**44-542 Object-Oriented Programming**

**Lab09: Casting & Exceptions lab**

**Objective: Covers the usage of Casting, Exception handling, Inheritance, Interfaces and abstract classes.**

**NOTE:**

* Do not hard code any values.
* Go through the API provided for Interfaces and classes details.
* Check the sample output to know how the results need to be printed.
* Read every instruction carefully and follow them strictly.
* Do not change the name of the attributes, and methods given in API.
* Generate Javadoc and ensure that it should match the given Javadoc.
* @author annotation must contain your full name for all the classes in this project.
* Use @override annotation for every relevant method in all the classes of your project.

**How to View Javadoc**:

Go to “Javadoc” -> “index.html” to access the javadocs.

**Java Static variable:**

A static variable is common to all the instances (objects) of the class. A single copy of static variable is created and it is shared among all the instances of the class.

**Steps for Project Creation:**

1. Create a project and name it as Lastname\_Lab09CastingAndExceptions where Lastname is your last name.
2. Define the packages and classes given in the API provided to you.
3. Create a driver class based on the comments provided to you in LibraryDriver.java file.
4. Right-click the DVD class in the NetBeans Projects window and choose Tools, Create/ Update Tests and Select Junit as the framework.
5. A class DVDTest will be created inside Test Packages folder.
6. DVDTest.java file is provided to you for reference.
7. Similarly write test cases for Device and Member classes.
8. Check the sample output to know the proper appearance of your output.
9. Use shift+alt+f to indent your code.

The input file **library.txt** is provided to you, use the same file to read the data.

**Sample Output:**

|  |
| --- |
| exceptions.UnderAgeException: 919649853 : Not allowed to check out this book  exceptions.UnderAgeException: 919649853 : The DVD has a Restricted rating,Your are not allowed to check out this item  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  MemberID: 919649853  Name: Mike Husser  Age: 4  Title: THE GIVER, Available: false, BookID: NWM\_B\_2, RackNo: JV.1.2010, Edition: 4.0, Authors: Sierra, K., Goss, J., tek, L.  Title: android charger, Available: false, DeviceID: NWM\_D\_3, RackNo: droid Charger\_D\_7  Courses Taken: IOS,HCI,DV  Due Date: 12/30/2017 10:00:00 Return Date: 12/30/2017 10:05:00 Fine Amount: 0.0  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  MemberID: 919648107  Name: Sansa Stark  Age: 34  Title: THE HOBBIT, Available: false, BookID: NWM\_B\_5, RackNo: NW.2.2011, Edition: 2.0, Authors: Targaryan, J. S., Taylor, R., Ben, J.  Title: LEAVES OF GRASS, Available: false, BookID: NWM\_B\_6, RackNo: RS.3.2010, Edition: 4.0, Authors: Tolkie, J., Patrick, G., Brandon, N.  Title: android charger, Available: false, DeviceID: NWM\_D\_7, RackNo: droid Charger\_D\_7  Title: harrypoter3, Available: false, DVD ID: NWM\_DVD\_8, Rating: PG, Storage Capacity: 2.4  Department: MSACS  Due Date: 11/30/2017 10:00:00 Return Date: 12/30/2017 10:05:00 Fine Amount: 350.0  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  exceptions.MaximumItemsReachedException: 919646361 : You have reached your maximum limit  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  MemberID: 919646361  Name: Vamsi Ravva  Age: 15  Title: THE HUNGER GAMES, Available: false, BookID: NWM\_B\_9, RackNo: HL.4.2011, Edition: 2.0, Authors: Arml, D. L., Tan, P., Teck, T.  Title: THE GIVER, Available: false, BookID: NWM\_B\_10, RackNo: EB.5.2010, Edition: 4.0, Authors: Sierra, K., Goss, J., tek, L.  Title: android charger, Available: false, DeviceID: NWM\_D\_11, RackNo: droid Charger\_D\_8  Courses Taken: Android,PM,ITM  Due Date: 12/30/2017 10:00:00 Return Date: 12/30/2017 11:05:00 Fine Amount: 5.0  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  exceptions.MaximumItemsReachedException: 919644615 : You have reached your maximum limit  exceptions.MaximumItemsReachedException: 919644615 : You have reached your maximum limit  exceptions.MaximumItemsReachedException: 919644615 : You have reached your maximum limit  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  MemberID: 919644615  Name: Jacob  Age: 16  Title: BEAUTIFUL DISASTER, Available: false, BookID: NWM\_B\_13, RackNo: RN.6.2010, Edition: 4.0, Authors: McGuire, J., James, E. M., Bain, D., Land, J.  Title: MURDER, SHE WROTE, Available: false, BookID: NWM\_B\_14, RackNo: XQ.7.2003, Edition: 3.0, Authors: Jess, M. R., Judith, C., Stephens, E. J.  Title: laptop, Available: false, DeviceID: NWM\_D\_15, RackNo: ptop\_D\_8  Courses Taken: Web,NS,DA  Due Date: 10/25/2017 10:00:00 Return Date: 10/30/2017 11:05:00 Fine Amount: 60.0  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  exceptions.UnderAgeException: 919642869 : Not allowed to check out this book  exceptions.UnderAgeException: 919642869 : The DVD has a Parents Strongly Cautioned rating,Your are not allowed to check out this item  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  MemberID: 919642869  Name: Pavan Kalyan  Age: 12  Title: TWINKLE, Available: false, BookID: NWM\_B\_20, RackNo: HK.9.2010, Edition: 4.0, Authors: Tolkie, J., Patrick, G., Brandon, N.  Title: iphone charger, Available: false, DeviceID: NWM\_D\_21, RackNo: Iphone Charger\_D\_8  Courses Taken: Physics,Chemistry,Maths  Due Date: 11/06/2017 10:00:00 Return Date: 11/25/2017 10:05:00 Fine Amount: 70.0  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  exceptions.MaximumItemsReachedException: 919641123 : You have reached your maximum limit  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  MemberID: 919641123  Name: Junior NTR  Age: 10  Title: THE RALF, Available: false, BookID: NWM\_B\_23, RackNo: HC.10.2011, Edition: 1.0, Authors: Webber, T., Rowling, J. K.  Title: CAN'T LIVE, Available: false, BookID: NWM\_B\_24, RackNo: OT.11.2010, Edition: 4.0, Authors: Tolkie, J., Patrick, G., Brandon, N.  Title: android charger, Available: false, DeviceID: NWM\_D\_25, RackNo: droid Charger\_D\_8  Courses Taken: Biology,Maths,Science  Due Date: 12/05/2017 10:00:00 Return Date: 12/30/2017 10:05:00 Fine Amount: 90.0  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  MemberID: 919639377  Name: Rob Stark  Age: 30  Title: THE ONE, Available: false, BookID: NWM\_B\_27, RackNo: WB.12.2016, Edition: 4.0, Authors: Roth, V., Bain, D., Jess, R. R.  Title: LEAVES OF GRASS, Available: false, BookID: NWM\_B\_28, RackNo: WK.13.2010, Edition: 4.0, Authors: Tolkie, J., Patrick, G., Brandon, N.  Title: android charger, Available: false, DeviceID: NWM\_D\_29, RackNo: droid Charger\_D\_8  Title: harrypoter3, Available: false, DVD ID: NWM\_DVD\_30, Rating: PG, Storage Capacity: 2.4  Department: MSACS  Due Date: 10/30/2017 10:00:00 Return Date: 11/07/2017 10:00:00 Fine Amount: 80.0  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  exceptions.MaximumItemsReachedException: 919637631 : You have reached your maximum limit  exceptions.MaximumItemsReachedException: 919637631 : You have reached your maximum limit  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  MemberID: 919637631  Name: Frank Herbert  Age: 25  Title: OH MY GHOST, Available: false, BookID: NWM\_B\_31, RackNo: YC.14.2011, Edition: 3.0, Authors: Targaryan, J. S., Taylor, R., Ben, J.  Title: BEAUTIFUL WEATHER, Available: false, BookID: NWM\_B\_32, RackNo: DM.15.2010, Edition: 1.0, Authors: Hoover, C., Webber, T., Land, D. B.  Title: projector, Available: false, DeviceID: NWM\_D\_33, RackNo: ojector\_D\_8  Title: data cable, Available: false, DeviceID: NWM\_D\_34, RackNo: ta cable\_D\_8  Department: MSACS  Due Date: 11/29/2017 10:00:00 Return Date: 12/12/2017 10:05:00 Fine Amount: 120.0  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  MemberID: 919635885  Name: Hari Kiran  Age: 26  Title: EASY, Available: false, BookID: NWM\_B\_37, RackNo: RG.16.2005, Edition: 3.0, Authors: Green, J., Kim, R., Herbert, G. M.  Title: tablet, Available: false, DeviceID: NWM\_D\_38, RackNo: blet\_D\_8  Title: divergent, Available: false, DVD ID: NWM\_DVD\_39, Rating: PG\_13, Storage Capacity: 2.6  Department: MSIS  Due Date: 10/04/2017 10:00:00 Return Date: 10/12/2017 10:05:00 Fine Amount: 70.0  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  MemberID: 919634139  Name: Charles Kero  Age: 24  Title: THE HOBBIT, Available: false, BookID: NWM\_B\_40, RackNo: PG.17.2011, Edition: 2.0, Authors: Targaryan, J. S., Taylor, R., Ben, J.  Title: LEAVES OF GRASS, Available: false, BookID: NWM\_B\_41, RackNo: LZ.18.2010, Edition: 4.0, Authors: Tolkie, J., Patrick, G., Brandon, N.  Title: data cable, Available: false, DeviceID: NWM\_D\_42, RackNo: ta Cable\_D\_8  Title: the fault in our stars, Available: false, DVD ID: NWM\_DVD\_43, Rating: R, Storage Capacity: 2.7  Department: MSACS  Due Date: 11/08/2017 09:00:00 Return Date: 11/23/2017 09:05:00 Fine Amount: 110.0  \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*  --------------------------------------  Printing Student details  --------------------------------------  MemberID: 919649853  Name: Mike Husser  Age: 4  Title: THE GIVER, Available: false, BookID: NWM\_B\_2, RackNo: JV.1.2010, Edition: 4.0, Authors: Sierra, K., Goss, J., tek, L.  Title: android charger, Available: false, DeviceID: NWM\_D\_3, RackNo: droid Charger\_D\_7  Courses Taken: IOS,HCI,DV  MemberID: 919646361  Name: Vamsi Ravva  Age: 15  Title: THE HUNGER GAMES, Available: false, BookID: NWM\_B\_9, RackNo: HL.4.2011, Edition: 2.0, Authors: Arml, D. L., Tan, P., Teck, T.  Title: THE GIVER, Available: false, BookID: NWM\_B\_10, RackNo: EB.5.2010, Edition: 4.0, Authors: Sierra, K., Goss, J., tek, L.  Title: android charger, Available: false, DeviceID: NWM\_D\_11, RackNo: droid Charger\_D\_8  Courses Taken: Android,PM,ITM  MemberID: 919644615  Name: Jacob  Age: 16  Title: BEAUTIFUL DISASTER, Available: false, BookID: NWM\_B\_13, RackNo: RN.6.2010, Edition: 4.0, Authors: McGuire, J., James, E. M., Bain, D., Land, J.  Title: MURDER, SHE WROTE, Available: false, BookID: NWM\_B\_14, RackNo: XQ.7.2003, Edition: 3.0, Authors: Jess, M. R., Judith, C., Stephens, E. J.  Title: laptop, Available: false, DeviceID: NWM\_D\_15, RackNo: ptop\_D\_8  Courses Taken: Web,NS,DA  MemberID: 919642869  Name: Pavan Kalyan  Age: 12  Title: TWINKLE, Available: false, BookID: NWM\_B\_20, RackNo: HK.9.2010, Edition: 4.0, Authors: Tolkie, J., Patrick, G., Brandon, N.  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Title: android charger, Available: false, DeviceID: NWM\_D\_29, RackNo: droid Charger\_D\_8  Title: harrypoter3, Available: false, DVD ID: NWM\_DVD\_30, Rating: PG, Storage Capacity: 2.4  Department: MSACS  MemberID: 919637631  Name: Frank Herbert  Age: 25  Title: OH MY GHOST, Available: false, BookID: NWM\_B\_31, RackNo: YC.14.2011, Edition: 3.0, Authors: Targaryan, J. S., Taylor, R., Ben, J.  Title: BEAUTIFUL WEATHER, Available: false, BookID: NWM\_B\_32, RackNo: DM.15.2010, Edition: 1.0, Authors: Hoover, C., Webber, T., Land, D. B.  Title: projector, Available: false, DeviceID: NWM\_D\_33, RackNo: ojector\_D\_8  Title: data cable, Available: false, DeviceID: NWM\_D\_34, RackNo: ta cable\_D\_8  Department: MSACS  MemberID: 919635885  Name: Hari Kiran  Age: 26  Title: EASY, Available: false, BookID: NWM\_B\_37, RackNo: RG.16.2005, Edition: 3.0, Authors: Green, J., Kim, R., Herbert, G. M.  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**Submit you solution by following the steps below:**

* Save your files in NetBeans.
* Zip your entire Project. (It should be called **Lastname\_lab09CastingAndExceptions**.zip where Last name is your last name.)
* Submit the Zip file to the **lab09CastingAndExceptions** dropbox.
* Download the Zip file which you have submitted.
* Look in the Zip file and verify the class files, javadocs in the Zip folder are updated. If not, resave your project in **NetBeans** and resubmit.