# Doc

src\projects\defaultProject\models\connectivityModels\UDG.java – connect the vertices which are in range to one another.

src\projects\sample5\CustomGlobal.java:

sampleButton – This is a button in the screen. It initiate the building by sending the message to request generate U (max independent vertices set).

genPath – This is function which generate the path graph. This function sends the first messages to generate paths from vertices in U. Called after U is generated.

toCsv – In the last stage (receiving message) Statistics are generate to csv.

src\projects\sample5\Config.xml – configuration file for the run.

" src\projects\sample5\nodes\messages\MaxU.java" – message format to generate U.

"src\projects\sample5\nodes\messages\PathU.java" – message format to generate paths from U.

"src\projects\sample5\nodes\messages\SendTo.java"- message format to transfer message from node to a node.

"src\projects\sample5\nodes\nodeImplementations\FNode.java":

handleMessages – function that handle all messages that got in current cycle.

public static Vector<FNode> U = new Vector<FNode>() – the U set.

public static  Hashtable<Node, Integer> numOfSendedMessagesFromNode = new Hashtable<Node, Integer>() – counter for height of U vertices for decieding for diam.

Hashtable<Node, ParentDistnace> parentTable = new Hashtable<Node, ParentDistnace>() – for each node there is parent for pathU. This populated during generation path phase.

public Node deactivtorNode – in the phase of generating U, save the node which deactivate this node. The deactivator must be in U. For node In U it will be itself. The dectivtorNode will be the U node required for routing a path to this node.

Src\sinalgo\runtime\SynchronousRuntimeThread.java:

Run – to get the number of cycles took for each stage there customization for that there.

Src\sinalgo\runtime\Global.java:

systemState – Variable to let the simulation know in which stage it is.

1 – build U.

2 – build path to U.

3 – Pathing to some node.

## Results

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| num\_v | max\_deg\_v | num\_v\_in\_u | leng\_path | approximation\_diameter | rounds\_build\_u\_and\_build\_path |
| 200 | 37 | 38 | 6 | 12 | 17 |
| 210 | 37 | 39 | 9 | 12 | 16 |
| 300 | 31 | 42 | 14 | 16 | 19 |
| 310 | 31 | 44 | 12 | 16 | 19 |
| 400 | 40 | 58 | 14 | 16 | 20 |
| 410 | 40 | 61 | 15 | 16 | 20 |
| 500 | 48 | 128 | 14 | 16 | 20 |
| 510 | 18 | 151 | 24 | 54 | 33 |
| 600 | 19 | 171 | 26 | 54 | 33 |
| 610 | 19 | 174 | 26 | 54 | 33 |
| 700 | 23 | 191 | 26 | 56 | 34 |
| 710 | 23 | 193 | 26 | 56 | 34 |
| 800 | 24 | 217 | 30 | 54 | 34 |
| 810 | 24 | 219 | 29 | 56 | 34 |
| 900 | 26 | 238 | 29 | 54 | 33 |
| 910 | 27 | 239 | 29 | 56 | 34 |
| 1000 | 30 | 253 | 28 | 56 | 34 |
| 1010 | 30 | 255 | 29 | 56 | 34 |
| 1100 | 20 | 315 | 42 | 94 | 53 |
| 1110 | 20 | 317 | 42 | 92 | 52 |