MAT300 Curves and Surfaces
Spring 2020

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89.23
Feedback:

CODES: (54.33/60)

- **Direct evaluation works (8/8):** code tested for 2D and 3D. The code works correctly and gives the expected outputs graphically and numerically.

- **De Casteljau (8/11):** code tested for 2D and 3D. The code does not work correctly due to errors in the output mesh.

  - Line 25: t = linspace(0, 1, outputnodes + 1); should be t = linspace(0, 1, outputnodes);
  - Line 52: for j=1:1:(outputnodes + 1) should be for j=1:1:(outputnodes)

  You should have noticed the error by comparing the result with the direct evaluation method for a low number of nodes.

- **Shells for De Casteljau (4/4):** afted correcting the De Casteljau method, the code was tested for 2D and 3D. The code works correctly and gives the expected outputs graphically and numerically.

- **Midpoint subdivision (12/12):** code tested for 2D and 3D. The code works correctly and gives the expected outputs graphically and numerically.

- **Meshes (3.33/5):** mesh in De Casteljau algorithm incorrect. The rest of the meshes are correct.

- **Outputs in 2D and 3D (5/5):** outputs are correct (except for the error in the number of nodes in the DeCasteljau algorithm) and consistent with the computations for all the methods and dimensions.

- **Structure of the code (5/5):** the code is well structured, clean as easy to follow.

- **Comments (9/10):** code is very well commented in general.
    - input_data.m lines 10-12 the input points are CONTROL points, not INTERPOLATION points because the curve is a Bezier and so it does not cross the points. Revise comments when recycling files from previous projects.

README (4/4): very precise and complete.

DOCUMENT (30.9/36)

- **Description of the problem (0.8/3):** you have to improve the description of the problem. It should be general and describe what the problem that the code solves is. The sentence (or sentences) should explain and summarize the project. Instead you give the main characteristic of the algorithm that you implement, which is not the purpose of this section.

RECOMMENDATIONS: read the description once and again, try to think about it, dedicate more time to it.

- **Mathematical explanation (19.33/20):** minor errors. See attached document.

- **Relation with the code (4.66/5):** good. See attached document.

- **Examples (2.95/3):** good. See attached document.

- **Observations (3.16/5):** you should compare the three methods, i.e. give a common overview of the three algorithms and of the work carried out by each member of the team.