

**IF184401 Design & Analysis of Algorithms (H) - Midterm Exam Grade**  
**MM Irfan Subakti & Nurul Izzatil Ulum**  
**2nd Semester 2022/2023**

| No | Student ID | Name                                     | AVL Tree |                 |     |                  |          |                  |                   |          | Explanation  | Decla-<br>ration<br>(Valid/<br>NV) | Email Manner             |         |      |                |       | File-<br>name | Late<br>(min) | Final Remark | Original<br>Grade<br>(Number) | Final Grade<br>(Number) | Final<br>Grade<br>(Char) |
|----|------------|--|----------|-----------------|-----|------------------|----------|------------------|-------------------|----------|--|------------------------------------|--------------------------|---------|------|----------------|-------|---------------|---------------|--------------|-------------------------------|-------------------------|--------------------------|
|    |            |  | isBST    | printDescending | max | isHeightBalanced | insertHB | rebalanceForLeft | rebalanceForRight | deleteHB |  |                                    | Appro-<br>priate<br>Name | Subject | Body | Signa-<br>ture | Title |               |               |              |                               |                         |                          |
|    |            |  | 20%      | 10%             | 10% | 10%              | 10%      | 15%              | 15%               | 10%      |  |                                    | 2%                       | 2%      | 2%   | 2%             | 2%    |               |               |              |                               |                         |                          |
| 1  | 5025211004 | Akbar Putra<br>Asenti Priyanto           | 20       | 10              | 10  | 10               | 10       | 14               | 14                | 10       | There is a slight error in rebalance function on AVL Tree. Excellent!  | 1                                  | 1                        | 1       | 1    | 1              | 1     | 0             | Excellent!    | 98           | 98                            | A                       |                          |
| 2  | 5025211007 | Achmad<br>Khosyi' Assajjad<br>Ramandanta | 15       | 10              | 10  | 10               | 10       | 10               | 10                | 7        | There is slight error in the checking of whether a tree is BST or not and at rebalancing algorithm. Some function did not work as intended. Great work!                              | 1                                  | 1                        | 1       | 1    | 1              | 1     | 0             | Great work!   | 82           | 82                            | AB                      |                          |
| 3  | 5025211015 | Muhammad<br>Daffa'<br>Ashdaqillah        | 15       | 10              | 10  | 10               | 10       | 15               | 15                | 10       | There is a slight error in the checking of whether a tree is BST or not. Excellent!  | 1                                  | 1                        | 1       | 1    | 1              | 1     | 0             | Excellent!    | 95           | 95                            | A                       |                          |
| 4  | 5025211018 | Andrian<br>Tambunan                      | 15       | 10              | 10  | 10               | 7        | 10               | 10                | 8        | There is slight error in the checking of whether a tree is BST or not and at rebalancing algorithm. Some function did not work as intended. Great work!                              | 1                                  | 1                        | 1       | 1    | 1              | 1     | 8             | Great work!   | 80           | 78.8                          | AB                      |                          |
| 5  | 5025211023 | Wan Sabrina<br>Mayzura                   | 15       | 10              | 10  | 10               | 7        | 10               | 10                | 8        | There is slight error in the checking of whether a tree is BST or not and at rebalancing algorithm. Some function did not work as intended. Great work!                              | 1                                  | 1                        | 1       | 1    | 1              | 1     | 0             | Great work!   | 80           | 80                            | AB                      |                          |
| 6  | 5025211024 | Widian Sasi<br>Disertasiani              | 15       | 10              | 10  | 10               | 7        | 10               | 10                | 8        | There is slight error in the checking of whether a tree is BST or not and at rebalancing algorithm as it affects other function. Some function did not work as intended. Great work! | 1                                  | 1                        | 1       | 1    | 0              | 1     | 0             | Great work!   | 78           | 78                            | AB                      |                          |

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|----|------------|------------------------------------|----------|-----------------|-----|------------------|----------|------------------|-------------------|----------|---|--------------------------|--------------------|---------|------|-------------|-------|-----------|--|--------------|-------------------------|----------------------|--------------------|
|    |            |                                    | isBST    | printDescending | max | isHeightBalanced | insertHB | rebalanceForLeft | rebalanceForRight | deleteHB |   |                          | Appro- priate Name | Subject | Body | Signa- ture | Title |           |  |              |                         |                      |                    |
|    |            |                                    | 20%      | 10%             | 10% | 10%              | 10%      | 15%              | 15%               | 10%      |   |                          | 2%                 | 2%      | 2%   | 2%          | 2%    |           |  |              |                         |                      |                    |
| 7  | 5025211034 | Arkana Bilal Imani                 | 15       | 10              | 10  | 10               | 7        | 10               | 10                | 8        | There is slight error in the checking of whether a tree is BST or not and at rebalancing algorithm. Some function did not work as intended. Great work! | 1                        | 0                  | 1       | 1    | 1           | 1     | 0         | Please add appropriate name in your email next time. Great work! | 78           | 78                      | AB                   |                    |
| 8  | 5025211035 | Abdullah Yasykur Bifadhilil Midror | 20       | 10              | 10  | 10               | 10       | 14               | 14                | 9        | Please pay more attention into rebalancing algorithm, as it affects other function. Some function did not work as intended. Excellent!                  | 1                        | 1                  | 1       | 1    | 1           | 1     | 0         | Excellent!   | 97           | 97                      | A                    |                    |
| 9  | 5025211052 | Duevano Fairuz Pandya              | 20       | 10              | 10  | 10               | 7        | 10               | 10                | 8        | Please pay more attention into rebalancing algorithm, as it affects other function. Some function did not work as intended. Great work!                 | 1                        | 1                  | 1       | 1    | 1           | 1     | 0         | Great work!  | 85           | 85                      | AB                   |                    |
| 10 | 5025211054 | M. Armand Giovanni                 | 15       | 10              | 10  | 10               | 10       | 15               | 15                | 10       | There is a slight error in the checking of whether a tree is BST or not. Excellent!   | 1                        | 1                  | 1       | 1    | 1           | 1     | 0         | Excellent!   | 95           | 95                      | A                    |                    |
| 11 | 5025211057 | Salsabila Fatma Aripa              | 15       | 10              | 10  | 10               | 7        | 10               | 10                | 8        | There is slight error in the checking of whether a tree is BST or not and at rebalancing algorithm. Some function did not work as intended. Great work! | 1                        | 1                  | 1       | 1    | 1           | 1     | 0         | Great work!  | 80           | 80                      | AB                   |                    |
| 12 | 5025211081 | Gabriella Natasya Br Ginting       | 15       | 10              | 10  | 10               | 10       | 14               | 14                | 9        | Please pay more attention into rebalancing algorithm, as it affects other function. Some function did not work as intended. Excellent!                  | 1                        | 1                  | 1       | 1    | 0           | 1     | 4         | Please don't be late, next time. Excellent!                      | 90           | 89.4                    | A                    |                    |
| 13 | 5025211093 | Farhan Dwi Putra                   | 20       | 10              | 10  | 10               | 10       | 15               | 15                | 10       | Perfect score!  | 1                        | 1                  | 1       | 1    | 1           | 1     | 0         | Perfect score! Excellent!  | 100          | 100                     | A                    |                    |

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|----|------------|------------------------------|----------|-----------------|-----|------------------|----------|------------------|-------------------|----------|--|--------------------------|--------------------|---------|------|-------------|-------|-----------|-------------|--------------|-------------------------|----------------------|--------------------|
|    |            |                              | isBST    | printDescending | max | isHeightBalanced | insertHB | rebalanceForLeft | rebalanceForRight | deleteHB |  |                          | Appro- priate Name | Subject | Body | Signa- ture | Title |           |             |              |                         |                      |                    |
|    |            |                              | 20%      | 10%             | 10% | 10%              | 10%      | 15%              | 15%               | 10%      |  |                          | 2%                 | 2%      | 2%   | 2%          | 2%    |           |             |              |                         |                      |                    |
| 14 | 5025211102 | Adhira Riyanti Amanda        | 15       | 10              | 10  | 10               | 10       | 14               | 14                | 10       | There is a slight error in checking whether a tree is BST or not and rebalance function on AVL Tree. Excellent!  | 1                        | 1                  | 1       | 1    | 0           | 1     | 0         | Excellent!  | 91           | 91                      | A                    |                    |
| 15 | 5025211109 | Dewangga Dika Darmawan       | 15       | 10              | 10  | 10               | 7        | 10               | 10                | 8        | There is slight error in the checking of whether a tree is BST or not and at rebalancing algorithm as it affects other function. Some function did not work as intended. Great work! | 1                        | 1                  | 1       | 1    | 1           | 1     | 0         | Great work! | 80           | 80                      | AB                   |                    |
| 16 | 5025211112 | Java Kanaya Prada            | 15       | 10              | 10  | 10               | 10       | 14               | 14                | 9        | There is a slight error in checking whether a tree is BST or not, and the delete function on AVL Tree. Excellent!  | 1                        | 1                  | 1       | 1    | 1           | 1     | 0         | Excellent!  | 92           | 92                      | A                    |                    |
| 17 | 5025211114 | Adam Haidar Azizi            | 15       | 10              | 10  | 10               | 10       | 15               | 15                | 10       | There is a slight error in the checking of whether a tree is BST or not and please gave output picture next time. Excellent!   | 1                        | 1                  | 1       | 1    | 1           | 1     | 0         | Excellent!  | 95           | 95                      | A                    |                    |
| 18 | 5025211120 | Dafarel Fatih Wirayudha      | 20       | 10              | 10  | 10               | 7        | 10               | 10                | 8        | Please pay more attention into rebalancing algorithm, as it affects other function. Some function did not work as intended. Great work!  | 1                        | 1                  | 1       | 1    | 1           | 1     | 0         | Great work! | 85           | 85                      | AB                   |                    |
| 19 | 5025211122 | Muhammad Zien Zidan          | 20       | 10              | 10  | 10               | 10       | 15               | 15                | 9        | The deleteHB did not work as intended. Excellent!  | 1                        | 1                  | 1       | 1    | 1           | 1     | 0         | Excellent!  | 99           | 99                      | A                    |                    |
| 20 | 5025211126 | Aurelio Killian Lexi Verrill | 20       | 10              | 10  | 10               | 7        | 10               | 10                | 8        | There is slight error in the checking of whether a tree is BST or not and at rebalancing algorithm as it affects other function. Some function did not work as intended. Great work! | 1                        | 1                  | 1       | 1    | 1           | 1     | 0         | Great work! | 85           | 85                      | AB                   |                    |

| No | Student ID | Name                                | AVL Tree |                 |     |                  |          |                  |                   |          | Explanation  | Decla-<br>ration<br>(Valid/<br>NV) | Email Manner             |         |      |                |   | File-<br>name<br>Title | Late<br>(min)                                  | Final Remark | Original<br>Grade<br>(Number) | Final Grade<br>(Number) | Final<br>Grade<br>(Char) |
|----|------------|-------------------------------------|----------|-----------------|-----|------------------|----------|------------------|-------------------|----------|--|------------------------------------|--------------------------|---------|------|----------------|---|------------------------|--|--------------|-------------------------------|-------------------------|--------------------------|
|    |            |                                     | isBST    | printDescending | max | isHeightBalanced | insertHB | rebalanceForLeft | rebalanceForRight | deleteHB |  |                                    | Appro-<br>priate<br>Name | Subject | Body | Signa-<br>ture |   |                        |  |              |                               |                         |                          |
|    |            |                                     | 20%      | 10%             | 10% | 10%              | 10%      | 15%              | 15%               | 10%      |  |                                    | 2%                       | 2%      | 2%   | 2%             |   |                        |  |              |                               |                         |                          |
| 21 | 5025211138 | Ariella Firdaus<br>Imata            | 20       | 10              | 10  | 10               | 10       | 15               | 15                | 10       | Perfect score!   | 1                                  | 1                        | 1       | 1    | 1              | 1 | 0                      | Perfect score!<br>Excellent!                   | 100          | 100                           | A                       |                          |
| 22 | 5025211153 | Christian Kevin<br>Emor             | 15       | 10              | 10  | 10               | 10       | 15               | 15                | 10       | There is a slight<br>error in the<br>checking of<br>whether a tree is<br>BST or not.<br>Excellent!   | 1                                  | 1                        | 1       | 1    | 1              | 1 | 4                      | Please don't be late,<br>next time. Excellent! | 95           | 94.4                          | A                       |                          |
| 23 | 5025211168 | Ken Anargya<br>Alkausar             | 15       | 10              | 10  | 10               | 10       | 15               | 15                | 10       | There is a slight<br>error in the<br>checking of<br>whether a tree is<br>BST or not and<br>please provide<br>more on the output<br>pictureure.<br>Excellent!   | 1                                  | 1                        | 1       | 1    | 1              | 1 | 0                      | Great work!                                    | 95           | 95                            | A                       |                          |
| 24 | 5025211175 | Syarifah Talitha<br>Erfany          | 15       | 10              | 10  | 10               | 7        | 10               | 10                | 8        | There is slight error<br>in the checking of<br>whether a tree is<br>BST or not and at<br>rebalancing<br>algorithm as it<br>affects other<br>function. Some<br>function did not<br>work as intended.<br>Great work! | 1                                  | 1                        | 1       | 1    | 1              | 1 | 0                      | Great work!                                    | 80           | 80                            | AB                      |                          |
| 25 | 5025211195 | Hanafi Satriyo<br>Utomo<br>Setiawan | 15       | 10              | 10  | 10               | 7        | 10               | 10                | 8        | There is slight error<br>in the checking of<br>whether a tree is<br>BST or not and at<br>rebalancing<br>algorithm as it<br>affects other<br>function. Some<br>function did not<br>work as intended.<br>Great work! | 1                                  | 1                        | 1       | 1    | 1              | 1 | 0                      | Great work!                                    | 80           | 80                            | AB                      |                          |
| 26 | 5025211196 | Sandyatama<br>Fransisna<br>Nugraha  | 15       | 10              | 10  | 10               | 10       | 15               | 15                | 10       | There is a slight<br>error in the<br>checking of<br>whether a tree is<br>BST or not.<br>Excellent!   | 1                                  | 1                        | 1       | 1    | 1              | 1 | 0                      | Great work!                                    | 95           | 95                            | A                       |                          |
| 27 | 5025211202 | Glenaya                             | 15       | 10              | 10  | 10               | 10       | 15               | 15                | 10       | There is a slight<br>error in the<br>checking of<br>whether a tree is<br>BST or not.<br>Excellent!   | 1                                  | 1                        | 1       | 1    | 1              | 1 | 0                      | Great work!                                    | 95           | 95                            | A                       |                          |

| No | Student ID | Name                          | AVL Tree |                 |     |                  |          |                  |                   |          | Explanation   | Decla-ration (Valid/ NV) | Email Manner       |         |      |             |       | File-name | Late (min)                                   | Final Remark | Original Grade (Number) | Final Grade (Number) | Final Grade (Char) |
|----|------------|-------------------------------|----------|-----------------|-----|------------------|----------|------------------|-------------------|----------|---|--------------------------|--------------------|---------|------|-------------|-------|-----------|--|--------------|-------------------------|----------------------|--------------------|
|    |            |                               | isBST    | printDescending | max | isHeightBalanced | insertHB | rebalanceForLeft | rebalanceForRight | deleteHB |   |                          | Appro- priate Name | Subject | Body | Signa- ture | Title |           |  |              |                         |                      |                    |
|    |            |                               | 20%      | 10%             | 10% | 10%              | 10%      | 15%              | 15%               | 10%      |   |                          | 2%                 | 2%      | 2%   | 2%          | 2%    |           |  |              |                         |                      |                    |
| 28 | 5025211220 | Fauzi Rizki Pratama           | 15       | 10              | 10  | 10               | 7        | 10               | 10                | 8        | There is slight error in the checking of whether a tree is BST or not and at rebalancing algorithm as it affects other function. Some function did not work as intended. And please provide output picture in your report. Good work! | 1                        | 1                  | 1       | 1    | 1           | 1     | 47        | Please don't be late, next time. Great work! | 80           | 72.95                   | B                    |                    |
| 29 | 5025211231 | Ihsan Widagdo                 | 15       | 10              | 10  | 10               | 7        | 10               | 10                | 8        | Please pay more attention into rebalancing algorithm, as it affects other function. Some function did not work as intended. Great work!   | 1                        | 1                  | 1       | 1    | 1           | 1     | 0         | Great work!                                  | 80           | 80                      | AB                   |                    |
| 30 | 5025211233 | Muhammad Revel Wivanto        | 20       | 10              | 10  | 10               | 10       | 13               | 13                | 5        | The deleteHB did not work as intended. Excellent!   | 1                        | 1                  | 1       | 1    | 1           | 1     | 0         | Great work!                                  | 91           | 91                      | A                    |                    |
| 31 | 5025211234 | Rafi Aliefian Putra Ramadhani | 15       | 10              | 10  | 10               | 7        | 10               | 10                | 8        | There is slight error in the checking of whether a tree is BST or not and at rebalancing algorithm as it affects other function. Some function did not work as intended. Great work!  | 1                        | 1                  | 1       | 1    | 1           | 1     | 0         | Great work!                                  | 80           | 80                      | AB                   |                    |
| 32 | 5025211245 | Javier Nararya Aqsa Setiyono  | 20       | 10              | 10  | 10               | 10       | 14               | 14                | 9        | There is a slight error in rebalance and the delete function on AVL Tree. Excellent!  | 1                        | 0                  | 1       | 1    | 0           | 1     | 0         | Elaborate more on your email. Excellent!     | 93           | 93                      | A                    |                    |
| 33 | 5025211246 | Afiq Fawwaz Haidar            | 15       | 10              | 10  | 10               | 10       | 13               | 13                | 8        | Please pay more attention into rebalancing algorithm, as it affects other function. Some function did not work as intended. And please use template number as given. Excellent!   | 1                        | 1                  | 1       | 1    | 1           | 1     | 0         | Great work!                                  | 89           | 89                      | A                    |                    |

| No | Student ID        | Name                      | AVL Tree |                 |       |                  |          |                  |                   |          | Explanation  | Decla-ration (Valid/ NV) | Email Manner      |         |      |            |       | File-name | Late (min)   | Final Remark | Original Grade (Number) | Final Grade (Number) | Final Grade (Char) |
|----|-------------------|---------------------------|----------|-----------------|-------|------------------|----------|------------------|-------------------|----------|--|--------------------------|-------------------|---------|------|------------|-------|-----------|--|--------------|-------------------------|----------------------|--------------------|
|    |                   |                           | isBST    | printDescending | max   | isHeightBalanced | insertHB | rebalanceForLeft | rebalanceForRight | deleteHB |  |                          | Appro-priate Name | Subject | Body | Signa-ture | Title |           |  |              |                         |                      |                    |
|    |                   |                           | 20%      | 10%             | 10%   | 10%              | 10%      | 15%              | 15%               | 10%      |  |                          | 2%                | 2%      | 2%   | 2%         | 2%    |           |  |              |                         |                      |                    |
| 34 | 5025211254 (PBSB) | Yusna Millaturrosyidah    | 15       | 10              | 10    | 10               | 7        | 10               | 10                | 8        | There is slight error in the checking of whether a tree is BST or not and at rebalancing algorithm as it affects other function. Some function did not work as intended. Great work!   | 1                        | 1                 | 1       | 1    | 1          | 1     | 0         | Great work!  | 80           | 80                      | AB                   |                    |
| 35 | 5025211257 (ADIK) | Immanuel Pascanov Samosir | 15       | 10              | 10    | 10               | 7        | 10               | 10                | 8        | There is slight error in the checking of whether a tree is BST or not and at rebalancing algorithm as it affects other function. Some function did not work as intended. And please provide output picture in your report. Great work! | 1                        | 1                 | 0       | 1    | 1          | 1     | 0         | Please use template subject next time. Great work! | 78           | 78                      | AB                   |                    |
|    |                   | <b>Minimum</b>            | 15       | 10              | 10    | 10               | 7        | 10               | 10                | 5        |  |                          |                   |         |      |            |       |           |  | 78           | 73                      | B                    |                    |
|    |                   | <b>Maximum</b>            | 20       | 10              | 10    | 10               | 10       | 15               | 15                | 10       |  |                          |                   |         |      |            |       |           |  | 100          | 100                     | A                    |                    |
|    |                   | <b>Average</b>            | 16.43    | 10.00           | 10.00 | 10.00            | 8.63     | 12.29            | 12.29             | 8.66     |  |                          |                   |         |      |            |       |           |  | 87.89        | 87.62                   | A                    |                    |

| Grade Distribution |           |             |
|--------------------|-----------|-------------|
| Category           | Amount    | Percentage  |
| A                  | 18        | 51%         |
| AB                 | 16        | 46%         |
| B                  | 1         | 3%          |
| BC                 | 0         | 0%          |
| C                  | 0         | 0%          |
| D                  | 0         | 0%          |
| E                  | 0         | 0%          |
| <b>Total</b>       | <b>35</b> | <b>100%</b> |