Output:

**Building database from file...**

**REHASHING**

**Old load factor: 76.92%**

**Old Collision Number: 1**

**1. 918002229613 5 Sec Rule Game PlayMonster 13.99 Chinese**

**2. 898992456331 Pictionary Hasbro Gaming 64.54 English**

**3. 298770307132 Catan CATAN 29.99 English**

**4. 662670343002 Clue Hasbro Gaming 7.88 English**

**5. 236770863475 Dixit Asmodee 25.54 Chinese**

**6. 012856503094 Monopoly Hasbro Gaming 19.99 English**

**7. 355961226486 Gestos Hasbro Gaming 16.99 Spanish**

**8. 126999100123 Monopoly Hasbro Gaming 19.99 English**

**9. 806899244337 Monopoly Hasbro Gaming 19.99 English**

**10. 709394577934 7 Wonders Asmodee 49.99 English**

**11. 256393379812 Blokus Mattel Games 14.28 Spanish**

**New load factor: 34.78%**

**New Collision Number: 3**

**1. 298770307132 Catan CATAN 29.99 English**

**2. 898992456331 Pictionary Hasbro Gaming 64.54 English**

**3. 355961226486 Gestos Hasbro Gaming 16.99 Spanish**

**4. 126999100123 Monopoly Hasbro Gaming 19.99 English**

**5. 236770863475 Dixit Asmodee 25.54 Chinese**

**6. 806899244337 Monopoly Hasbro Gaming 19.99 English**

**7. 709394577934 7 Wonders Asmodee 49.99 English**

**8. 256393379812 Blokus Mattel Games 14.28 Spanish**

**9. 662670343002 Clue Hasbro Gaming 7.88 English**

**10. 918002229613 5 Sec Rule Game PlayMonster 13.99 Chinese**

**11. 012856503094 Monopoly Hasbro Gaming 19.99 English**

**Complete HashTable**

**Load Factor: 69.57%**

**Collision Number: 12**

**1. 218500985437 Rummikub Pressman 17.99 English**

**2. 288715482565 Carcassonne Z-Man Games 27.95 Spanish**

**3. 298770307132 Catan CATAN 29.99 English**

**4. 169932466895 Yahtzee Hasbro Gaming 12.00 English**

**5. 630509426027 Risk Hasbro Gaming 19.98 English**

**6. 649322786695 Terraforming Mars Indie Boards and Cards 69.95 English**

**7. 898992456331 Pictionary Hasbro Gaming 64.54 English**

**8. 355961226486 Gestos Hasbro Gaming 16.99 Spanish**

**9. 126999100123 Monopoly Hasbro Gaming 19.99 English**

**10. 597783246658 Battleship Hasbro Gaming 16.99 English**

**11. 236770863475 Dixit Asmodee 25.54 Chinese**

**12. 806899244337 Monopoly Hasbro Gaming 19.99 English**

**13. 655489327785 Scrabble Hasbro Gaming 16.99 English**

**14. 853211004127 Sheriff of Nottingham Arcane Wonders 34.98 Chinese**

**15. 709394577934 7 Wonders Asmodee 49.99 English**

**16. 689445256896 Sorry! Hasbro Gaming 12.99 English**

**17. 070847811169 Sorry! Hasbro Gaming 12.99 English**

**18. 264435659563 Castle Panic Fireside Games 34.99 English**

**19. 256393379812 Blokus Mattel Games 14.28 Spanish**

**20. 692605710288 Three Kingdom Kill Yokagames 39.99 Chinese**

**21. 627003428793 Saboteur The Duel AMIGO Games 8.99 Spanish**

**22. 662670343002 Clue Hasbro Gaming 7.88 English**

**23. 918002229613 5 Sec Rule Game PlayMonster 13.99 Chinese**

**24. 012856503094 Monopoly Hasbro Gaming 19.99 English**

**25. 518501723322 Splendor Asmodee 19.00 English**

**What do you want to do?**

**A - Insert a boardgame into the database**

**B - Delete a list of boardgames from the database**

**C - Undo the last deleted boardgame**

**D - Search for a boardgame in the database**

**E - Display a boardgame from the database**

**F - Save data to file**

**G - Display statistics**

**H - Quit the program**

**I - Show help menu**

**Enter your choice from the menu:**

E

**List**

**=======**

**Enter "H" to see unsorted hash list, "B" to see boardgames sorted by barcodes, "T" to see boardgames sorted by titles, "I" to see the tree indented based on the level of each node, or "Q" to quit the list manager**

H

**Hash Table Data**

**=======**

**Unsorted Hash Table:**

**1. 218500985437 Rummikub Pressman 17.99 English**

**2. 288715482565 Carcassonne Z-Man Games 27.95 Spanish**

**3. 298770307132 Catan CATAN 29.99 English**

**4. 169932466895 Yahtzee Hasbro Gaming 12.00 English**

**5. 630509426027 Risk Hasbro Gaming 19.98 English**

**6. 649322786695 Terraforming Mars Indie Boards and Cards 69.95 English**

**7. 898992456331 Pictionary Hasbro Gaming 64.54 English**

**8. 355961226486 Gestos Hasbro Gaming 16.99 Spanish**

**9. 126999100123 Monopoly Hasbro Gaming 19.99 English**

**10. 597783246658 Battleship Hasbro Gaming 16.99 English**

**11. 236770863475 Dixit Asmodee 25.54 Chinese**

**12. 806899244337 Monopoly Hasbro Gaming 19.99 English**

**13. 655489327785 Scrabble Hasbro Gaming 16.99 English**

**14. 853211004127 Sheriff of Nottingham Arcane Wonders 34.98 Chinese**

**15. 709394577934 7 Wonders Asmodee 49.99 English**

**16. 689445256896 Sorry! Hasbro Gaming 12.99 English**

**17. 070847811169 Sorry! Hasbro Gaming 12.99 English**

**18. 264435659563 Castle Panic Fireside Games 34.99 English**

**19. 256393379812 Blokus Mattel Games 14.28 Spanish**

**20. 692605710288 Three Kingdom Kill Yokagames 39.99 Chinese**

**21. 627003428793 Saboteur The Duel AMIGO Games 8.99 Spanish**

**22. 662670343002 Clue Hasbro Gaming 7.88 English**

**23. 918002229613 5 Sec Rule Game PlayMonster 13.99 Chinese**

**24. 012856503094 Monopoly Hasbro Gaming 19.99 English**

**25. 518501723322 Splendor Asmodee 19.00 English**

**Enter "H" to see unsorted hash list, "B" to see boardgames sorted by barcodes, "T" to see boardgames sorted by titles, "I" to see the tree indented based on the level of each node, or "Q" to quit the list manager**

B

**Sorted Barcode Data**

**=======**

**In Order Barcode Tree:**

**012856503094 Monopoly Hasbro Gaming 19.99 English**

**070847811169 Sorry! Hasbro Gaming 12.99 English**

**126999100123 Monopoly Hasbro Gaming 19.99 English**

**169932466895 Yahtzee Hasbro Gaming 12.00 English**

**218500985437 Rummikub Pressman 17.99 English**

**236770863475 Dixit Asmodee 25.54 Chinese**

**256393379812 Blokus Mattel Games 14.28 Spanish**

**264435659563 Castle Panic Fireside Games 34.99 English**

**288715482565 Carcassonne Z-Man Games 27.95 Spanish**

**298770307132 Catan CATAN 29.99 English**

**355961226486 Gestos Hasbro Gaming 16.99 Spanish**

**518501723322 Splendor Asmodee 19.00 English**

**597783246658 Battleship Hasbro Gaming 16.99 English**

**627003428793 Saboteur The Duel AMIGO Games 8.99 Spanish**

**630509426027 Risk Hasbro Gaming 19.98 English**

**649322786695 Terraforming Mars Indie Boards and Cards 69.95 English**

**655489327785 Scrabble Hasbro Gaming 16.99 English**

**662670343002 Clue Hasbro Gaming 7.88 English**

**689445256896 Sorry! Hasbro Gaming 12.99 English**

**692605710288 Three Kingdom Kill Yokagames 39.99 Chinese**

**709394577934 7 Wonders Asmodee 49.99 English**

**806899244337 Monopoly Hasbro Gaming 19.99 English**

**853211004127 Sheriff of Nottingham Arcane Wonders 34.98 Chinese**

**898992456331 Pictionary Hasbro Gaming 64.54 English**

**918002229613 5 Sec Rule Game PlayMonster 13.99 Chinese**

**Enter "H" to see unsorted hash list, "B" to see boardgames sorted by barcodes, "T" to see boardgames sorted by titles, "I" to see the tree indented based on the level of each node, or "Q" to quit the list manager**

T

**Sorted Title Data**

**=======**

**In Order Title Tree:**

**918002229613 5 Sec Rule Game PlayMonster 13.99 Chinese**

**709394577934 7 Wonders Asmodee 49.99 English**

**597783246658 Battleship Hasbro Gaming 16.99 English**

**256393379812 Blokus Mattel Games 14.28 Spanish**

**288715482565 Carcassonne Z-Man Games 27.95 Spanish**

**264435659563 Castle Panic Fireside Games 34.99 English**

**298770307132 Catan CATAN 29.99 English**

**662670343002 Clue Hasbro Gaming 7.88 English**

**236770863475 Dixit Asmodee 25.54 Chinese**

**355961226486 Gestos Hasbro Gaming 16.99 Spanish**

**126999100123 Monopoly Hasbro Gaming 19.99 English**

**012856503094 Monopoly Hasbro Gaming 19.99 English**

**806899244337 Monopoly Hasbro Gaming 19.99 English**

**898992456331 Pictionary Hasbro Gaming 64.54 English**

**630509426027 Risk Hasbro Gaming 19.98 English**

**218500985437 Rummikub Pressman 17.99 English**

**627003428793 Saboteur The Duel AMIGO Games 8.99 Spanish**

**655489327785 Scrabble Hasbro Gaming 16.99 English**

**853211004127 Sheriff of Nottingham Arcane Wonders 34.98 Chinese**

**689445256896 Sorry! Hasbro Gaming 12.99 English**

**070847811169 Sorry! Hasbro Gaming 12.99 English**

**518501723322 Splendor Asmodee 19.00 English**

**649322786695 Terraforming Mars Indie Boards and Cards 69.95 English**

**692605710288 Three Kingdom Kill Yokagames 39.99 Chinese**

**169932466895 Yahtzee Hasbro Gaming 12.00 English**

**Enter "H" to see unsorted hash list, "B" to see boardgames sorted by barcodes, "T" to see boardgames sorted by titles, "I" to see the tree indented based on the level of each node, or "Q" to quit the list manager**

I

**Indented Print**

**=======**

**Indented Names Tree:**

**Level 1. 5 Sec Rule Game**

**Level 2. 7 Wonders**

**Level 3. Blokus**

**Level 4. Catan**

**Level 5. Dixit**

**Level 6. Monopoly**

**Level 7. Monopoly**

**Level 8. Pictionary**

**Level 9. Sheriff of Nottingham**

**Level 10. Sorry!**

**Level 11. Sorry!**

**Level 12. Splendor**

**Level 13. Three Kingdom Kill**

**Level 14. Yahtzee**

**Level 14. Terraforming Mars**

**Level 10. Scrabble**

**Level 11. Saboteur The Duel**

**Level 12. Rummikub**

**Level 13. Risk**

**Level 9. Monopoly**

**Level 7. Gestos**

**Level 6. Clue**

**Level 5. Castle Panic**

**Level 6. Carcassonne**

**Level 4. Battleship**

**Indented Barcode Tree:**

**Level 1. 918002229613**

**Level 2. 709394577934**

**Level 3. 898992456331**

**Level 4. 806899244337**

**Level 5. 853211004127**

**Level 3. 256393379812**

**Level 4. 298770307132**

**Level 5. 355961226486**

**Level 6. 662670343002**

**Level 7. 689445256896**

**Level 8. 692605710288**

**Level 7. 597783246658**

**Level 8. 649322786695**

**Level 9. 655489327785**

**Level 9. 627003428793**

**Level 10. 630509426027**

**Level 8. 518501723322**

**Level 5. 264435659563**

**Level 6. 288715482565**

**Level 4. 236770863475**

**Level 5. 126999100123**

**Level 6. 169932466895**

**Level 7. 218500985437**

**Level 6. 012856503094**

**Level 7. 070847811169**

**Enter "H" to see unsorted hash list, "B" to see boardgames sorted by barcodes, "T" to see boardgames sorted by titles, "I" to see the tree indented based on the level of each node, or "Q" to quit the list manager**

Q

**Enter your choice from the menu:**

A

**Insert**

**=======**

**Enter the a 12 digit number for the barcode:**

123

**Please enter a valid entry (only 12 digit integers) or Q to stop inserting:**

111111111111

**Enter the title of the boardgame:**

Board Game

**Enter the brand name:**

Brand Name

**Enter the price of the boardgame (must be a double):**

abc

**Not a valid input! Please enter a double.**

12.99

**Enter the language of the boardgame:**

English

**The board game was successfully inserted into the list! If you want to insert another board game into the list, enter "Y" otherwise enter anything else.**

Y

**Enter the a 12 digit number for the barcode:**

111111111111

**111111111111 is already in the list. Enter another barcode or Q to stop inserting:**

222222222222

**Enter the title of the boardgame:**

Board Game

**Enter the brand name:**

Brand Name

**Enter the price of the boardgame (must be a double):**

12.99

**Enter the language of the boardgame:**

English

**The board game was successfully inserted into the list! If you want to insert another board game into the list, enter "Y" otherwise enter anything else.**

N

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_END INSERT SECTION \_\_\_\_\_**

**Enter your choice from the menu:**

I

**What do you want to do?**

**A - Insert a boardgame into the database**

**B - Delete a list of boardgames from the database**

**C - Undo the last deleted boardgame**

**D - Search for a boardgame in the database**

**E - Display a boardgame from the database**

**F - Save data to file**

**G - Display statistics**

**H - Quit the program**

**I - Show help menu**

**Enter your choice from the menu:**

B

**Delete**

**=======**

**Enter the barcode of the board game that you want to delete (or Q to stop deleting) :**

806899244337

**The Board Game: 806899244337 Monopoly Hasbro Gaming 19.99 English**

**has been deleted!**

**Enter the barcode of the board game that you want to delete (or Q to stop deleting) :**

012856503094

**The Board Game: 012856503094 Monopoly Hasbro Gaming 19.99 English**

**has been deleted!**

**Enter the barcode of the board game that you want to delete (or Q to stop deleting) :**

126999100123

**The Board Game: 126999100123 Monopoly Hasbro Gaming 19.99 English**

**has been deleted!**

**Enter the barcode of the board game that you want to delete (or Q to stop deleting) :**

126999100123

**The Board Game was not found in this list.**

**Enter the barcode of the board game that you want to delete (or Q to stop deleting) :**

E

**The Board Game was not found in this list.**

**Enter the barcode of the board game that you want to delete (or Q to stop deleting) :**

H

**The Board Game was not found in this list.**

**Enter the barcode of the board game that you want to delete (or Q to stop deleting) :**

Q

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_END DELETE SECTION\_\_\_\_\_**

**Enter your choice from the menu:**

E

**List**

**=======**

**Enter "H" to see unsorted hash list, "B" to see boardgames sorted by barcodes, "T" to see boardgames sorted by titles, "I" to see the tree indented based on the level of each node, or "Q" to quit the list manager**

H

**Hash Table Data**

**=======**

**Unsorted Hash Table:**

**1. 218500985437 Rummikub Pressman 17.99 English**

**2. 288715482565 Carcassonne Z-Man Games 27.95 Spanish**

**3. 222222222222 Board Game Brand Name 12.99 English**

**4. 298770307132 Catan CATAN 29.99 English**

**5. 169932466895 Yahtzee Hasbro Gaming 12.00 English**

**6. 630509426027 Risk Hasbro Gaming 19.98 English**

**7. 649322786695 Terraforming Mars Indie Boards and Cards 69.95 English**

**8. 898992456331 Pictionary Hasbro Gaming 64.54 English**

**9. 355961226486 Gestos Hasbro Gaming 16.99 Spanish**

**10. 597783246658 Battleship Hasbro Gaming 16.99 English**

**11. 236770863475 Dixit Asmodee 25.54 Chinese**

**12. 655489327785 Scrabble Hasbro Gaming 16.99 English**

**13. 853211004127 Sheriff of Nottingham Arcane Wonders 34.98 Chinese**

**14. 709394577934 7 Wonders Asmodee 49.99 English**

**15. 689445256896 Sorry! Hasbro Gaming 12.99 English**

**16. 070847811169 Sorry! Hasbro Gaming 12.99 English**

**17. 264435659563 Castle Panic Fireside Games 34.99 English**

**18. 256393379812 Blokus Mattel Games 14.28 Spanish**

**19. 692605710288 Three Kingdom Kill Yokagames 39.99 Chinese**

**20. 627003428793 Saboteur The Duel AMIGO Games 8.99 Spanish**

**21. 662670343002 Clue Hasbro Gaming 7.88 English**

**22. 918002229613 5 Sec Rule Game PlayMonster 13.99 Chinese**

**23. 518501723322 Splendor Asmodee 19.00 English**

**Enter "H" to see unsorted hash list, "B" to see boardgames sorted by barcodes, "T" to see boardgames sorted by titles, "I" to see the tree indented based on the level of each node, or "Q" to quit the list manager**

B

**Sorted Barcode Data**

**=======**

**In Order Barcode Tree:**

**070847811169 Sorry! Hasbro Gaming 12.99 English**

**111111111111 Board Game Brand Name 12.99 English**

**222222222222 Board Game Brand Name 12.99 English**

**169932466895 Yahtzee Hasbro Gaming 12.00 English**

**218500985437 Rummikub Pressman 17.99 English**

**236770863475 Dixit Asmodee 25.54 Chinese**

**256393379812 Blokus Mattel Games 14.28 Spanish**

**264435659563 Castle Panic Fireside Games 34.99 English**

**288715482565 Carcassonne Z-Man Games 27.95 Spanish**

**298770307132 Catan CATAN 29.99 English**

**355961226486 Gestos Hasbro Gaming 16.99 Spanish**

**518501723322 Splendor Asmodee 19.00 English**

**597783246658 Battleship Hasbro Gaming 16.99 English**

**627003428793 Saboteur The Duel AMIGO Games 8.99 Spanish**

**630509426027 Risk Hasbro Gaming 19.98 English**

**649322786695 Terraforming Mars Indie Boards and Cards 69.95 English**

**655489327785 Scrabble Hasbro Gaming 16.99 English**

**662670343002 Clue Hasbro Gaming 7.88 English**

**689445256896 Sorry! Hasbro Gaming 12.99 English**

**692605710288 Three Kingdom Kill Yokagames 39.99 Chinese**

**709394577934 7 Wonders Asmodee 49.99 English**

**853211004127 Sheriff of Nottingham Arcane Wonders 34.98 Chinese**

**898992456331 Pictionary Hasbro Gaming 64.54 English**

**918002229613 5 Sec Rule Game PlayMonster 13.99 Chinese**

**Enter "H" to see unsorted hash list, "B" to see boardgames sorted by barcodes, "T" to see boardgames sorted by titles, "I" to see the tree indented based on the level of each node, or "Q" to quit the list manager**

T

**Sorted Title Data**

**=======**

**In Order Title Tree:**

**918002229613 5 Sec Rule Game PlayMonster 13.99 Chinese**

**709394577934 7 Wonders Asmodee 49.99 English**

**597783246658 Battleship Hasbro Gaming 16.99 English**

**256393379812 Blokus Mattel Games 14.28 Spanish**

**222222222222 Board Game Brand Name 12.99 English**

**111111111111 Board Game Brand Name 12.99 English**

**288715482565 Carcassonne Z-Man Games 27.95 Spanish**

**264435659563 Castle Panic Fireside Games 34.99 English**

**298770307132 Catan CATAN 29.99 English**

**662670343002 Clue Hasbro Gaming 7.88 English**

**236770863475 Dixit Asmodee 25.54 Chinese**

**355961226486 Gestos Hasbro Gaming 16.99 Spanish**

**898992456331 Pictionary Hasbro Gaming 64.54 English**

**630509426027 Risk Hasbro Gaming 19.98 English**

**218500985437 Rummikub Pressman 17.99 English**

**627003428793 Saboteur The Duel AMIGO Games 8.99 Spanish**

**655489327785 Scrabble Hasbro Gaming 16.99 English**

**853211004127 Sheriff of Nottingham Arcane Wonders 34.98 Chinese**

**689445256896 Sorry! Hasbro Gaming 12.99 English**

**070847811169 Sorry! Hasbro Gaming 12.99 English**

**518501723322 Splendor Asmodee 19.00 English**

**649322786695 Terraforming Mars Indie Boards and Cards 69.95 English**

**692605710288 Three Kingdom Kill Yokagames 39.99 Chinese**

**169932466895 Yahtzee Hasbro Gaming 12.00 English**

**Enter "H" to see unsorted hash list, "B" to see boardgames sorted by barcodes, "T" to see boardgames sorted by titles, "I" to see the tree indented based on the level of each node, or "Q" to quit the list manager**

Q

**Enter your choice from the menu:**

C

**Undo delete on Monopoly was successful!**

**Enter your choice from the menu:**

F

**Destructor: Monopoly is deleted!**

**Destructor: Monopoly is deleted!**

**Enter your choice from the menu:**

C

**Sorry, there is nothing to undelete!**

**Enter your choice from the menu:**

B

**Delete**

**=======**

**Enter the barcode of the board game that you want to delete (or Q to stop deleting) :**

Q

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_END DELETE SECTION\_\_\_\_\_**

**Enter your choice from the menu:**

D

**Search**

**=======**

**Enter "T" if you would like to search the title tree, "B" if you would like to search the barcode tree, "H" if you would like to search the hash table, or "Q" to quit the search manager.**

T

**Enter a boardgame name (or Q to stop searching) :**

Blokus

**The Board Game was found:**

**256393379812 Blokus Mattel Games 14.28 Spanish**

**Enter "T" if you would like to search the title tree, "B" if you would like to search the barcode tree, "H" if you would like to search the hash table, or "Q" to quit the search manager.**

B

**Enter a barcode (or Q to stop searching) :**

918002229613

**The Board Game was found: 918002229613 5 Sec Rule Game PlayMonster 13.99 Chinese**

**Enter "T" if you would like to search the title tree, "B" if you would like to search the barcode tree, "H" if you would like to search the hash table, or "Q" to quit the search manager.**

H

**Enter a barcode to search the hash table (or Q to stop searching) :**

655489327785

**The Board Game was found in the hash table: 655489327785 Scrabble Hasbro Gaming 16.99 English**

**Enter "T" if you would like to search the title tree, "B" if you would like to search the barcode tree, "H" if you would like to search the hash table, or "Q" to quit the search manager.**

Q

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_END SEARCH SECTION \_\_\_\_\_**

**Enter your choice from the menu:**

E

**List**

**=======**

**Enter "H" to see unsorted hash list, "B" to see boardgames sorted by barcodes, "T" to see boardgames sorted by titles, "I" to see the tree indented based on the level of each node, or "Q" to quit the list manager**

I

**Indented Print**

**=======**

**Indented Names Tree:**

**Level 1. 5 Sec Rule Game**

**Level 2. 7 Wonders**

**Level 3. Blokus**

**Level 4. Catan**

**Level 5. Dixit**

**Level 6. Pictionary**

**Level 7. Sheriff of Nottingham**

**Level 8. Sorry!**

**Level 9. Sorry!**

**Level 10. Splendor**

**Level 11. Three Kingdom Kill**

**Level 12. Yahtzee**

**Level 12. Terraforming Mars**

**Level 8. Scrabble**

**Level 9. Saboteur The Duel**

**Level 10. Rummikub**

**Level 11. Risk**

**Level 7. Gestos**

**Level 8. Monopoly**

**Level 6. Clue**

**Level 5. Castle Panic**

**Level 6. Carcassonne**

**Level 7. Board Game**

**Level 8. Board Game**

**Level 4. Battleship**

**Indented Barcode Tree:**

**Level 1. 918002229613**

**Level 2. 709394577934**

**Level 3. 898992456331**

**Level 4. 853211004127**

**Level 3. 256393379812**

**Level 4. 298770307132**

**Level 5. 355961226486**

**Level 6. 662670343002**

**Level 7. 689445256896**

**Level 8. 692605710288**

**Level 7. 597783246658**

**Level 8. 649322786695**

**Level 9. 655489327785**

**Level 9. 627003428793**

**Level 10. 630509426027**

**Level 8. 518501723322**

**Level 5. 264435659563**

**Level 6. 288715482565**

**Level 4. 236770863475**

**Level 5. 169932466895**

**Level 6. 218500985437**

**Level 6. 070847811169**

**Level 7. 222222222222**

**Level 8. 111111111111**

**Level 9. 126999100123**

**Enter "H" to see unsorted hash list, "B" to see boardgames sorted by barcodes, "T" to see boardgames sorted by titles, "I" to see the tree indented based on the level of each node, or "Q" to quit the list manager**

Q

**Enter your choice from the menu:**

B

**Delete**

**=======**

**Enter the barcode of the board game that you want to delete (or Q to stop deleting) :**

918002229613

**The Board Game: 918002229613 5 Sec Rule Game PlayMonster 13.99 Chinese**

**has been deleted!**

**Enter the barcode of the board game that you want to delete (or Q to stop deleting) :**

Q

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_END DELETE SECTION\_\_\_\_\_**

**Enter your choice from the menu:**

E

**List**

**=======**

**Enter "H" to see unsorted hash list, "B" to see boardgames sorted by barcodes, "T" to see boardgames sorted by titles, "I" to see the tree indented based on the level of each node, or "Q" to quit the list manager**

I

**Indented Print**

**=======**

**Indented Names Tree:**

**Level 1. 7 Wonders**

**Level 2. Blokus**

**Level 3. Catan**

**Level 4. Dixit**

**Level 5. Pictionary**

**Level 6. Sheriff of Nottingham**

**Level 7. Sorry!**

**Level 8. Sorry!**

**Level 9. Splendor**

**Level 10. Three Kingdom Kill**

**Level 11. Yahtzee**

**Level 11. Terraforming Mars**

**Level 7. Scrabble**

**Level 8. Saboteur The Duel**

**Level 9. Rummikub**

**Level 10. Risk**

**Level 6. Gestos**

**Level 7. Monopoly**

**Level 5. Clue**

**Level 4. Castle Panic**

**Level 5. Carcassonne**

**Level 6. Board Game**

**Level 7. Board Game**

**Level 3. Battleship**

**Indented Barcode Tree:**

**Level 1. 709394577934**

**Level 2. 898992456331**

**Level 3. 853211004127**

**Level 2. 256393379812**

**Level 3. 298770307132**

**Level 4. 355961226486**

**Level 5. 662670343002**

**Level 6. 689445256896**

**Level 7. 692605710288**

**Level 6. 597783246658**

**Level 7. 649322786695**

**Level 8. 655489327785**

**Level 8. 627003428793**

**Level 9. 630509426027**

**Level 7. 518501723322**

**Level 4. 264435659563**

**Level 5. 288715482565**

**Level 3. 236770863475**

**Level 4. 169932466895**

**Level 5. 218500985437**

**Level 5. 070847811169**

**Level 6. 222222222222**

**Level 7. 111111111111**

**Level 8. 126999100123**

**Enter "H" to see unsorted hash list, "B" to see boardgames sorted by barcodes, "T" to see boardgames sorted by titles, "I" to see the tree indented based on the level of each node, or "Q" to quit the list manager**

Q

**Enter your choice from the menu:**

G

**Statistics**

**=======**

**Load Factor: 69.57%**

**Collision Number: 16Enter your choice from the menu:**

H

**Destructor: Dummy Game is deleted!**

**Destructor: 5 Sec Rule Game is deleted!**

**Destructor: Rummikub is deleted!**

**Destructor: Carcassonne is deleted!**

**Destructor: Board Game is deleted!**

**Destructor: Catan is deleted!**

**Destructor: Yahtzee is deleted!**

**Destructor: Risk is deleted!**

**Destructor: Terraforming Mars is deleted!**

**Destructor: Pictionary is deleted!**

**Destructor: Gestos is deleted!**

**Destructor: Battleship is deleted!**

**Destructor: Monopoly is deleted!**

**Destructor: Dixit is deleted!**

**Destructor: Scrabble is deleted!**

**Destructor: Sheriff of Nottingham is deleted!**

**Destructor: 7 Wonders is deleted!**

**Destructor: Sorry! is deleted!**

**Destructor: Sorry! is deleted!**

**Destructor: Castle Panic is deleted!**

**Destructor: Blokus is deleted!**

**Destructor: Three Kingdom Kill is deleted!**

**Destructor: Saboteur The Duel is deleted!**

**Destructor: Clue is deleted!**

**Destructor: Splendor is deleted!**

**Program ended with exit code: 0**