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**Lara El Sherif\*** ([laraelsherif@gmail.com](mailto:laraelsherif@gmail.com)), Alexandria, VA 22302. *The Maximum Genus of planar 2-connected graphs and its generalizations.*

The maximum genus of a connected graph is defined to be the maximum integer  $g$  for which the graph has a cellular embedding in an orientable surface of genus  $g$ . We study the maximum genus of planar 2-connected graphs using a new class of intersection graphs defined on a given plane embedding. We show that using this tool, building the maximum genus embedding of a planar 2-connected graph follows a simple graph theoretical algorithm. We will also touch on techniques and ideas to generalize this method to the non-planar case and produce locally maximal embeddings. (Received September 21, 2015)