# **HackerRank**

# Library Management System

Read the details of the classes and the methods from here

### **Input Format**

Check this in the problem statement document.

### **Constraints**

Check this in the problem statement document.

### **Output Format**

Check this in the problem statement document.

```
CPPProgramming RupeshNasre CS2810 2 2
Book
None
ExistingBook CS2810 CS2910
PythonProgramming RupeshNasre CS2810 5 5
Member
CS24M015 Debasmita 2
NoBorrowLimit CS23M041 Neel
Member
CS23M041 Rupesh 10
CS24M015 CS2810
Borrow
CS24M015 CS2910
Borrow
CS24M015 CS2810
Borrow
CS23M041 CS2810
Borrow
CS23M041 CS2810
PrintBook
CS2910
PrintMember
CS24M015
```

```
PrintLibrary

Return
CS23M041 CS2810

Return
CS24M015 CS2810

Return
CS23M041 CS2910

PrintLibrary

UpdateCopiesCount
CS2810 -2

PrintLibrary

UpdateCopiesCount
CS2910 -5

PrintLibrary

Done
```

```
Invalid request! Book with same isbn already exists
Invalid request! Member with same id already exists
Invalid request! Borrow limit exceeded
Invalid request! Copy of book not available
CPPProgramming RupeshNasre
CS24M015 Debasmita CS2810 1
CS24M015 Debasmita CS2910 1
CPPProgramming RupeshNasre 0
UnknownTitle UnknownAuthor 0
CPPProgramming RupeshNasre 1
CS24M015 Debasmita
CS23M041 Neel
Invalid request! Book not borrowed
CPPProgramming RupeshNasre 2
UnknownTitle UnknownAuthor 0
CPPProgramming RupeshNasre 1
CS24M015 Debasmita
CS23M041 Neel
CPPProgramming RupeshNasre 0
UnknownTitle UnknownAuthor 0
CPPProgramming RupeshNasre 1
CS24M015 Debasmita
CS23M041 Neel
Invalid request! Count becomes negative
CPPProgramming RupeshNasre 0
UnknownTitle UnknownAuthor 0
CPPProgramming RupeshNasre 1
CS24M015 Debasmita
CS23M041 Neel
```

```
Book
EdgeCaseBook Author1 ISBN123 1 1

Book
CaseBook Author2 ISBN456 1 1
```

```
Member
CS30M001 John 1

Borrow
CS30M001 ISBN123

Borrow
CS30M001 ISBN123

Borrow
CS30M001 ISBN456

PrintMember
CS30M001

PrintLibrary

Done
```

```
Invalid request! Copy of book not available
Invalid request! Borrow limit exceeded
CS30M001 John ISBN123 1
EdgeCaseBook Author1 0
CaseBook Author2 1
CS30M001 John
```

```
Book
ReturnEdgeBook Author2 ISBN456 2 2
Book
EdgeBook Author1 ISBN123 2 2
NoBorrowLimit CS40M001 Alice
Member
CS40M002 Bob 1
Borrow
CS40M001 ISBN456
Borrow
CS40M002 ISBN456
Return
CS40M002 ISBN456
Return
CS40M002 ISBN456
Return
CS40M002 ISBN123
PrintMember
CS40M001
PrintMember
CS40M002
PrintLibrary
```

```
Invalid request! Book not borrowed
Invalid request! Copy of book exceeds total copies
CS40M001 Alice ISBN456 1
ReturnEdgeBook Author2 1
EdgeBook Author1 2
CS40M001 Alice
CS40M002 Bob
```

# **Sample Input 3**

```
Book
OOAIA RN CS2810 5 5

Member
CS24M015 Debasmita 1

Member
NoBorrowLimit CS23M041 Neel

Borrow
CS24M015 CS2810

Borrow
CS23M041 CS2810

PrintMember
CS23M041

PrintMember
CS24M015

PrintLibrary
Done
```

# **Sample Output 3**

```
CS23M041 Neel CS2810 1
CS24M015 Debasmita CS2810 1
OOAIA RN 3
CS24M015 Debasmita
CS23M041 Neel
```

```
Book
DBMS Author1 ISBN1 2 2

Book
None

Book
ExistingBook ISBN1 ISBN2

Member
Id1 John 5
```

```
Borrow
Id1 ISBN1

Borrow
Id1 ISBN1

PrintMember
Id1

Return
Id1 ISBN1

PrintMember
Id1

Done
```

```
Idl John ISBN1 2
Idl John ISBN1 1
```

# **Sample Input 5**

```
Book
None

Member
NoBorrowLimit Id1 Joe

Borrow
Id1 ISBN

UpdateCopiesCount
ISBN -10

PrintLibrary

UpdateCopiesCount
ISBN 4

PrintLibrary

Done
```

# **Sample Output 5**

```
Invalid request! Copy of book not available
Invalid request! Count becomes negative
UnknownTitle UnknownAuthor 0
Id1 Joe
UnknownTitle UnknownAuthor 4
Id1 Joe
```

```
Book
Algorithms Author3 ISBN567 3 3

Book
DataScience Author4 ISBN890 2 2
```

```
Member
CS45M001 Emma 2
Member
NoBorrowLimit CS45M002 Olivia
Borrow
CS45M001 ISBN567
Borrow
CS45M001 ISBN890
Borrow
CS45M001 ISBN567
Borrow
CS45M002 ISBN567
Return
CS45M001 ISBN567
Return
CS45M002 ISBN890
Return
CS45M002 ISBN567
PrintBook
ISBN567
PrintBook
ISBN890
PrintMember
CS45M001
PrintMember
CS45M002
PrintLibrary
Done
```

```
Invalid request! Borrow limit exceeded
Invalid request! Book not borrowed
Algorithms Author3
DataScience Author4
CS45M001 Emma ISBN890 1
Algorithms Author3 3
DataScience Author4 1
CS45M001 Emma
CS45M002 Olivia
```

```
Book
Algorithms Author5 ISBN201 3 3
AI Author6 ISBN202 2 2
CloudComputing Author7 ISBN203 4 4
```

Book Blockchain Author8 ISBN204 5 5 Member CS60M001 David 2 Member NoBorrowLimit CS60M002 Sophia Member CS60M003 Ethan 3 Borrow CS60M001 ISBN201 Borrow CS60M001 ISBN202 Borrow CS60M001 ISBN203 Borrow CS60M002 ISBN202 Borrow CS60M002 ISBN203 Borrow CS60M003 ISBN204 Borrow CS60M003 ISBN202 Borrow CS60M003 ISBN201 Borrow CS60M003 ISBN204 Return CS60M001 ISBN202 Return CS60M002 ISBN203 Return CS60M003 ISBN201 Return CS60M003 ISBN201 Return CS60M002 ISBN202 PrintBook ISBN201 PrintBook ISBN202 PrintMember CS60M001 PrintMember CS60M002 PrintLibrary

Done

```
Invalid request! Borrow limit exceeded
Invalid request! Copy of book not available
Invalid request! Book not borrowed
Algorithms Author5
AI Author6
CS60M001 David ISBN201 1
Algorithms Author5 2
AI Author6 2
CloudComputing Author7 4
Blockchain Author8 3
CS60M001 David
CS60M002 Sophia
CS60M003 Ethan
```

```
Book
Algorithms Author1 ISBN001 5 5
AI Author2 ISBN002 3 3
Book
MachineLearning Author3 ISBN003 4 4
Book
DeepLearning Author4 ISBN004 6 6
CloudComputing Author5 ISBN005 4 4
Blockchain Author6 ISBN006 2 2
QuantumComputing Author7 ISBN007 3 3
Book
BigData Author8 ISBN008 5 5
NeuralNetworks Author9 ISBN009 3 3
DataScience Author10 ISBN010 6 6
CS20M001 David 3
Member
NoBorrowLimit CS20M002 John
Member
CS20M003 Sarah 2
Member
CS20M004 Mike 4
CS20M005 Lily 1
Member
CS20M006 Alex 3
```

Member NoBorrowLimit CS20M007 Maria Member CS20M008 Tom 5 Member CS20M009 Emma 2 Member CS20M010 Ryan 4 Borrow CS20M001 ISBN001 Borrow CS20M002 ISBN002 Borrow CS20M003 ISBN003 PrintBook ISBN001 Borrow CS20M004 ISBN004 Borrow CS20M005 ISBN005 PrintMember CS20M001 Return CS20M001 ISBN001 PrintLibrary Borrow CS20M006 ISBN006 Return CS20M002 ISBN002 PrintBook ISBN004 Borrow CS20M007 ISBN007 Return CS20M003 ISBN003 PrintMember CS20M003 Return CS20M004 ISBN004 PrintLibrary Borrow CS20M008 ISBN008 Return CS20M005 ISBN005 PrintBook ISBN008

PrintMember

CS20M004 Done

# **Sample Output 8**

```
Algorithms Author1
CS20M001 David ISBN001 1
Algorithms Author1 5
AI Author2 2
MachineLearning Author3 3
DeepLearning Author4 5
CloudComputing Author5 3
Blockchain Author6 2
QuantumComputing Author7 3
BigData Author8 5
NeuralNetworks Author9 3
DataScience Author10 6
CS20M001 David
CS20M002 John
CS20M003 Sarah
CS20M004 Mike
CS20M005 Lily
CS20M006 Alex
CS20M007 Maria
CS20M008 Tom
CS20M009 Emma
CS20M010 Ryan
DeepLearning Author4
Algorithms Author1 5
AI Author2 3
MachineLearning Author3 4
DeepLearning Author4 6
CloudComputing Author5 3
Blockchain Author6 1
QuantumComputing Author7 2
BigData Author8 5
NeuralNetworks Author9 3
DataScience Author10 6
CS20M001 David
CS20M002 John
CS20M003 Sarah
CS20M004 Mike
CS20M005 Lily
CS20M006 Alex
CS20M007 Maria
CS20M008 Tom
CS20M009 Emma
CS20M010 Ryan
BigData Author8
```

```
Book
Algorithms Author1 ISBN001 5 5

Book
AI Author2 ISBN002 3 3

Book
MachineLearning Author3 ISBN003 4 4

Book
DeepLearning Author4 ISBN004 6 6
```

```
CloudComputing Author5 ISBN005 4 4
Blockchain Author6 ISBN006 2 2
QuantumComputing Author7 ISBN007 3 3
Book
BigData Author8 ISBN008 5 5
NeuralNetworks Author9 ISBN009 3 3
DataScience Author10 ISBN010 6 6
CyberSecurity Author11 ISBN011 4 4
Book
CloudNative Author12 ISBN012 5 5
EdgeComputing Author13 ISBN013 3 3
Book
IoT Author14 ISBN014 2 2
Book
DevOps Author15 ISBN015 6 6
Book
DigitalTransformation Author16 ISBN016 3 3
Book
BlockchainTechnology Author17 ISBN017 4 4
ArtificialIntelligence Author18 ISBN018 5 5
NeuralProcessing Author19 ISBN019 2 2
Robotics Author20 ISBN020 3 3
Book
Automation Author21 ISBN021 4 4
MachineVision Author22 ISBN022 6 6
BigDataAnalytics Author23 ISBN023 3 3
DataMining Author24 ISBN024 5 5
Book
DataEngineering Author25 ISBN025 4 4
Book
PredictiveAnalytics Author26 ISBN026 3 3
Book
SpeechRecognition Author27 ISBN027 4 4
ImageProcessing Author28 ISBN028 2 2
```

```
Book
NaturalLanguageProcessing Author29 ISBN029 5 5
AugmentedReality Author30 ISBN030 6 6
Book
VirtualReality Author31 ISBN031 4 4
QuantumMechanics Author32 ISBN032 2 2
SmartCities Author33 ISBN033 3 3
IoTDevelopment Author34 ISBN034 4 4
Book
AutonomousVehicles Author35 ISBN035 3 3
CloudInfrastructure Author36 ISBN036 5 5
GreenTech Author37 ISBN037 3 3
Sustainability Author38 ISBN038 4 4
CyberPhysicalSystems Author39 ISBN039 5 5
Book
ArtificialLife Author40 ISBN040 6 6
Book
QuantumComputing2 Author41 ISBN041 3 3
DigitalTwins Author42 ISBN042 4 4
SmartManufacturing Author43 ISBN043 2 2
Book
Biotechnology Author44 ISBN044 3 3
FinTech Author45 ISBN045 5 5
Bioinformatics Author46 ISBN046 4 4
Bioengineering Author47 ISBN047 6 6
Book
SmartFarming Author48 ISBN048 3 3
SustainableEnergy Author49 ISBN049 5 5
Book
ArtificialVision Author50 ISBN050 2 2
Member
CS30M001 David 3
Member
NoBorrowLimit CS30M002 John
```

Member CS30M003 Sarah 2 Member CS30M004 Mike 4 Member CS30M005 Lily 1 Member CS30M006 Alex 3 Member NoBorrowLimit CS30M007 Maria Member CS30M008 Tom 5 Member CS30M009 Emma 2 Member CS30M010 Ryan 4 Borrow CS30M001 ISBN001 Borrow CS30M002 ISBN002 Borrow CS30M003 ISBN003 PrintBook ISBN001 Borrow CS30M004 ISBN004 Borrow CS30M005 ISBN005 PrintMember CS30M001 Return CS30M001 ISBN001 PrintLibrary Borrow CS30M006 ISBN006 Return CS30M002 ISBN002 PrintBook ISBN004 Borrow CS30M007 ISBN007 Return CS30M003 ISBN003 PrintMember CS30M003 Return CS30M004 ISBN004

PrintLibrary Borrow CS30M008 ISBN008 Return CS30M005 ISBN005 PrintBook ISBN008 PrintMember CS30M004 Borrow CS30M009 ISBN009 Return CS30M006 ISBN006 Borrow CS30M010 ISBN010 Return CS30M008 ISBN008 PrintBook ISBN010 PrintLibrary Borrow CS30M009 ISBN020 Return CS30M010 ISBN010 PrintMember CS30M009 Borrow CS30M004 ISBN014 Return CS30M007 ISBN017 PrintLibrary Borrow CS30M005 ISBN024 Return CS30M003 ISBN007 Borrow CS30M008 ISBN022 PrintBook ISBN017 Return CS30M004 ISBN014 Borrow CS30M009 ISBN020 Return CS30M003 ISBN009 PrintMember

CS30M004

Done

### **Sample Output 9**

```
Algorithms Author1
CS30M001 David ISBN001 1
Algorithms Author1 5
AI Author2 2
MachineLearning Author3 3
DeepLearning Author4 5
CloudComputing Author5 3
Blockchain Author6 2
QuantumComputing Author7 3
BigData Author8 5
NeuralNetworks Author9 3
DataScience Author10 6
CyberSecurity Author11 4
CloudNative Author12 5
EdgeComputing Author13 3
IoT Author14 2
DevOps Author15 6
DigitalTransformation Author16 3
BlockchainTechnology Author17 4
ArtificialIntelligence Author18 5
NeuralProcessing Author19 2
Robotics Author20 3
Automation Author21 4
MachineVision Author22 6
BigDataAnalytics Author23 3
DataMining Author24 5
DataEngineering Author25 4
PredictiveAnalytics Author26 3
SpeechRecognition Author27 4
ImageProcessing Author28 2
NaturalLanguageProcessing Author29 5
AugmentedReality Author30 6
VirtualReality Author31 4
QuantumMechanics Author32 2
SmartCities Author33 3
IoTDevelopment Author34 4
AutonomousVehicles Author35 3
CloudInfrastructure Author36 5
GreenTech Author37 3
Sustainability Author38 4
CyberPhysicalSystems Author39 5
ArtificialLife Author40 6
QuantumComputing2 Author41 3
DigitalTwins Author42 4
SmartManufacturing Author43 2
Biotechnology Author44 3
FinTech Author45 5
Bioinformatics Author46 4
Bioengineering Author47 6
SmartFarming Author48 3
SustainableEnergy Author49 5
ArtificialVision Author50 2
CS30M001 David
CS30M002 John
CS30M003 Sarah
CS30M004 Mike
CS30M005 Lily
CS30M006 Alex
CS30M007 Maria
CS30M008 Tom
CS30M009 Emma
CS30M010 Ryan
DeepLearning Author4
```

Algorithms Author1 5 AI Author2 3 MachineLearning Author3 4 DeepLearning Author4 6 CloudComputing Author5 3 Blockchain Author6 1 QuantumComputing Author7 2 BigData Author8 5 NeuralNetworks Author9 3 DataScience Author10 6 CyberSecurity Author11 4 CloudNative Author12 5 EdgeComputing Author13 3 IoT Author14 2 DevOps Author15 6 DigitalTransformation Author16 3 BlockchainTechnology Author17 4 ArtificialIntelligence Author18 5 NeuralProcessing Author19 2 Robotics Author20 3 Automation Author21 4 MachineVision Author22 6 BigDataAnalytics Author23 3 DataMining Author24 5 DataEngineering Author25 4 PredictiveAnalytics Author26 3 SpeechRecognition Author27 4 ImageProcessing Author28 2 NaturalLanguageProcessing Author29 5 AugmentedReality Author30 6 VirtualReality Author31 4 QuantumMechanics Author32 2 SmartCities Author33 3 IoTDevelopment Author34 4 AutonomousVehicles Author35 3 CloudInfrastructure Author36 5 GreenTech Author37 3 Sustainability Author38 4 CyberPhysicalSystems Author39 5 ArtificialLife Author40 6 QuantumComputing2 Author41 3 DigitalTwins Author42 4 SmartManufacturing Author43 2 Biotechnology Author44 3 FinTech Author45 5 Bioinformatics Author46 4 Bioengineering Author47 6 SmartFarming Author48 3 SustainableEnergy Author49 5 ArtificialVision Author50 2 CS30M001 David CS30M002 John CS30M003 Sarah CS30M004 Mike CS30M005 Lily CS30M006 Alex CS30M007 Maria CS30M008 Tom CS30M009 Emma CS30M010 Ryan BigData Author8 DataScience Author10 Algorithms Author1 5 AI Author2 3 MachineLearning Author3 4 DeepLearning Author4 6 CloudComputing Author5 4 Blockchain Author6 2 QuantumComputing Author7 2 BigData Author8 5 NeuralNetworks Author9 2

DataScience Author10 5 CyberSecurity Author11 4 CloudNative Author12 5 EdgeComputing Author13 3 IoT Author14 2 DevOps Author15 6 DigitalTransformation Author16 3 BlockchainTechnology Author17 4 ArtificialIntelligence Author18 5 NeuralProcessing Author19 2 Robotics Author20 3 Automation Author21 4 MachineVision Author22 6 BigDataAnalytics Author23 3 DataMining Author24 5 DataEngineering Author25 4 PredictiveAnalytics Author26 3 SpeechRecognition Author27 4 ImageProcessing Author28 2 NaturalLanguageProcessing Author29 5 AugmentedReality Author30 6 VirtualReality Author31 4 QuantumMechanics Author32 2 SmartCities Author33 3 IoTDevelopment Author34 4 AutonomousVehicles Author35 3 CloudInfrastructure Author36 5 GreenTech Author37 3 Sustainability Author38 4 CyberPhysicalSystems Author39 5 ArtificialLife Author40 6 QuantumComputing2 Author41 3 DigitalTwins Author42 4 SmartManufacturing Author43 2 Biotechnology Author44 3 FinTech Author45 5 Bioinformatics Author46 4 Bioengineering Author47 6 SmartFarming Author48 3 SustainableEnergy Author49 5 ArtificialVision Author50 2 CS30M001 David CS30M002 John CS30M003 Sarah CS30M004 Mike CS30M005 Lily CS30M006 Alex CS30M007 Maria CS30M008 Tom CS30M009 Emma CS30M010 Ryan CS30M009 Emma ISBN009 1 CS30M009 Emma ISBN020 1 Invalid request! Copy of book exceeds total copies Algorithms Author1 5 AI Author2 3 MachineLearning Author3 4 DeepLearning Author4 6 CloudComputing Author5 4 Blockchain Author6 2 QuantumComputing Author7 2 BigData Author8 5 NeuralNetworks Author9 2 DataScience Author10 6 CyberSecurity Author11 4 CloudNative Author12 5 EdgeComputing Author13 3 IoT Author14 1 DevOps Author15 6 DigitalTransformation Author16 3 BlockchainTechnology Author17 4

```
ArtificialIntelligence Author18 5
NeuralProcessing Author19 2
Robotics Author20 2
Automation Author21 4
MachineVision Author22 6
BigDataAnalytics Author23 3
DataMining Author24 5
DataEngineering Author25 4
PredictiveAnalytics Author26 3
SpeechRecognition Author27 4
ImageProcessing Author28 2
NaturalLanguageProcessing Author29 5
AugmentedReality Author30 6
VirtualReality Author31 4
QuantumMechanics Author32 2
SmartCities Author33 3
IoTDevelopment Author34 4
AutonomousVehicles Author35 3
CloudInfrastructure Author36 5
GreenTech Author37 3
Sustainability Author38 4
CyberPhysicalSystems Author39 5
ArtificialLife Author40 6
QuantumComputing2 Author41 3
DigitalTwins Author42 4
SmartManufacturing Author43 2
Biotechnology Author44 3
FinTech Author45 5
Bioinformatics Author46 4
Bioengineering Author 47 6
SmartFarming Author48 3
SustainableEnergy Author49 5
ArtificialVision Author50 2
CS30M001 David
CS30M002 John
CS30M003 Sarah
CS30M004 Mike
CS30M005 Lily
CS30M006 Alex
CS30M007 Maria
CS30M008 Tom
CS30M009 Emma
CS30M010 Ryan
Invalid request! Book not borrowed
BlockchainTechnology Author17
Invalid request! Borrow limit exceeded
Invalid request! Book not borrowed
```

```
Algorithms Author1 ISBN101 5 5
Book
DataScience Author2 ISBN102 4 4
CloudComputing Author3 ISBN103 3 3
Book
Blockchain Author4 ISBN104 2 2
Book
AI Author5 ISBN105 6 6
Book
ML Author6 ISBN106 7 7
Book
QuantumComputing Author7 ISBN107 8 8
Book
BigData Author8 ISBN108 10 10
Book
IoT Author9 ISBN109 9 9
```

Robotics Author10 ISBN110 11 11 Book WebDevelopment Author11 ISBN111 12 12 Book CyberSecurity Author12 ISBN112 15 15 Book Networking Author13 ISBN113 13 13 Book PythonProgramming Author14 ISBN114 14 14 Book JavaProgramming Author15 ISBN115 20 20 Book DataMining Author16 ISBN116 18 18 Book CloudStorage Author17 ISBN117 25 25 Book AppDevelopment Author18 ISBN118 30 30 Book MobileComputing Author19 ISBN119 35 35 Book SoftwareEngineering Author20 ISBN120 40 40 Member CS01M001 John 3 Member CS01M002 Alice 3 Member NoBorrowLimit CS01M003 Bob Member CS01M004 Charlie 3 Member CS01M005 David 3 Member CS01M006 Emma 3 Member CS01M007 Frank 3 Member CS01M008 Grace 3 Member CS01M009 Hannah 3 Member CS01M010 Isaac 3 Member CS01M011 Jack 3 Member CS01M012 Kelly 3 Member CS01M013 Liam 3 Member CS01M014 Mike 3 Member CS01M015 Nancy 3 Member CS01M016 Olivia 3 Member CS01M017 Paul 3 Member CS01M018 Quinn 3 Member CS01M019 Ryan 3 Member CS01M020 Steve 3 Member NoBorrowLimit CS01M021 Tina Member CS01M022 Uma 3 Member CS01M023 Victor 3 Member CS01M024 Wendy 3 Member

CS01M025 Xander 3 Member CS01M026 Yara 3 Member CS01M027 Zach 3 Member CS01M028 Adam 3 Member CS01M029 Ben 3 Member CS01M030 Clara 3 Member CS01M031 Derek 3 Member CS01M032 Eva 3 Member CS01M033 Fiona 3 Member CS01M034 Gabe 3 Member CS01M035 Heidi 3 Member CS01M036 Ian 3 Member CS01M037 Julia 3 Member CS01M038 Kyle 3 Member CS01M039 Laura 3 Member CS01M040 Matt 3 Member CS01M041 Nora 3 Member CS01M042 Owen 3 Member CS01M043 Penny 3 Member CS01M044 Quinn 3 Member CS01M045 Ray 3 Member CS01M046 Sam 3 Member CS01M047 Tom 3 Member CS01M048 Ursula 3 Member CS01M049 Vince 3 Member CS01M050 Will 3 Member CS01M051 Xander 3 Member CS01M052 Yasmine 3 Member CS01M053 Zane 3 Member CS01M054 Alan 3 Member CS01M055 Brandon 3 Member CS01M056 Charlotte 3 Member CS01M057 Daniel 3 Member CS01M058 Emily 3 Member CS01M059 Fred 3 Member CS01M060 Grace 3

Member CS01M061 Harry 3 Member CS01M062 Ivy 3 Member CS01M063 Jack 3 Member CS01M064 Kate 3 Member CS01M065 Louis 3 Member CS01M066 Monica 3 Member CS01M067 Nathan 3 Member CS01M068 Olivia 3 Member CS01M069 Peter 3 Member CS01M070 Quinn 3 Borrow CS01M001 ISBN101 Borrow CS01M001 ISBN102 Borrow CS01M002 ISBN103 Borrow CS01M003 ISBN104 Borrow CS01M001 ISBN105 Borrow CS01M003 ISBN106 Borrow CS01M002 ISBN107 Borrow CS01M002 ISBN108 Borrow CS01M003 ISBN109 Borrow CS01M004 ISBN110 Borrow CS01M005 ISBN111 Borrow CS01M006 ISBN112 Borrow CS01M007 ISBN113 Borrow CS01M008 ISBN114 Borrow CS01M009 ISBN115 Borrow CS01M010 ISBN116 Borrow CS01M011 ISBN117 Borrow CS01M012 ISBN118 Borrow CS01M013 ISBN119 Return CS01M001 ISBN101 Return CS01M002 ISBN103 Return CS01M003 ISBN104 Return CS01M004 ISBN105 Return CS01M005 ISBN106 Return

CS01M006 ISBN107 Return CS01M007 ISBN108 Return CS01M008 ISBN109 Return CS01M009 ISBN110 Return CS01M010 ISBN111 Return CS01M011 ISBN112 Return CS01M012 ISBN113 CS01M013 ISBN114 Return CS01M014 ISBN115 Return CS01M015 ISBN116 Return CS01M016 ISBN117 Return CS01M017 ISBN118 Return CS01M018 ISBN119 PrintBook ISBN101 PrintMember CS01M001 PrintLibrary Done

### **Sample Output 10**

Invalid request! Book not borrowed Algorithms Author1 CS01M001 John ISBN102 1 CS01M001 John ISBN105 1 Algorithms Author1 5 DataScience Author2 3 CloudComputing Author3 3 Blockchain Author4 2 AI Author5 5 ML Author6 6 QuantumComputing Author7 7 BigData Author8 9 IoT Author9 8 Robotics Author10 10 WebDevelopment Author11 11 CyberSecurity Author12 14 Networking Author13 12 PythonProgramming Author14 13 JavaProgramming Author15 19 DataMining Author16 17

CloudStorage Author17 24 AppDevelopment Author18 29 MobileComputing Author19 34 SoftwareEngineering Author20 40 CS01M001 John CS01M002 Alice CS01M003 Bob CS01M004 Charlie CS01M005 David CS01M006 Emma CS01M007 Frank CS01M008 Grace CS01M009 Hannah CS01M010 Isaac CS01M011 Jack CS01M012 Kelly CS01M013 Liam CS01M014 Mike CS01M015 Nancy CS01M016 Olivia CS01M017 Paul CS01M018 Quinn CS01M019 Ryan CS01M020 Steve CS01M021 Tina CS01M022 Uma CS01M023 Victor CS01M024 Wendy CS01M025 Xander CS01M026 Yara CS01M027 Zach CS01M028 Adam CS01M029 Ben CS01M030 Clara CS01M031 Derek CS01M032 Eva CS01M033 Fiona CS01M034 Gabe CS01M035 Heidi CS01M036 Ian CS01M037 Julia CS01M038 Kyle CS01M039 Laura CS01M040 Matt CS01M041 Nora CS01M042 Owen CS01M043 Penny CS01M044 Quinn CS01M045 Ray CS01M046 Sam CS01M047 Tom CS01M048 Ursula CS01M049 Vince CS01M050 Will CS01M051 Xander CS01M052 Yasmine CS01M053 Zane CS01M054 Alan CS01M055 Brandon CS01M056 Charlotte CS01M057 Daniel CS01M058 Emily CS01M059 Fred CS01M060 Grace CS01M061 Harry CS01M062 Ivy CS01M063 Jack CS01M064 Kate CS01M065 Louis CS01M066 Monica CS01M067 Nathan

CS01M068 Olivia CS01M069 Peter CS01M070 Quinn

```
Algorithms Author1 ISBN001 5 5
DataScience Author2 ISBN002 3 3
Book
AI Author3 ISBN003 6 6
CloudComputing Author4 ISBN004 2 2
Book
Blockchain Author5 ISBN005 4 4
MachineLearning Author6 ISBN006 5 5
Book
CyberSecurity Author7 ISBN007 2 2
Networking Author8 ISBN008 3 3
CloudInfra Author9 ISBN009 7 7
DeepLearning Author10 ISBN010 6 6
DevOps Author11 ISBN011 8 8
Book
BigData Author12 ISBN012 9 9
Book
QuantumComputing Author13 ISBN013 4 4
Book
IoT Author14 ISBN014 3 3
BlockchainTech Author15 ISBN015 5 5
Robotics Author16 ISBN016 6 6
Automation Author17 ISBN017 4 4
AIinHealthcare Author18 ISBN018 5 5
ARVR Author19 ISBN019 2 2
Book
EdgeComputing Author20 ISBN020 6 6
SmartCities Author21 ISBN021 3 3
```

```
Book
5GTech Author22 ISBN022 7 7
TechInnovation Author23 ISBN023 6 6
Book
DataMining Author24 ISBN024 8 8
Book
CloudSecurity Author25 ISBN025 9 9
Book
AIResearch Author26 ISBN026 2 2
SelfDriving Author27 ISBN027 5 5
Book
WearableTech Author28 ISBN028 4 4
SmartMachines Author29 ISBN029 3 3
Book
NeuralNetworks Author30 ISBN030 6 6
BlockchainSecurity Author31 ISBN031 7 7
Book
BigDataAnalytics Author32 ISBN032 2 2
Book
TechnologyTrends Author33 ISBN033 4 4
Book
AlandEthics Author34 ISBN034 5 5
FinTech Author35 ISBN035 6 6
MedTech Author36 ISBN036 3 3
CyberDefense Author37 ISBN037 8 8
DigitalTwins Author38 ISBN038 2 2
Book
EdgeAI Author39 ISBN039 3 3
TechLeadership Author40 ISBN040 5 5
AlandRobotics Author41 ISBN041 6 6
CloudTech Author42 ISBN042 8 8
Book
TechStartups Author43 ISBN043 4 4
CloudAutomation Author44 ISBN044 7 7
MachineVision Author45 ISBN045 3 3
```

Book TechCulture Author46 ISBN046 6 6 Book TechforGood Author47 ISBN047 5 5 Book SmartTech Author48 ISBN048 4 4 Book EmergingTech Author49 ISBN049 2 2 TechEducation Author50 ISBN050 6 6 Member CS01M001 John 3 Member NoBorrowLimit CS01M002 Alice Member CS01M003 Bob 2 Member CS01M004 Eve 3 Member CS01M005 Emma 3 Member NoBorrowLimit CS01M006 Olivia Member CS01M007 Sophia 2 Member CS01M008 Noah 3 Member CS01M009 Liam 3 Member CS01M010 Mia 2 Member CS01M011 Lucas 2 Member CS01M012 Benjamin 3 Member CS01M013 James 3 Member CS01M014 Isabella 2 Member CS01M015 Jack 3 Member NoBorrowLimit CS01M016 Grace Member CS01M017 Ethan 3 Member CS01M018 Charlotte 3

CS01M019 William 2 Member CS01M020 Oliver 3 Borrow CS01M001 ISBN001 Borrow CS01M001 ISBN002 Borrow CS01M001 ISBN003 Borrow CS01M002 ISBN004 Borrow CS01M003 ISBN005 Borrow CS01M004 ISBN006 Borrow CS01M005 ISBN007 Borrow CS01M006 ISBN008 Borrow CS01M007 ISBN009 Borrow CS01M008 ISBN010 Borrow CS01M009 ISBN011 Borrow CS01M010 ISBN012 Borrow CS01M011 ISBN013 Borrow CS01M012 ISBN014 Borrow CS01M013 ISBN015 Borrow CS01M014 ISBN016 Borrow CS01M015 ISBN017 Borrow CS01M016 ISBN018 Borrow CS01M017 ISBN019 Return CS01M001 ISBN001 Return CS01M002 ISBN004 Return CS01M003 ISBN005

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# **Sample Output 11**

Algorithms Author1 AI Author3 Blockchain Author5 MachineLearning Author6 CyberSecurity Author7 CS01M001 John ISBN001 1 CS01M001 John ISBN002 1 CS01M001 John ISBN003 1 CS01M003 Bob ISBN004 1 Algorithms Author1 4 DataScience Author2 2 AI Author3 4 CloudComputing Author4 1 Blockchain Author5 3 MachineLearning Author6 4 CyberSecurity Author7 1 Networking Author8 2 CloudInfra Author9 6

DeepLearning Author10 5 DevOps Author11 7 BigData Author12 9 QuantumComputing Author13 4 IoT Author14 3 BlockchainTech Author15 5 Robotics Author16 6 Automation Author17 4 AIinHealthcare Author18 5 ARVR Author19 2 EdgeComputing Author20 6 SmartCities Author21 3 5GTech Author22 7 TechInnovation Author23 6 DataMining Author24 8 CloudSecurity Author25 9 AIResearch Author26 2 SelfDriving Author27 5 WearableTech Author28 4 SmartMachines Author29 3 NeuralNetworks Author30 6 BlockchainSecurity Author31 7 BigDataAnalytics Author32 2 TechnologyTrends Author33 4 AlandEthics Author34 5 FinTech Author35 6 MedTech Author36 3 CyberDefense Author37 8 DigitalTwins Author38 2 EdgeAI Author39 3 TechLeadership Author40 5 AlandRobotics Author41 6 CloudTech Author42 8 TechStartups Author43 4 CloudAutomation Author44 7 MachineVision Author45 3 TechCulture Author46 6 TechforGood Author47 5 SmartTech Author48 4 EmergingTech Author49 2 TechEducation Author50 6 CS01M001 John CS01M002 Alice CS01M003 Bob CS01M004 Eve CS01M005 Emma CS01M006 Olivia CS01M007 Sophia CS01M008 Noah CS01M009 Liam CS01M010 Mia CS01M011 Lucas CS01M012 Benjamin CS01M013 James CS01M014 Isabella CS01M015 Jack CS01M016 Grace CS01M017 Ethan CS01M018 Charlotte CS01M019 William CS01M020 Oliver AI Author3 CS01M001 John ISBN001 1 CS01M001 John ISBN002 1 Algorithms Author1 4 DataScience Author2 2 AI Author3 5 CloudComputing Author4 2 Blockchain Author5 3 MachineLearning Author6 5 CyberSecurity Author7 1

Networking Author8 2 CloudInfra Author9 7 DeepLearning Author10 6 DevOps Author11 7 BigData Author12 9 QuantumComputing Author13 4 IoT Author14 3 BlockchainTech Author15 5 Robotics Author16 6 Automation Author17 4 AIinHealthcare Author18 5 ARVR Author19 2 EdgeComputing Author20 6 SmartCities Author21 3 5GTech Author22 7 TechInnovation Author23 6 DataMining Author24 8 CloudSecurity Author25 9 AIResearch Author26 2 SelfDriving Author27 5 WearableTech Author28 4 SmartMachines Author29 3 NeuralNetworks Author30 6 BlockchainSecurity Author31 7 BigDataAnalytics Author32 2 TechnologyTrends Author33 4 AlandEthics Author34 5 FinTech Author35 6 MedTech Author36 3 CyberDefense Author37 8 DigitalTwins Author38 2 EdgeAI Author39 3 TechLeadership Author40 5 AlandRobotics Author41 6 CloudTech Author42 8 TechStartups Author43 4 CloudAutomation Author44 7 MachineVision Author45 3 TechCulture Author46 6 TechforGood Author47 5 SmartTech Author48 4 EmergingTech Author49 2 TechEducation Author50 6 CS01M001 John CS01M002 Alice CS01M003 Bob CS01M004 Eve CS01M005 Emma CS01M006 Olivia CS01M007 Sophia CS01M008 Noah CS01M009 Liam CS01M010 Mia CS01M011 Lucas CS01M012 Benjamin CS01M013 James CS01M014 Isabella CS01M015 Jack CS01M016 Grace CS01M017 Ethan CS01M018 Charlotte CS01M019 William CS01M020 Oliver