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**Class**: INF2A

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| **Optimized Query** | SELECT \* FROM user WHERE username = ‘99874246’ |
| **Index Statement** | No index. |
| **Execution Time** | 21 ms / 12 ms / 11 ms |
| **Motivation for the chosen index** | No index. |

**Row size:** ±16000

We used both ‘B-Tree’ and ‘Hash’ indexes where possible, to see the difference between the execution times.

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| **Optimized Query** | SELECT \* FROM user WHERE username = ‘99874246’ |
| **Index Statement** | CREATE UNIQUE INDEX user\_username\_index ON "user" (username); |
| **Execution Time** | 23 ms / 21 ms / 22 ms |
| **Motivation for the chosen index** | First off we tried optimizing the query using ‘B-tree’ and the unique keyword. |

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| **Optimized Query** | SELECT \* FROM user WHERE username = ‘99874246’ |
| **Index Statement** | CREATE INDEX user\_username\_index ON "user" USING hash (username); |
| **Execution Time** | 11 ms / 11 ms / 12 ms |
| **Motivation for the chosen index** | ‘Hash’ indexes are used for simple equality comparisons, just like the query itself. |

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| **Optimized Query** | SELECT own.name FROM own, user WHERE own.username = user.username AND user.username = ‘10163816’ |
| **Index Statement** | No index. |
| **Execution Time** | 21 ms / 22 ms / 22 ms |
| **Motivation for the chosen index** | No index. |

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| **Optimized Query** | SELECT own.name FROM own, user WHERE own.username = user.username AND user.username = ‘10163816’ |
| **Index Statement** | CREATE INDEX own\_username\_index  ON own (username)  CREATE INDEX user\_username\_index  ON user (username) |
| **Execution Time** | 11 ms / 11 ms / 12 ms |
| **Motivation for the chosen index** | For this query we used a standard ‘B-Tree’ index. |

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| **Optimized Query** | SELECT own.name FROM own, user WHERE own.username = user.username AND user.username = ‘10163816’ |
| **Index Statement** | CREATE INDEX own\_username\_index  ON own USING hash (username)  CREATE INDEX user\_username\_index  ON user USING hash (username) |
| **Execution Time** | 12 ms / 12 ms / 11 ms |
| **Motivation for the chosen index** | For this query we used a ‘Hash’ index. |