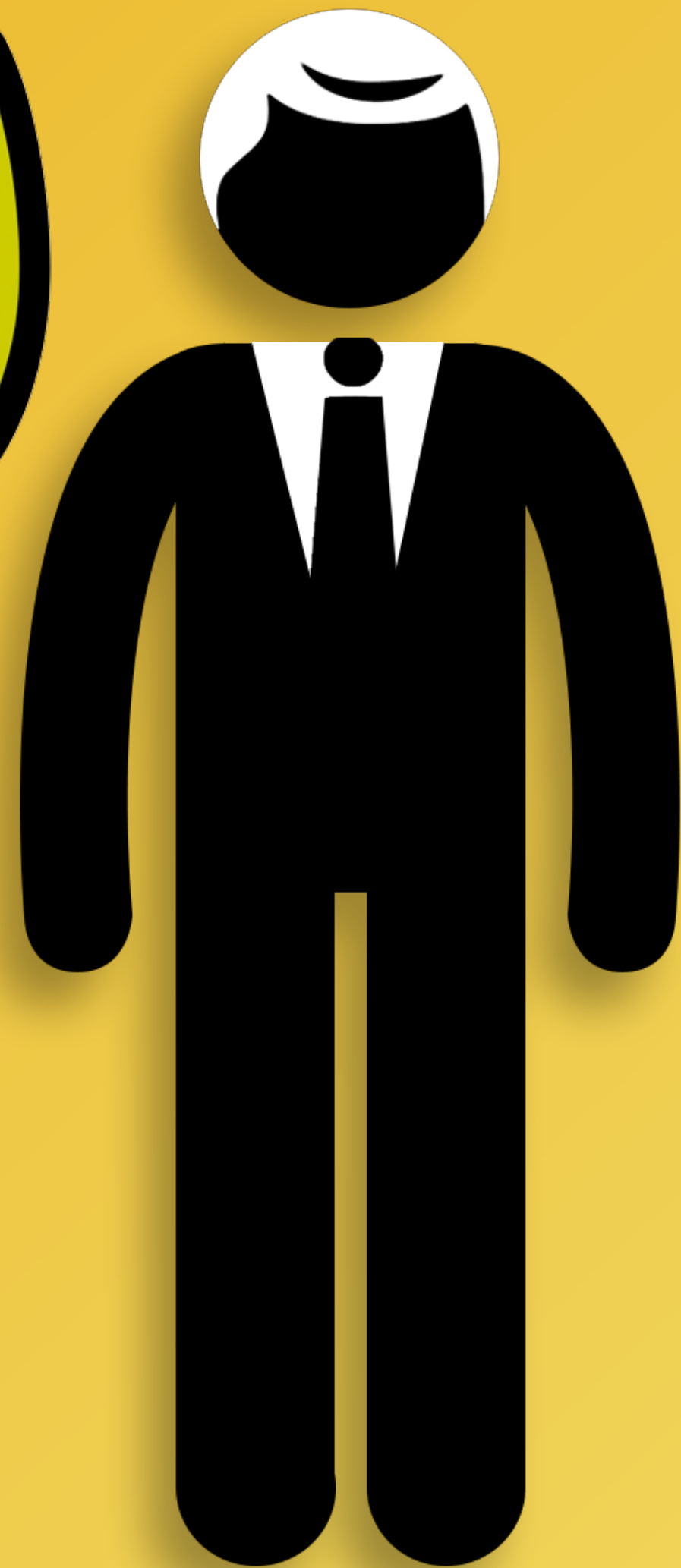
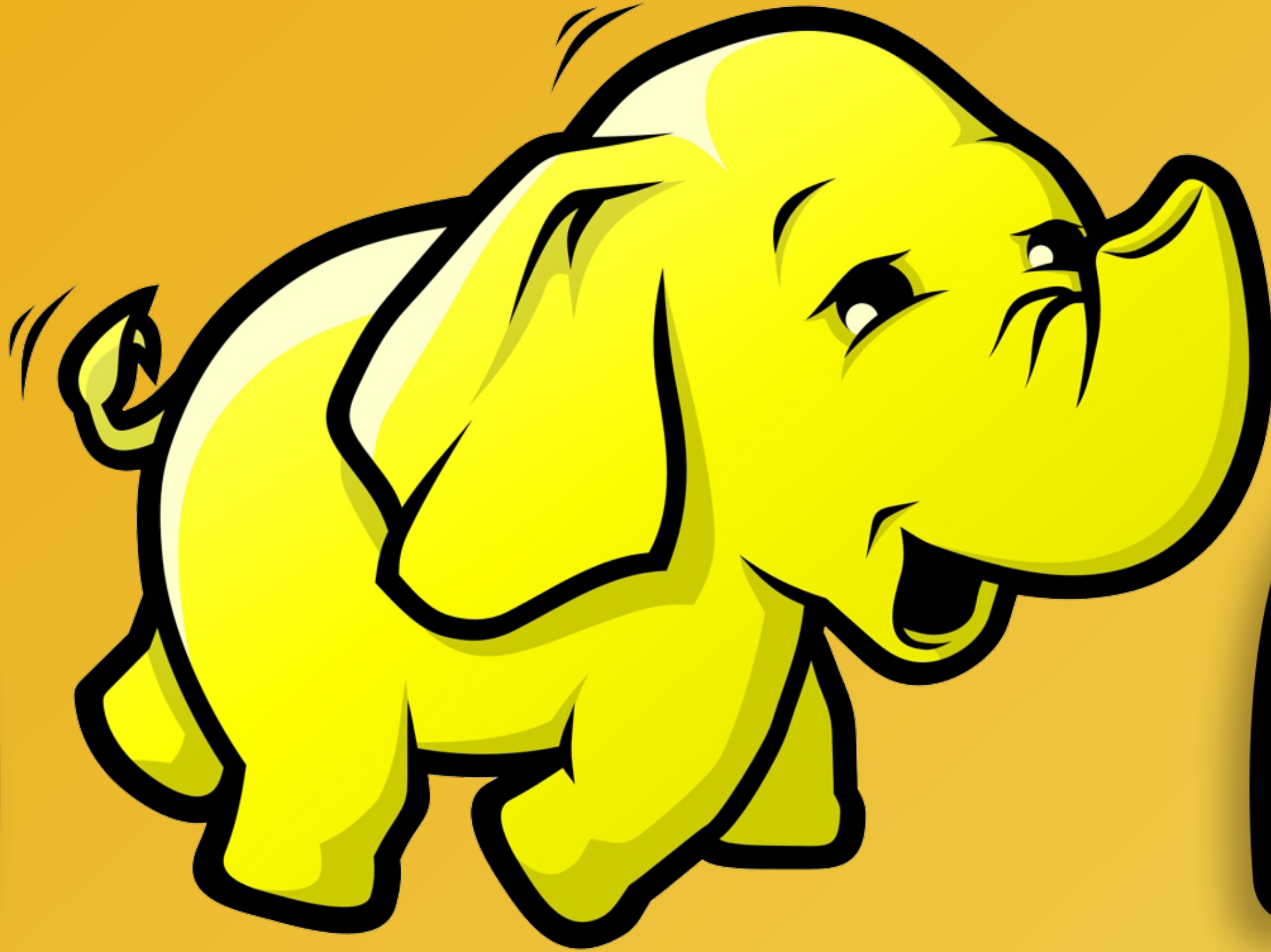
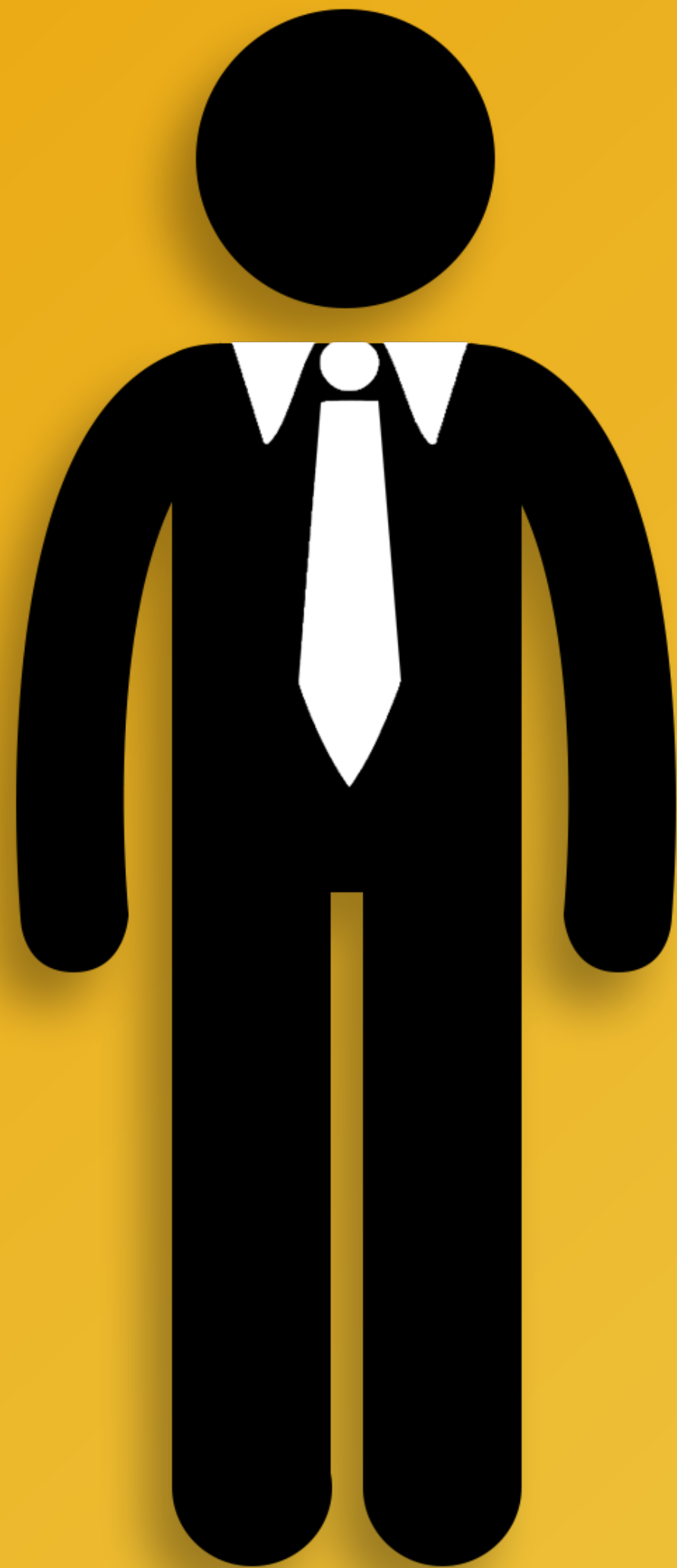
    <Union 1 envs> [main:3;mac_carthy.c]::<{ <mac_carthy_return,(Global), Bot >, <main,(Global), Bot > }::<{ <x,(Local),i_-10. . .-10.> }::<{ };<{ No signal }::<{ To do }[mainG mac_carth
y_returnG ] [xL ] []
```



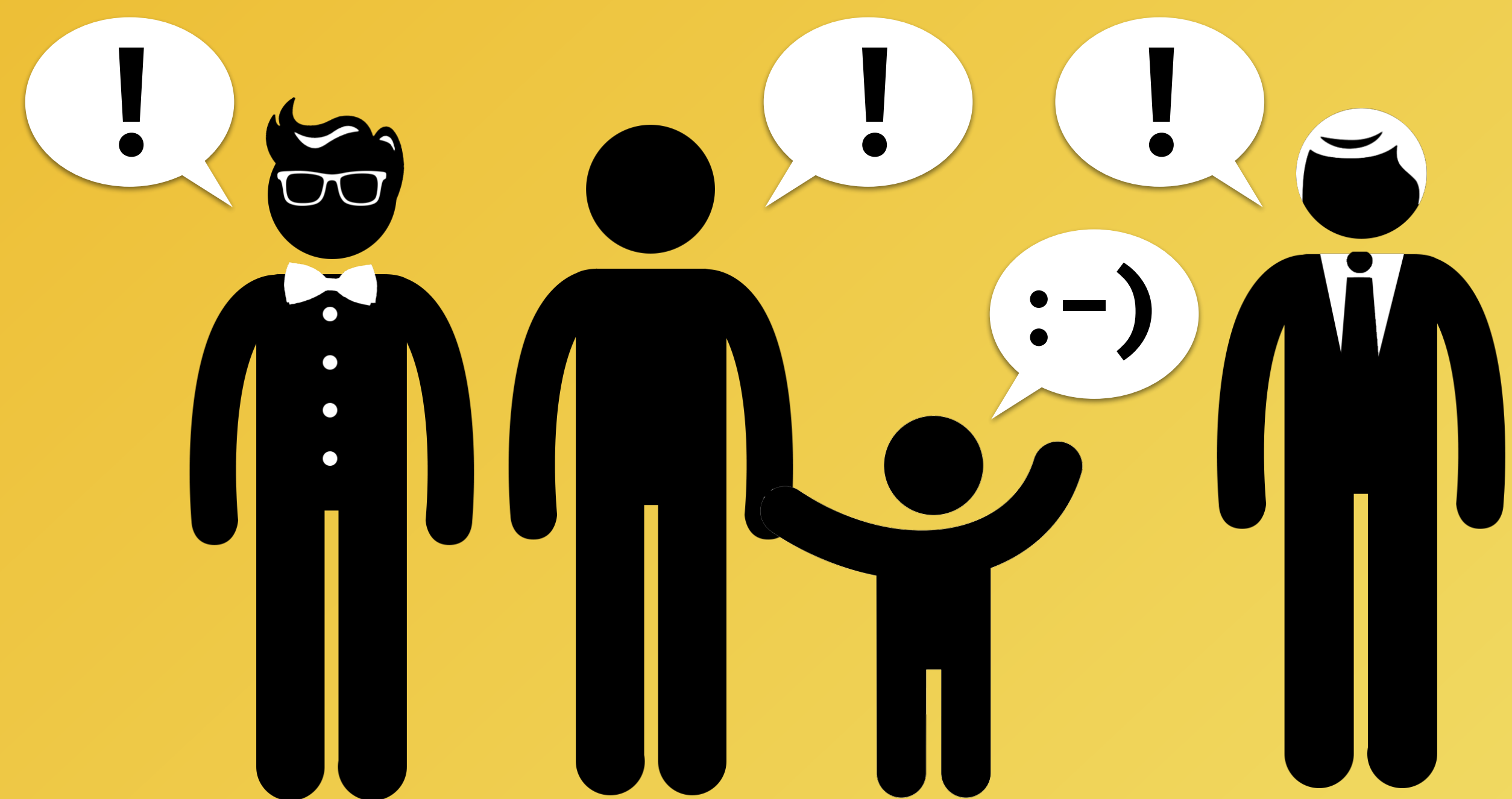
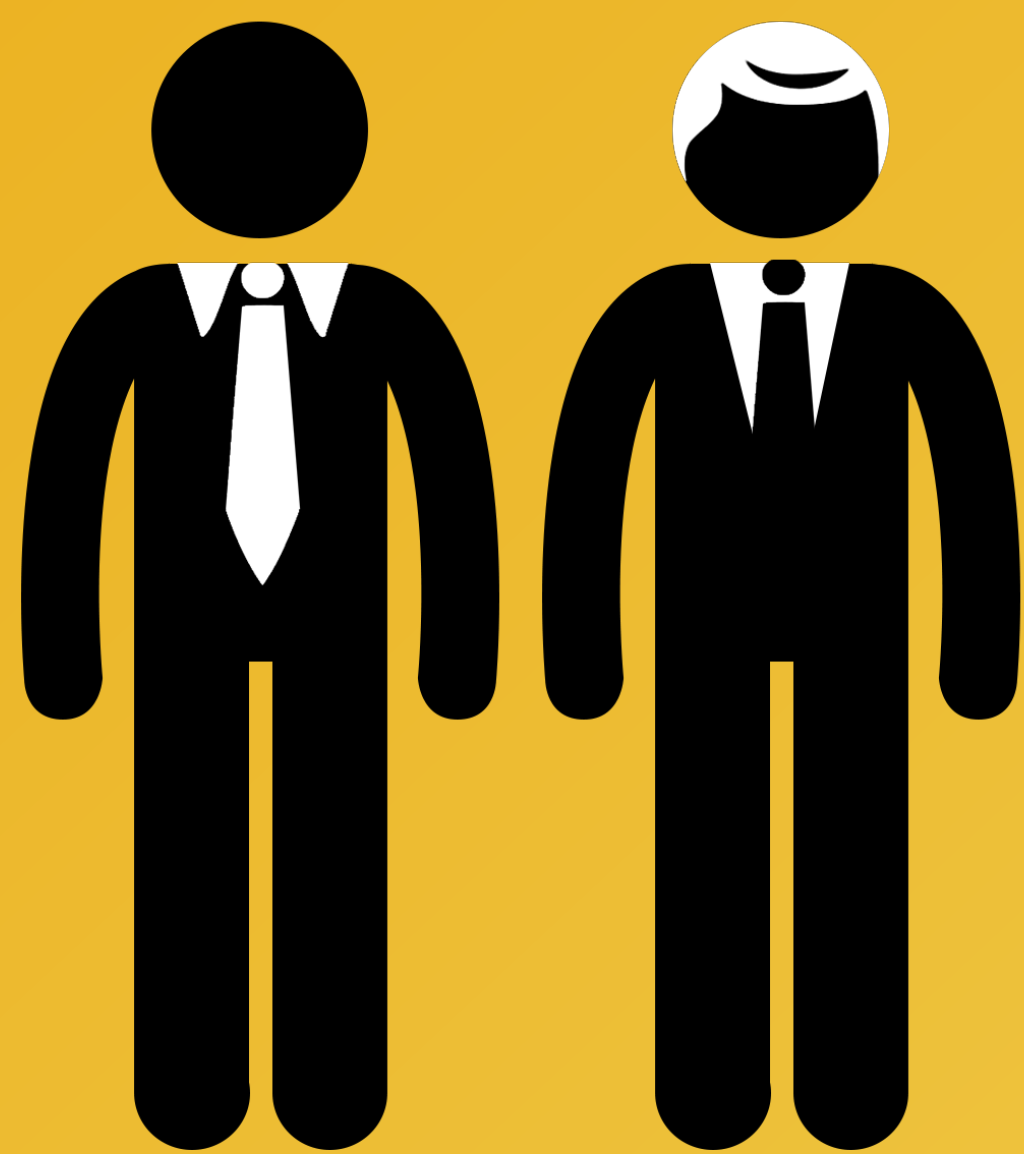
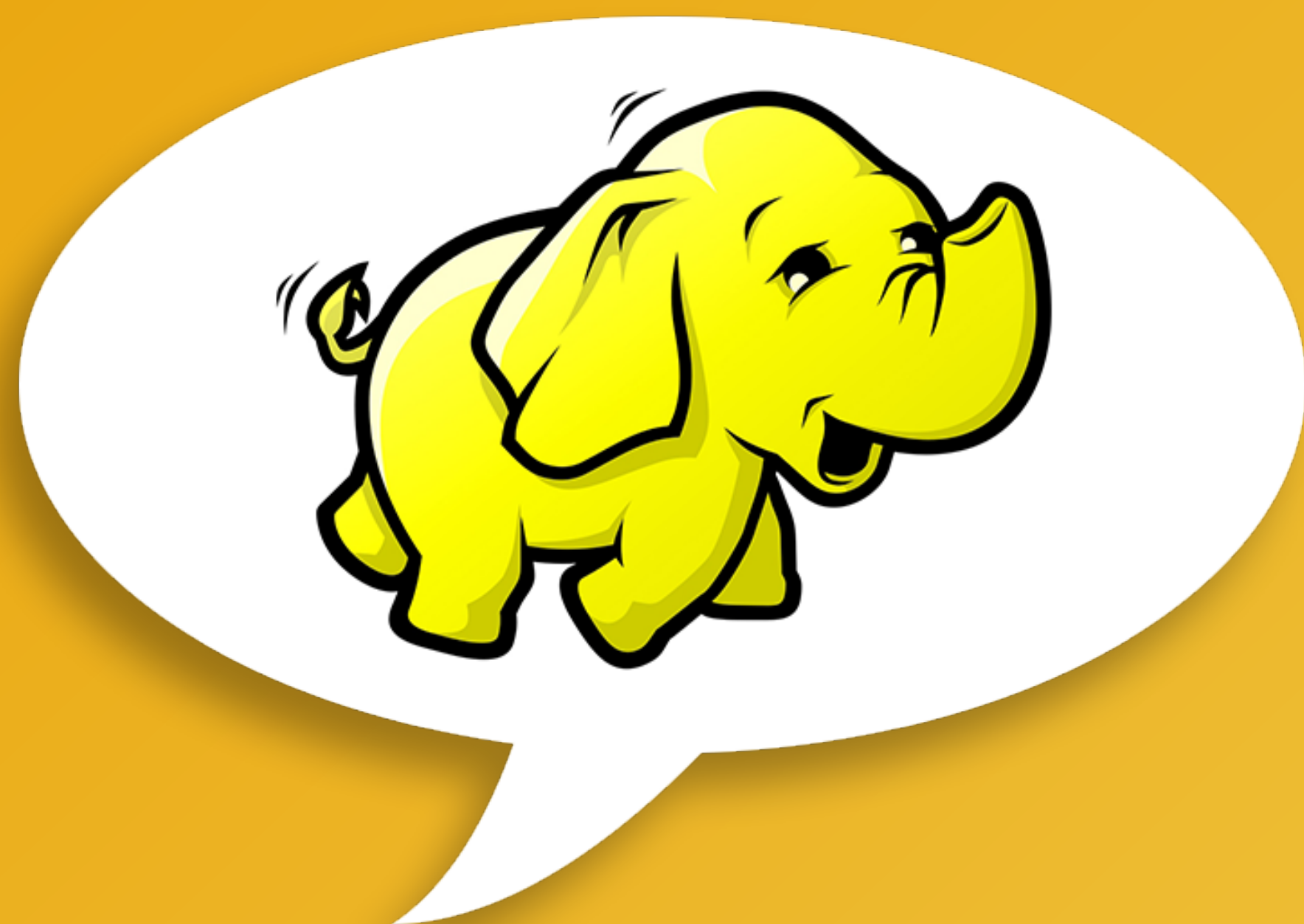

```
public static void main(String[] args) {
    String[] argsTemp = { "project_test/input" };

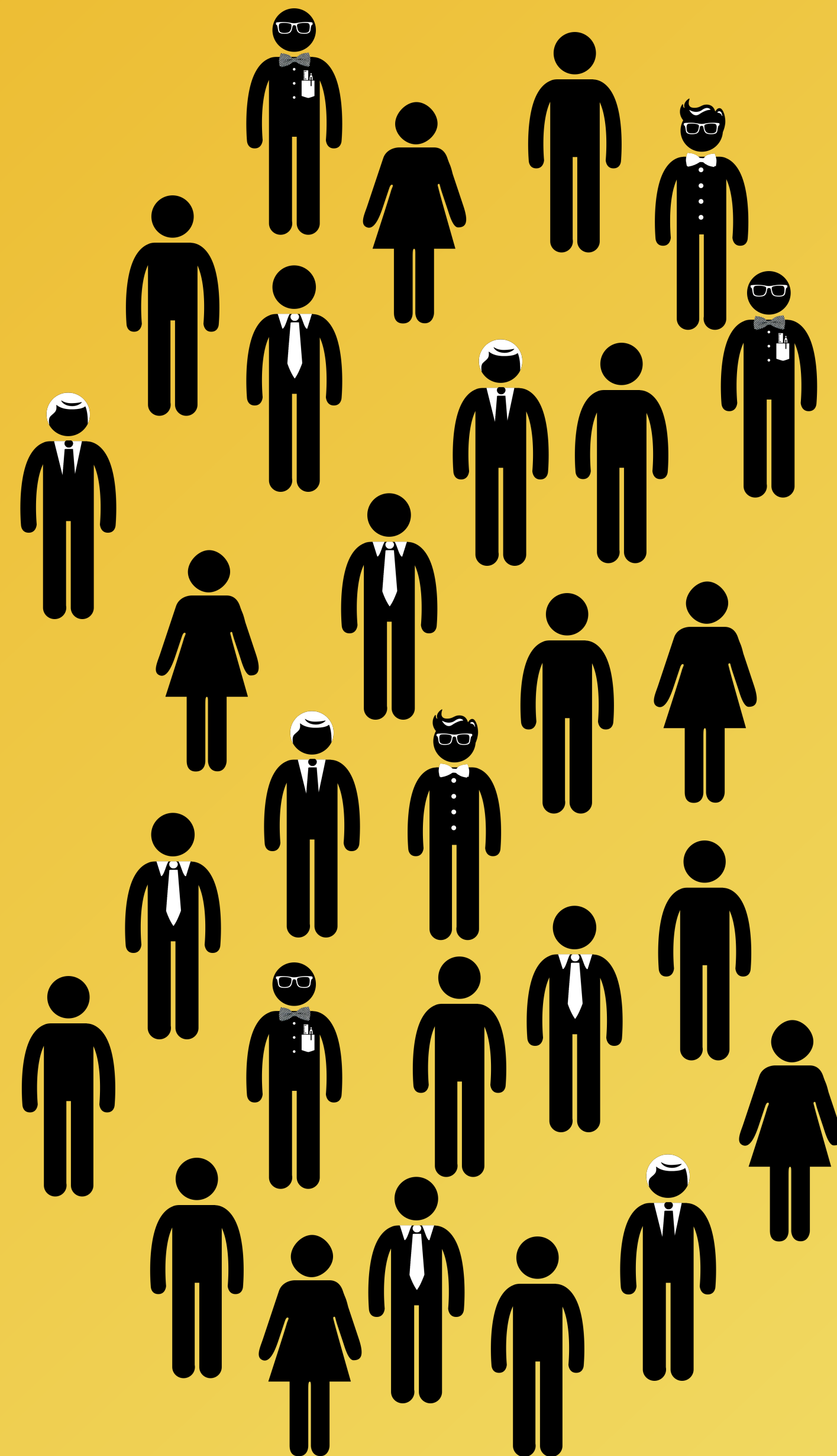
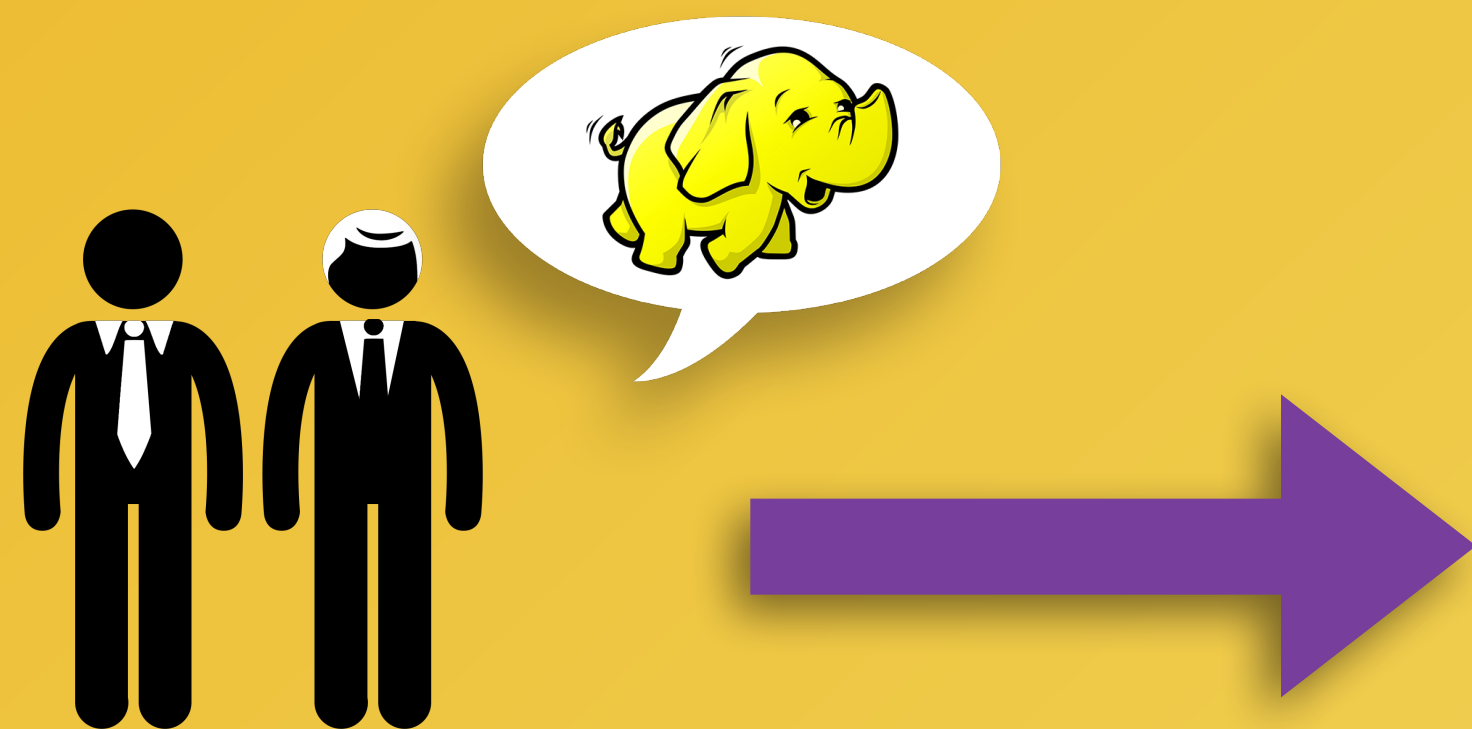
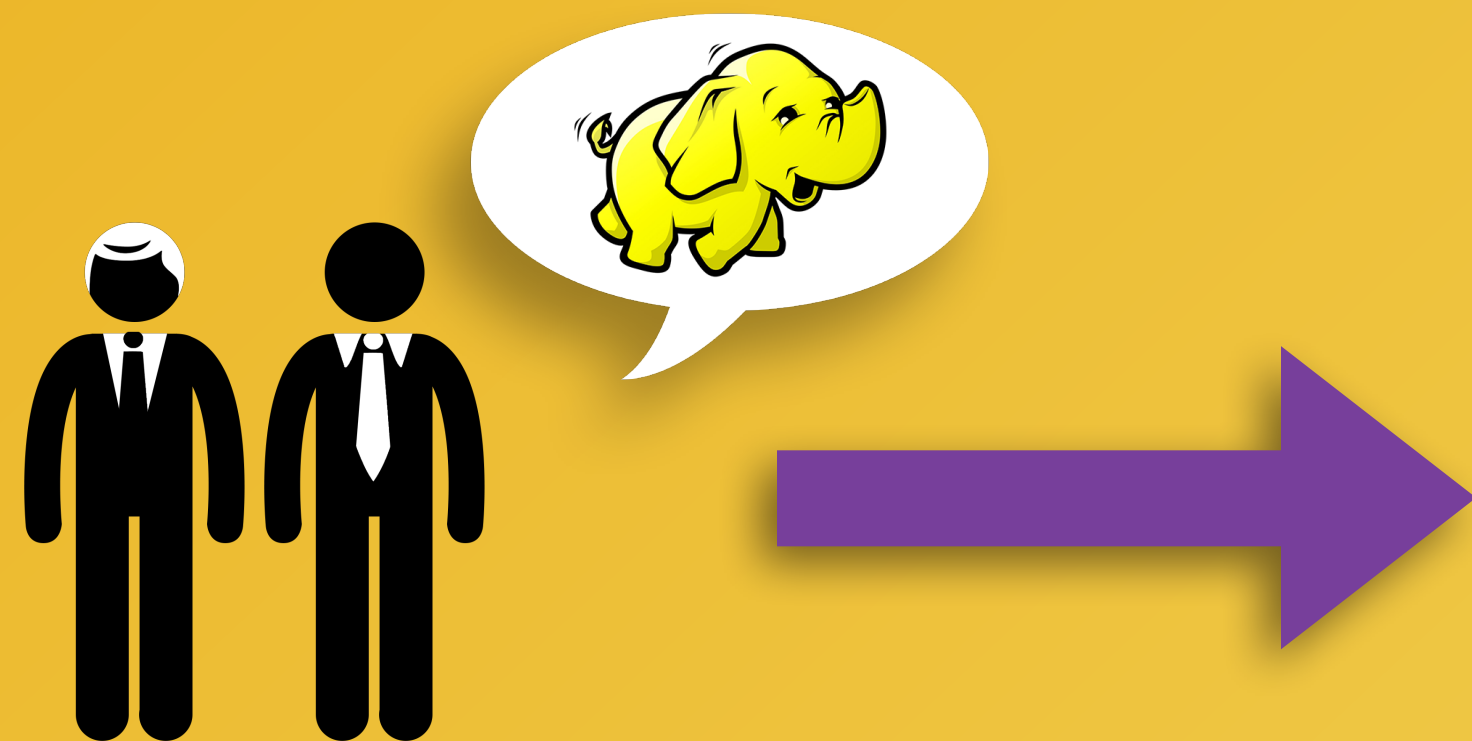
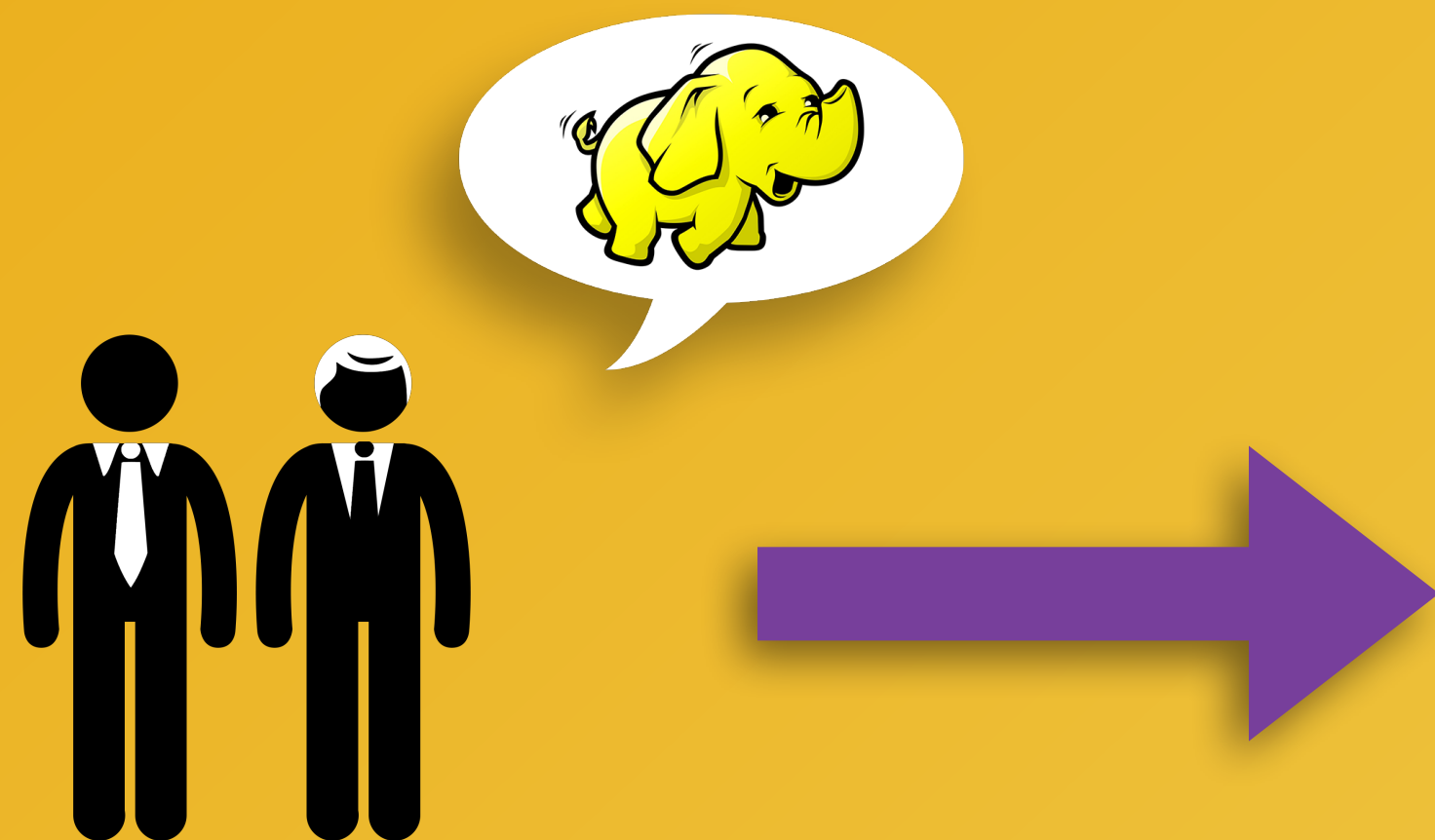
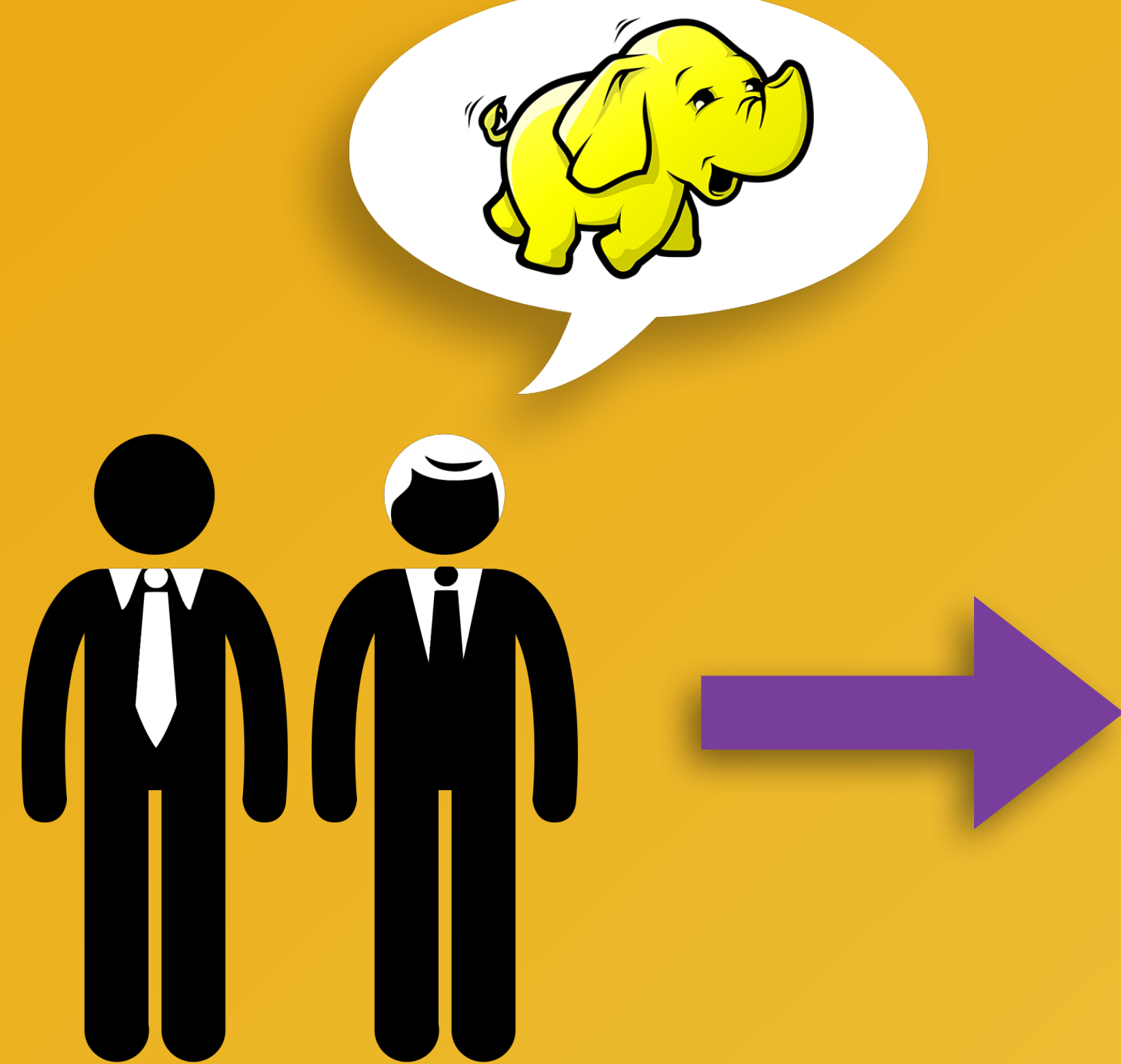
    Configuration conf = new Configuration();
    conf.set("fs.default.name", "hdfs://localhost:54311");
    conf.set("mapred.job.tracker", "localhost:54311");
    conf.set("mapred.jar", "JAR_Files/Hadoop_Example_04.jar");
    String[] otherArgs = new GenericOptionsParser(conf, argsTemp).getOtherArgs();
    Job job = new Job(conf, "Example Hadoop 0.20.2 WordCount");
    job.setJarByClass(Hadoop_Example_04.class);
    job.setMapperClass(TokenCounterMapper.class);
    job.setReducerClass(TokenCounterReducer.class);
    job.setOutputKeyClass(Text.class);
    job.setOutputValueClass(IntWritable.class);
    Path jobPath = new Path(job.getConfiguration().get("mapred.job.name"));
    Path outputPath = new Path(job.getConfiguration().get("mapred.job.name"));
}
```

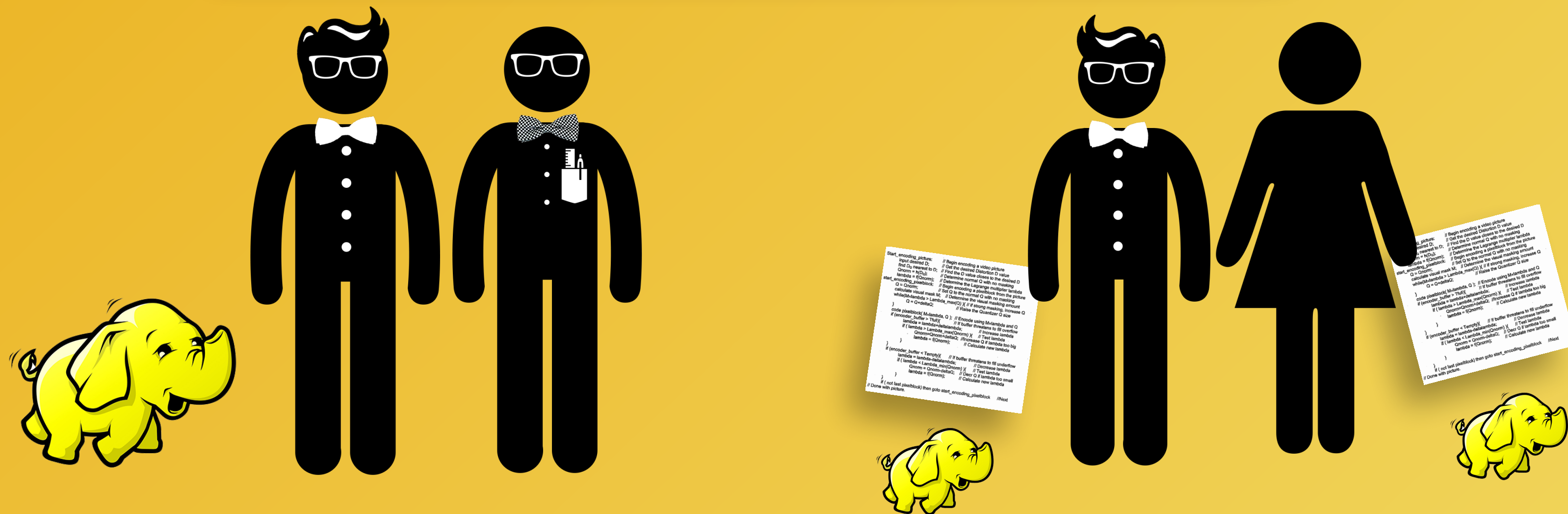


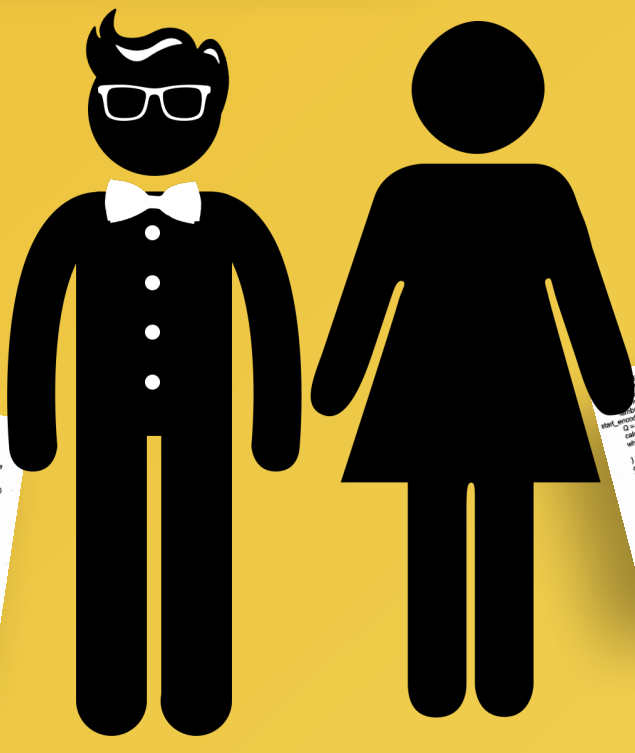
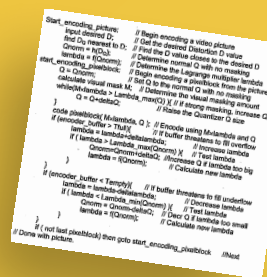
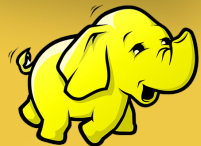
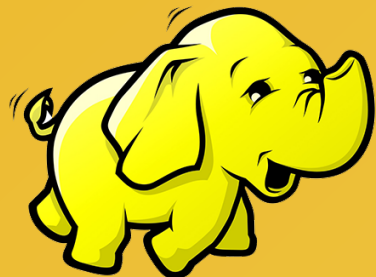


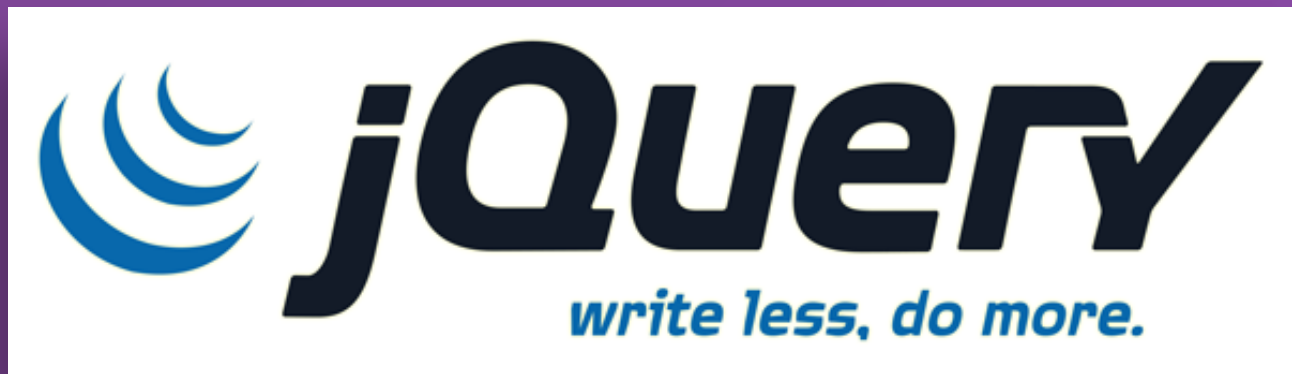
```
Start_encoding_picture: // Begin encoding a video picture
    input desired D; // Get the desired Distortion D value
    find D_0 nearest to D; // Find the D value closest to the desired D
    Qnorm = 1/(D_0); // Determine normal Q with no masking
    lambda = f(Qnorm); // Determine the Lagrange multiplier lambda
start_encoding_pixelblock: // Begin encoding a pixelblock from the picture
    Q = Qnorm; // Set Q to the normal Q with no masking
    calculate visual mask M; // Determine the visual masking amount
    while(M*lambda > Lambda_max(Q)) { // If strong masking, increase Q
        Q = Q*deltaQ; // Raise the Quantizer Q size
    }
    code pixelblock( M*lambda, Q ); // Encode using M*lambda and Q
    if (encoder_buffer > Tbuf){ // If buffer threatens to fill overflow
        lambda = lambda*delta_lambda; // Increase lambda
        if ( lambda > Lambda_max(Qnorm) ){ // Test lambda
            Qnorm = Qnorm*deltaQ; // Increase Q if lambda too big
            lambda = f(Qnorm); // Calculate new lambda
        }
    }
    if (encoder_buffer < Tempty){ // If buffer threatens to fill underflow
        lambda = lambda*delta_lambda; // Decrease lambda
        if ( lambda < Lambda_min(Qnorm) ){ // Test lambda
            Qnorm = Qnorm*deltaQ; // Decr Q if lambda too small
            lambda = f(Qnorm); // Calculate new lambda
        }
    }
    if ( not last pixelblock ) then goto start_encoding_pixelblock //Next
// Done with picture.
```

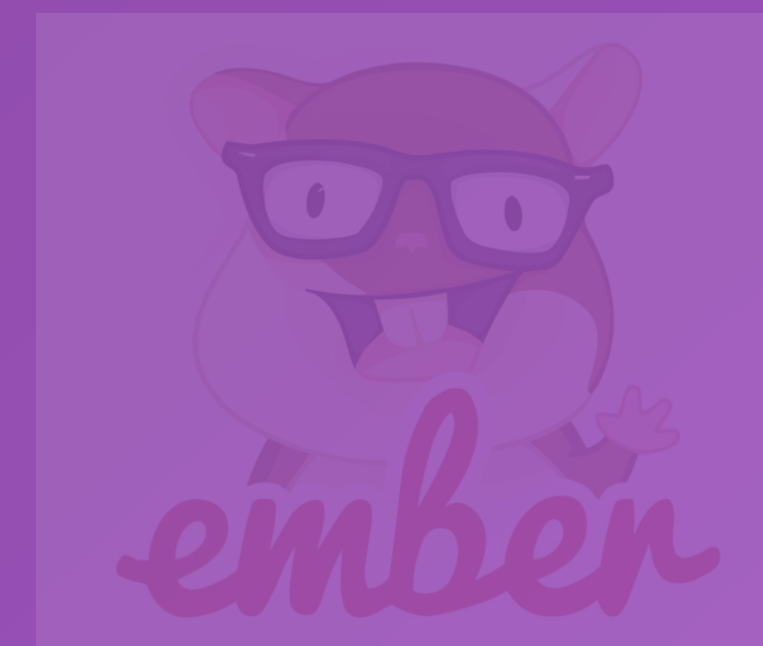
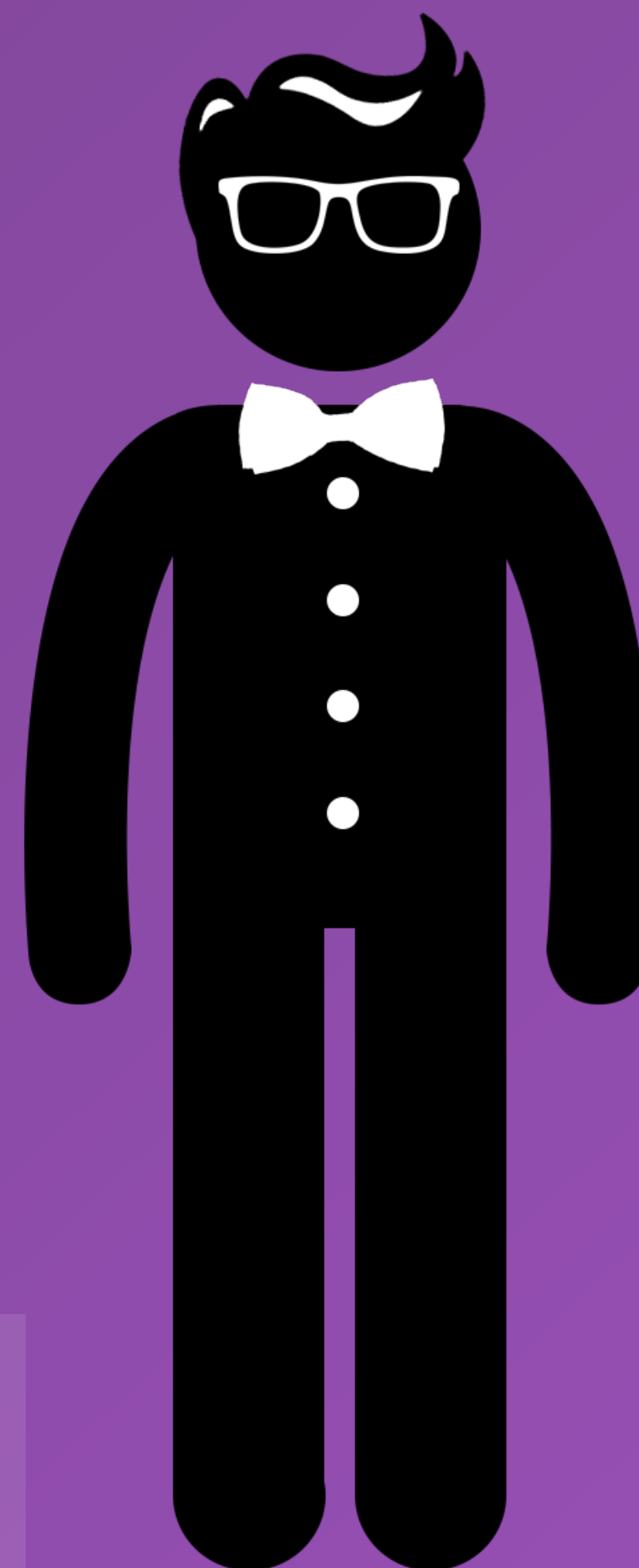



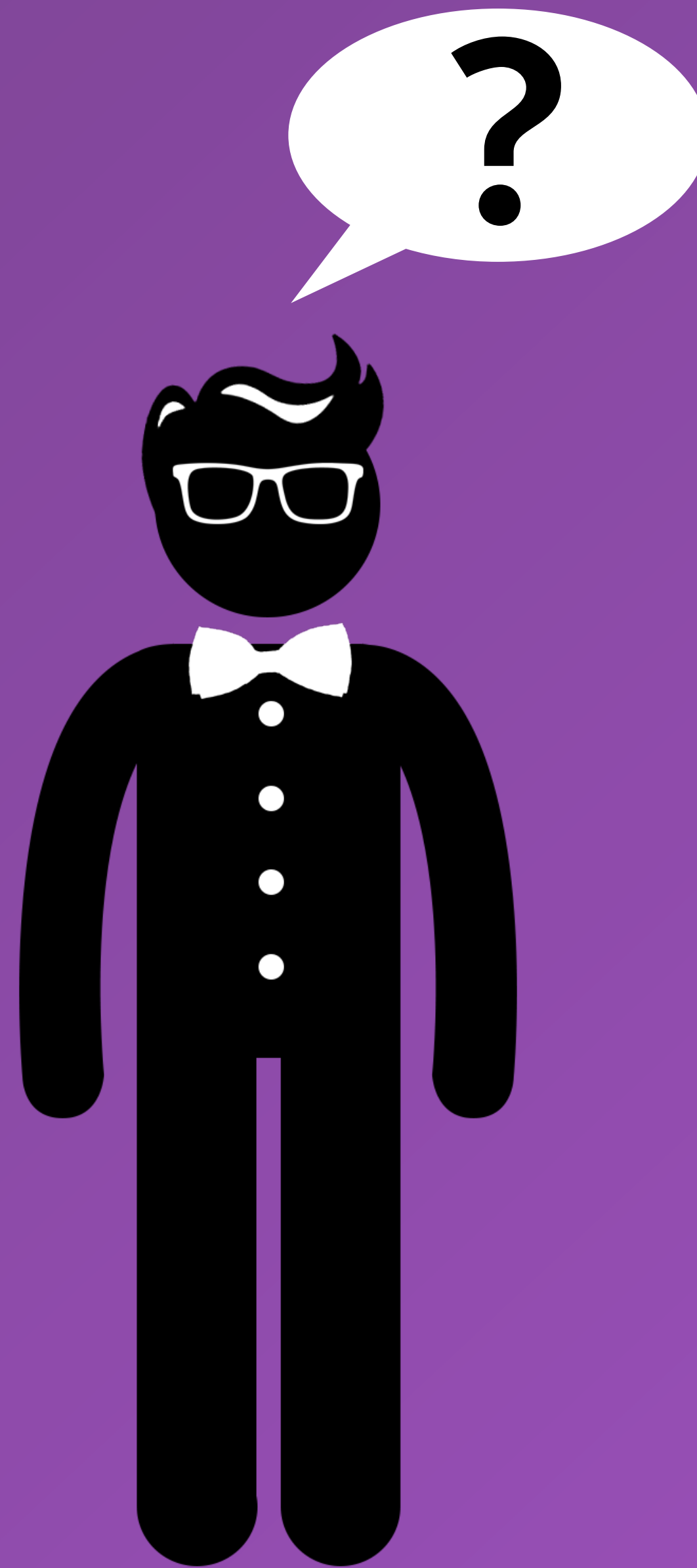


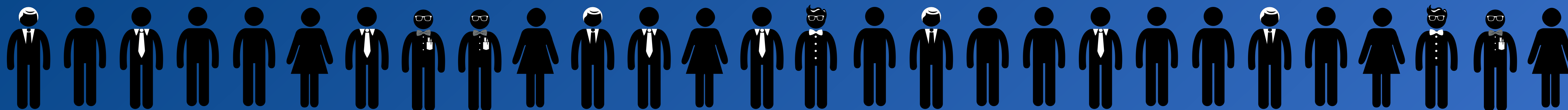
[illegible]

[illegible]

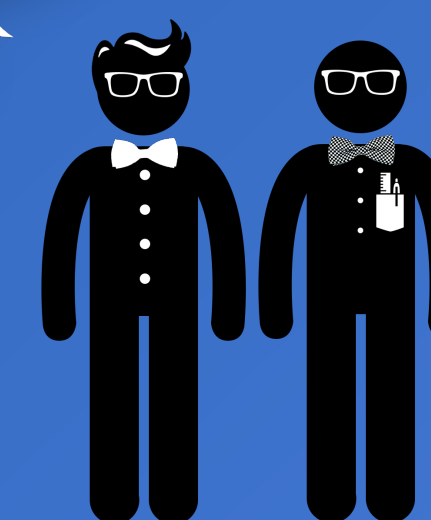
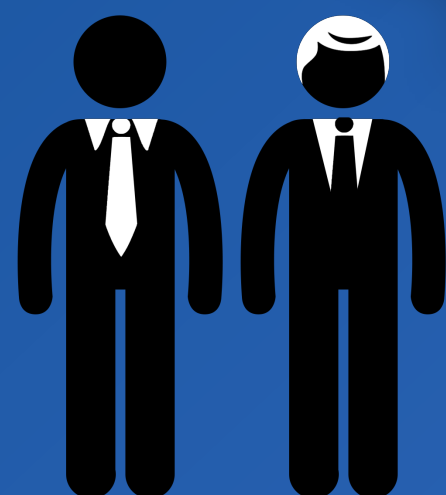
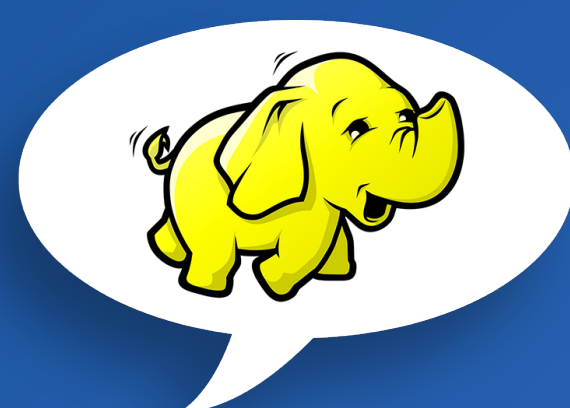


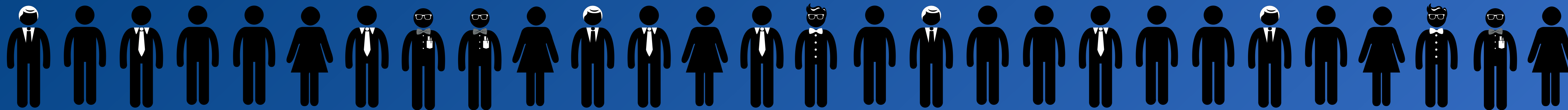






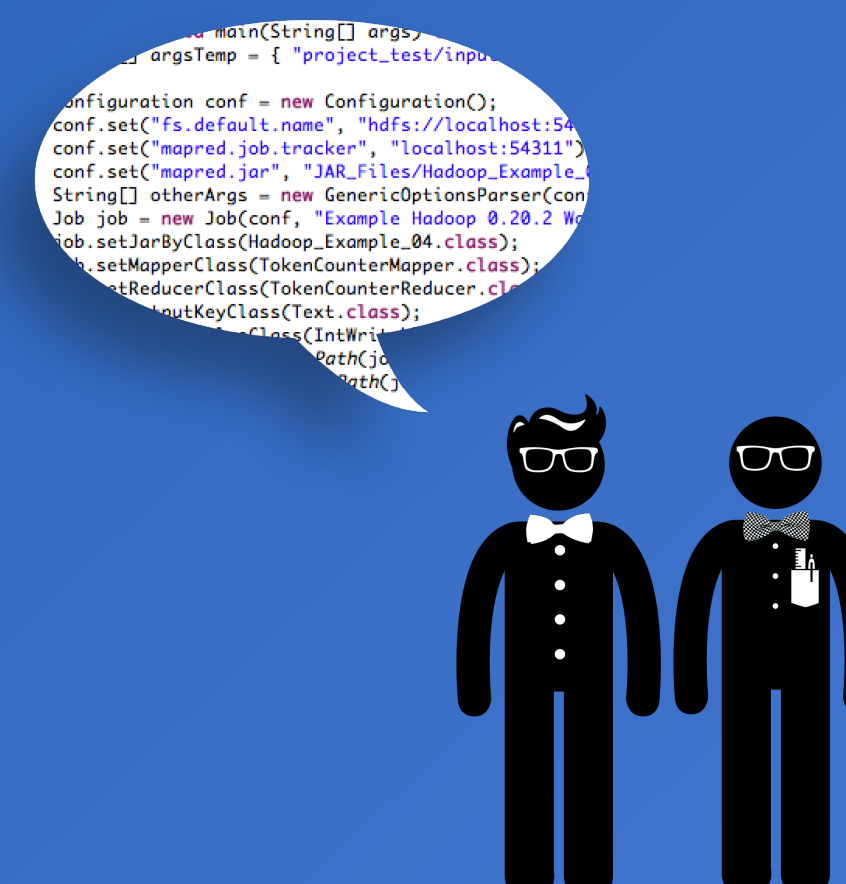
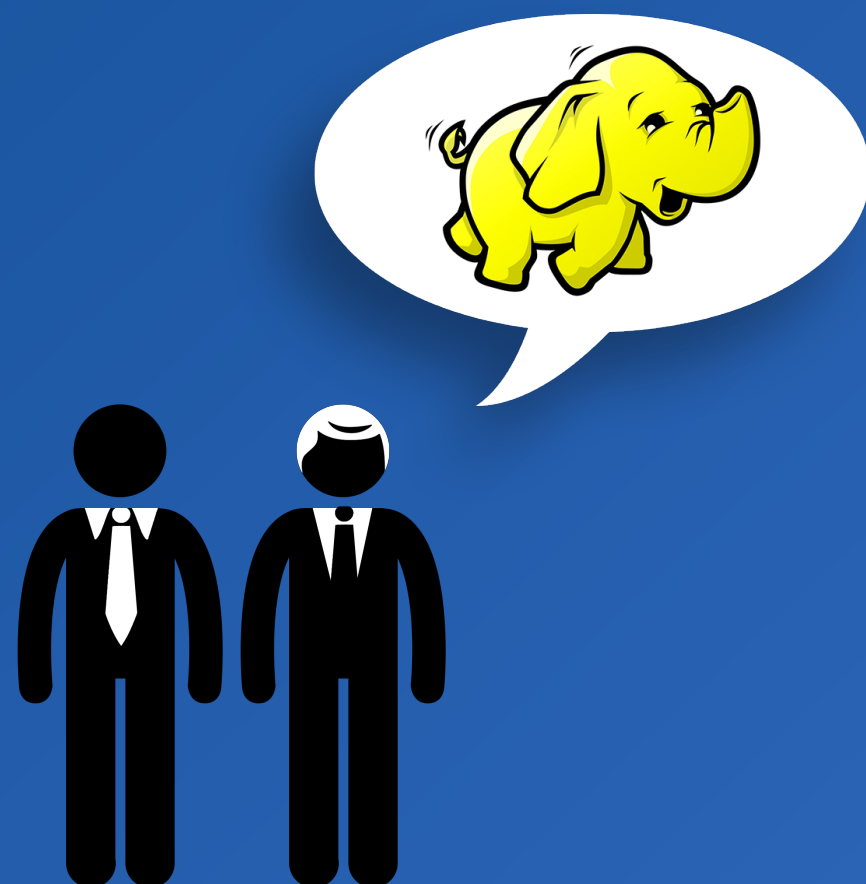
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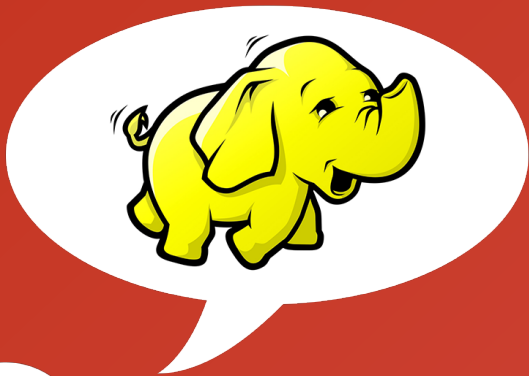
Community > code

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```
public static void main(String[] args) {
    Configuration conf = new Configuration();
    conf.set("fs.default.name", "hdfs://localhost:54311");
    conf.set("mapred.job.tracker", "localhost:54311");
    String[] otherArgs = new GenericOptionsParser(conf).getArgs();
    Job job = new Job(conf, "Example Hadoop 0.20.2 WordCount");
    job.setJarByClass(Hadoop_Example_04.class);
    job.setMapperClass(TokenCounterMapper.class);
    job.setReducerClass(TokenCounterReducer.class);
    job.setOutputKeyClass(Text.class);
    job.setOutputValueClass(Text.class);
    try {
        FileInputFormat.addInputPaths(job, new String[] { "project_test/input.txt" });
    } catch (IOException ex) {}
    try {
        FileOutputFormat.setOutputPath(job, new Path(job.getConfiguration().get("mapred.job.outdir", "output")));
    } catch (IOException ex) {}
    try {
        job.waitForCompletion(true);
    } catch (InterruptedException ex) {}
    }
}
```



```
public static void main(String[] args) {
    Configuration conf = new Configuration();
    conf.set("fs.default.name", "hdfs://localhost:54311");
    conf.set("mapred.job.tracker", "localhost:54311");
    String[] otherArgs = new GenericOptionsParser(conf).getArgs();
    Job job = new Job(conf, "Example Hadoop 0.20.2 WordCount");
    job.setJarByClass(Hadoop_Example_04.class);
    job.setMapperClass(TokenCounterMapper.class);
    job.setReducerClass(TokenCounterReducer.class);
    job.setOutputKeyClass(Text.class);
    job.setOutputValueClass(Text.class);
    try {
        FileInputFormat.addInputPaths(job, new String[] { "project_test/input.txt" });
    } catch (IOException ex) {}
    try {
        FileOutputFormat.setOutputPath(job, new Path(job.getConfiguration().get("mapred.job.outdir", "output")));
    } catch (IOException ex) {}
    try {
        job.waitForCompletion(true);
    } catch (InterruptedException ex) {}
    }
}
```

```
Start_encoding_picture: // Begin encoding a video picture
input desired D: // Get the desired Distortion D value
find D_0 nearest to D: // Find the D value closes to the desired D
Qnorm = h(D_0); // Determine normal Q with no masking
lambda = f(Qnorm); // Determine the Lagrange multiplier lambda
start_encoding_pixelblock: // Begin encoding a pixelblock from the picture
Q = Qnorm; // Set Q to the normal Q with no masking
calculate visual mask M; // Determine the visual masking amount
while(M*lambda > Lambda_max(Q)) { // If strong masking, increase Q
    Q = Q+deltaQ; // Raise the Quantizer Q size
}
code pixelblock(M*lambda, Q); // Encode using M*lambda and Q
if (encoder_buffer > Tfull) { // If buffer threatens to fill overflow
    lambda = lambda+deltaLambda; // Increase lambda
    if (lambda > Lambda_max(Qnorm)) { // Test lambda
        Qnorm=Qnorm+deltaQ; //Increase Q if lambda too big
        lambda = f(Qnorm); // Calculate new lambda
    }
}
if (encoder_buffer < Tempty) { // If buffer threatens to fill underflow
    lambda = lambda-deltaLambda; // Decrease lambda
    if (lambda < Lambda_min(Qnorm)) { // Test lambda
        Qnorm = Qnorm-deltaQ; // Decr Q if lambda too small
        lambda = f(Qnorm); // Calculate new lambda
    }
}
if (not last pixelblock) then goto start_encoding_pixelblock //Next
// Done with picture.
```

```
Start_encoding_picture: // Begin encoding a video picture
input desired D: // Get the desired Distortion D value
find D_0 nearest to D: // Find the D value closes to the desired D
Qnorm = h(D_0); // Determine normal Q with no masking
lambda = f(Qnorm); // Determine the Lagrange multiplier lambda
start_encoding_pixelblock: // Begin encoding a pixelblock from the picture
Q = Qnorm; // Set Q to the normal Q with no masking
calculate visual mask M; // Determine the visual masking amount
while(M*lambda > Lambda_max(Q)) { // If strong masking, increase Q
    Q = Q+deltaQ; // Raise the Quantizer Q size
}
code pixelblock(M*lambda, Q); // Encode using M*lambda and Q
if (encoder_buffer > Tfull) { // If buffer threatens to fill overflow
    lambda = lambda+deltaLambda; // Increase lambda
    if (lambda > Lambda_max(Qnorm)) { // Test lambda
        Qnorm=Qnorm+deltaQ; //Increase Q if lambda too big
        lambda = f(Qnorm); // Calculate new lambda
    }
}
if (encoder_buffer < Tempty) { // If buffer threatens to fill underflow
    lambda = lambda-deltaLambda; // Decrease lambda
    if (lambda < Lambda_min(Qnorm)) { // Test lambda
        Qnorm = Qnorm-deltaQ; // Decr Q if lambda too small
        lambda = f(Qnorm); // Calculate new lambda
    }
}
if (not last pixelblock) then goto start_encoding_pixelblock //Next
// Done with picture.
```

```
<Union 223 envs> [mac_carthy:1:mac_carthy.c]:{ {mac_
}>};{ No signal }:: { To do }[mac_carthy:6 mac_carthy:retur
<12> { if (a > 100)
    <Union 223 envs> [mac_carthy:4:mac_carthy.c]:{ {mac_
}>};{ No signal }:: { To do }[mac_carthy:6 mac_carthy:retur
<13> {
```

```
<Union 223 envs> [mac_carthy:5:mac_carthy.c]:{ {mac_
}>};{ No signal }:: { To do }[mac_carthy:6 mac_carthy:retur
<14> { return (a-10);
    <Union 223 envs> [mac_carthy:15:mac_carthy.c]:{ {mac_
}>};{ }:: { No signal }:: { To do }[mac_carthy:6 mac_carthy:
<15> { }
    <16> { else
    <17> {
```

```
<Union 223 envs> [mac_carthy:9:mac_carthy:mac_carthy:6 mac_c
}>};{ No signal }:: { To do }[mac_carthy:6 mac_carthy:retur
<18> { b = mac_carthy (mac_carthy (+11),mac_carthy:6 mac_c
    <Union 223 envs> [mac_carthy:14:mac_carthy:mac_carthy:6
}>};{ }:: { No signal }:: { To do }[mac_carthy:6 mac_carthy:
<19> { return (b);
    <Union 223 envs> [mac_carthy:15:mac_carthy:mac_carthy:6
}>};{ }:: { No signal }:: { To do }[mac_carthy:6 mac_carthy:
<20> {
```

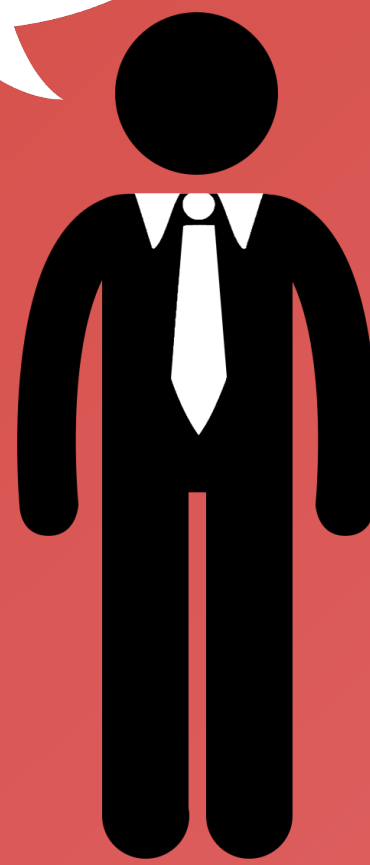
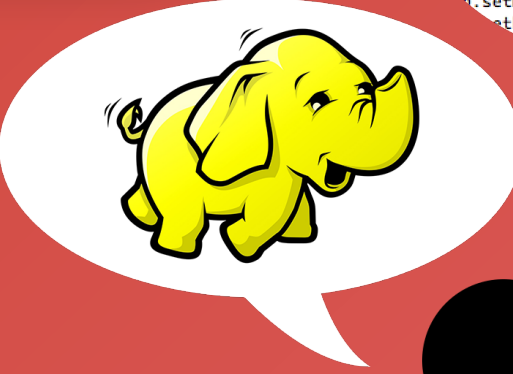
```
ction
23 envs> [mac_carthy:15:mac_carthy:mac_carthy:6 mac_carthy:
(Local),i_0. . .i_1.>, <.x2,(Local),i_11. . .i_11.>};{ No signal }:: { To do }[mac_carthy:6 mac_carthy:retur
<21> {
```

```
Start_encoding_picture: // Begin encoding a video picture
input desired D: // Get the desired Distortion D value
find D_0 nearest to D: // Find the D value closes to the desired D
Qnorm = h(D_0); // Determine normal Q with no masking
lambda = f(Qnorm); // Determine the Lagrange multiplier lambda
start_encoding_pixelblock: // Begin encoding a pixelblock from the picture
Q = Qnorm; // Set Q to the normal Q with no masking
calculate visual mask M; // Determine the visual masking amount
while(M*lambda > Lambda_max(Q)) { // If strong masking, increase Q
    Q = Q+deltaQ; // Raise the Quantizer Q size
}
code pixelblock(M*lambda, Q); // Encode using M*lambda and Q
if (encoder_buffer > Tfull) { // If buffer threatens to fill overflow
    lambda = lambda+deltaLambda; // Increase lambda
    if (lambda > Lambda_max(Qnorm)) { // Test lambda
        Qnorm=Qnorm+deltaQ; //Increase Q if lambda too big
        lambda = f(Qnorm); // Calculate new lambda
    }
}
if (encoder_buffer < Tempty) { // If buffer threatens to fill underflow
    lambda = lambda-deltaLambda; // Decrease lambda
    if (lambda < Lambda_min(Qnorm)) { // Test lambda
        Qnorm = Qnorm-deltaQ; // Decr Q if lambda too small
        lambda = f(Qnorm); // Calculate new lambda
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}
if (not last pixelblock) then goto start_encoding_pixelblock //Next
// Done with picture.
```

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Start_encoding_picture: // Begin encoding a video picture
input desired D: // Get the desired Distortion D value
find D_0 nearest to D: // Find the D value closes to the desired D
Qnorm = h(D_0); // Determine normal Q with no masking
lambda = f(Qnorm); // Determine the Lagrange multiplier lambda
start_encoding_pixelblock: // Begin encoding a pixelblock from the picture
Q = Qnorm; // Set Q to the normal Q with no masking
calculate visual mask M; // Determine the visual masking amount
while(M*lambda > Lambda_max(Q)) { // If strong masking, increase Q
    Q = Q+deltaQ; // Raise the Quantizer Q size
}
code pixelblock(M*lambda, Q); // Encode using M*lambda and Q
if (encoder_buffer > Tfull) { // If buffer threatens to fill overflow
    lambda = lambda+deltaLambda; // Increase lambda
    if (lambda > Lambda_max(Qnorm)) { // Test lambda
        Qnorm=Qnorm+deltaQ; //Increase Q if lambda too big
        lambda = f(Qnorm); // Calculate new lambda
    }
}
if (encoder_buffer < Tempty) { // If buffer threatens to fill underflow
    lambda = lambda-deltaLambda; // Decrease lambda
    if (lambda < Lambda_min(Qnorm)) { // Test lambda
        Qnorm = Qnorm-deltaQ; // Decr Q if lambda too small
        lambda = f(Qnorm); // Calculate new lambda
    }
}
if (not last pixelblock) then goto start_encoding_pixelblock //Next
// Done with picture.
```

```
<Union 223 envs> [mac_carthy:9:mac_carthy:mac_carthy:6 mac_c
}>};{ No signal }:: { To do }[mac_carthy:6 mac_carthy:retur
<18> { b = mac_carthy (mac_carthy (+11),mac_carthy:6 mac_c
    <Union 223 envs> [mac_carthy:14:mac_carthy:mac_carthy:6
}>};{ }:: { No signal }:: { To do }[mac_carthy:6 mac_carthy:
<19> { return (b);
    <Union 223 envs> [mac_carthy:15:mac_carthy:mac_carthy:6
}>};{ }:: { No signal }:: { To do }[mac_carthy:6 mac_carthy:
<20> {
```

```
unction
23 envs> [mac_carthy:15:mac_carthy:mac_carthy:6 mac_carthy:
(Local),i_0. . .i_1.>, <.x2,(Local),i_11. . .i_11.>};{ No signal }:: { To do }[mac_carthy:6 mac_carthy:retur
<21> {
```

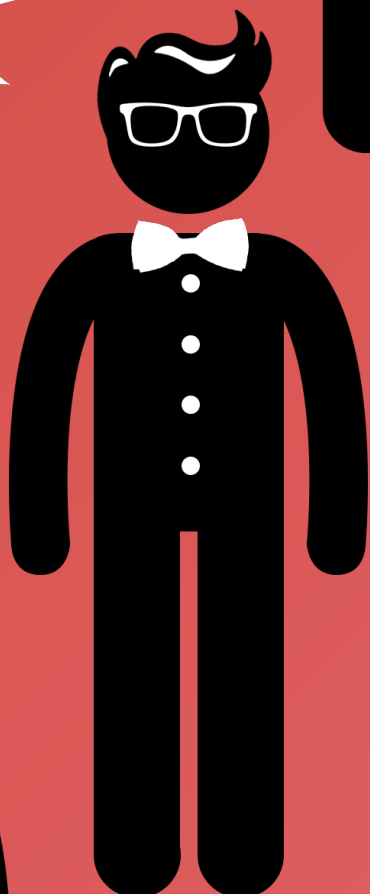


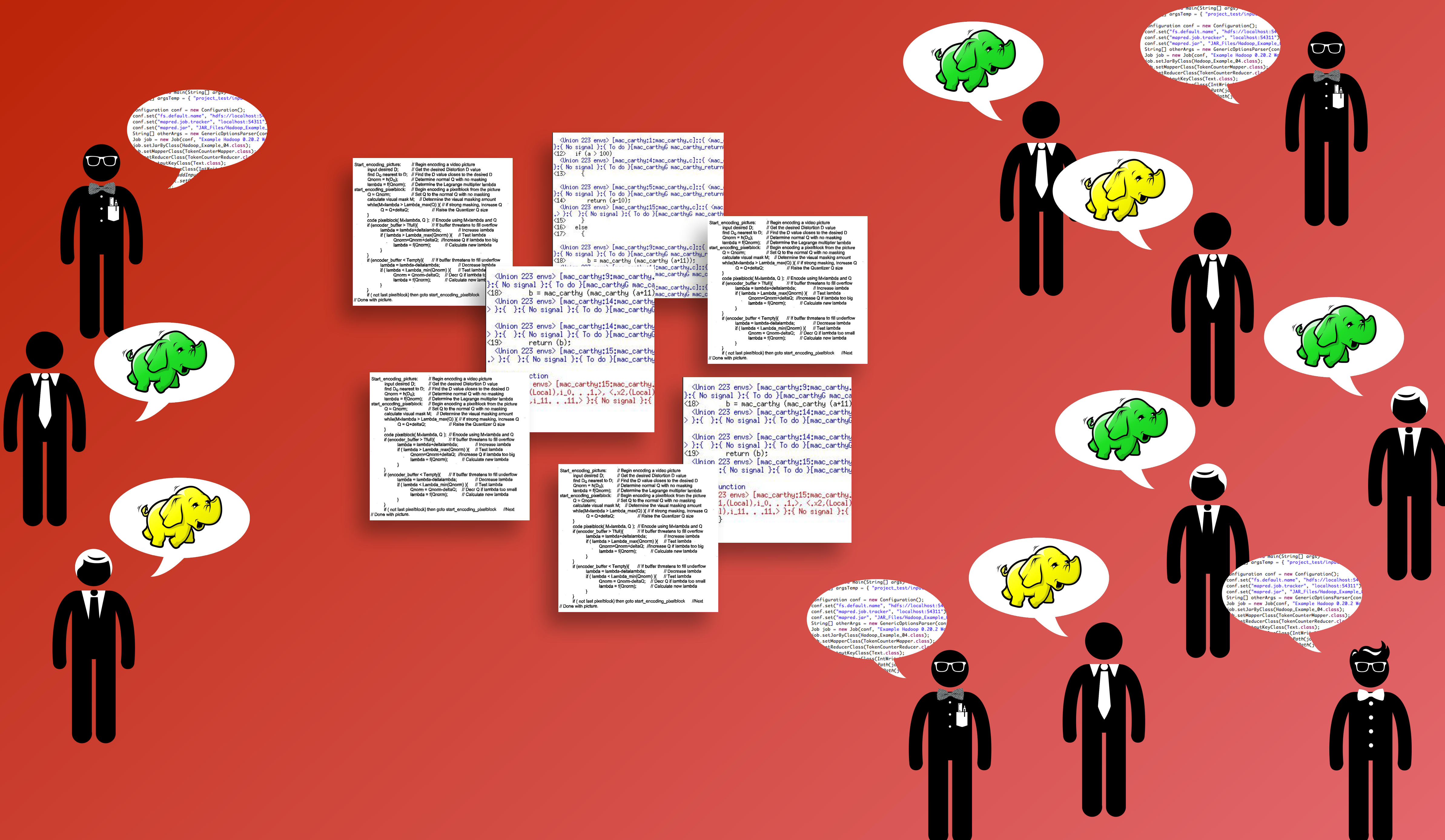
```
public static void main(String[] args) {
    Configuration conf = new Configuration();
    conf.set("fs.default.name", "hdfs://localhost:54311");
    conf.set("mapred.job.tracker", "localhost:54311");
    String[] otherArgs = new GenericOptionsParser(conf).getArgs();
    Job job = new Job(conf, "Example Hadoop 0.20.2 WordCount");
    job.setJarByClass(Hadoop_Example_04.class);
    job.setMapperClass(TokenCounterMapper.class);
    job.setReducerClass(TokenCounterReducer.class);
    job.setOutputKeyClass(Text.class);
    job.setOutputValueClass(Text.class);
    try {
        FileInputFormat.addInputPaths(job, new String[] { "project_test/input.txt" });
    } catch (IOException ex) {}
    try {
        FileOutputFormat.setOutputPath(job, new Path(job.getConfiguration().get("mapred.job.outdir", "output")));
    } catch (IOException ex) {}
    try {
        job.waitForCompletion(true);
    } catch (InterruptedException ex) {}
    }
}
```

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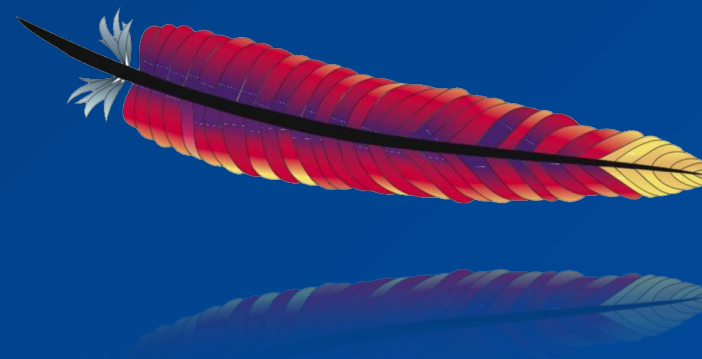


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@shanecurcuru
<http://CommunityOverCode.com>
<http://punderthings.com>
<http://www.apache.org>



</presentation>