//Student's Full Name- Tasfique Enam

//Student's ID- J16020825/5886429

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```
Output - LabTask3 (run)
run:
*******************
1. Add Cruise ship or Cargo Ship.
2. Edit Ship Capacity.
3. Display
4. Exit
*********************
Please the enter the number '1' '2' '3' :1
What ship do your want?
1. Cruise Ship
2. Cargo Ship
1
Enter Cruise Ship Name
Taz
Enter Cruise Ship Year
2000
Enter the number of Passenger
100
*******************
1. Add Cruise ship or Cargo Ship.
2. Edit Ship Capacity.
3. Display
4. Exit
*********************
Please the enter the number '1' '2' '3' :1
What ship do your want?
1. Cruise Ship
2. Cargo Ship
2
Enter Cargo Ship Name
John
Enter Cargo Ship Year
1997
Enter the Cargo Capacity
3000
*******************
1. Add Cruise ship or Cargo Ship.
2. Edit Ship Capacity.
3. Display
4. Exit
*********************
Please the enter the number '1' '2' '3' :3
```

```
4. Exit
********************
Please the enter the number '1' '2' '3' :3
The Name of the Ship is Taz
The Year of the Ship is 2000
Maximum Passenger for the Ship is 100

The Name of the Ship is John
The Year of the Ship is 1997
The Cargo Capacity is 3000

*******************
1. Add Cruise ship or Cargo Ship.
2. Edit Ship Capacity.
3. Display
4. Exit
*********************
Please the enter the number '1' '2' '3' :2
Input the Array index number of the Ship

0
Enter the new Passenger Number for Ship Index 0
90000
New Passenger Number have been updated.
*******************
1. Add Cruise ship or Cargo Ship.
2. Edit Ship Capacity.
3. Display
4. Exit
*********************
Please the enter the number '1' '2' '3' :3
The Name of the Ship is Taz
The Year of the Ship is 2000
Maximum Passenger for the Ship is 90000

The Name of the Ship is John
The Year of the Ship is 1997
The Cargo Capacity is 3000

*******************
1. Add Cruise ship or Cargo Ship.
2. Edit Ship Capacity.
```

```
The Year of the Ship is 2000
Maximum Passenger for the Ship is 100

The Name of the Ship is John
The Year of the Ship is 1997
The Cargo Capacity is 3000

********************
1. Add Cruise ship or Cargo Ship.
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Please the enter the number '1' '2' '3' :2
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*********************
Please the enter the number '1' '2' '3' :3
The Name of the Ship is Taz
The Year of the Ship is 2000
Maximum Passenger for the Ship is 90000

The Name of the Ship is John
The Year of the Ship is 1997
The Cargo Capacity is 3000

********************
1. Add Cruise ship or Cargo Ship.
2. Edit Ship Capacity.
3. Display
4. Exit
*********************
Please the enter the number '1' '2' '3' :
```

package labtask3;

import java.util.ArrayList;

import java.util.Scanner;

```java
public class ShipApp {

    public static void main (String[]args) {

        int option, shipSelection;

        Scanner read = new Scanner(System.in);

        ArrayList<Ship> shipList = new ArrayList<>();


        do{

            System.out.print("******************\n" + //display menu

                    "1. Add Cruise ship or Cargo Ship.\n" +

                    "2. Edit Ship Capacity.\n" +

                    "3. Display\n"+

                    "4. Exit\n"+

                    "*******************\n" +

                    "Please the enter the number '1' '2' '3' :");

            option = read.nextInt();


            switch(option) {

                case 1:
                {

                    System.out.println("What ship do your want? ");

                    System.out.println("1. Cruise Ship");

                    System.out.println("2. Cargo Ship");


                    shipSelection = read.nextInt();


                    switch(shipSelection) {

                        case 1:  //Case 1 ask for cruise ship input
                        {

                            System.out.println("Enter Cruise Ship Name ");

                            String shipName = read.next();

                            System.out.println("Enter Cruise Ship Year ");
```

```java
                String year = read.next();

                System.out.println("Enter the number of Passenger");

                int MaximumPassenger = read.nextInt();

                CruiseShip CruiseShipObj = new CruiseShip();

                CruiseShipObj.setShipName(shipName);

                CruiseShipObj.setYear(year);

                CruiseShipObj.setMaximumPassenger(MaximumPassenger);

                shipList.add(CruiseShipObj);


                break;
            }


            case 2: //case 2 ask for cargo ship input
            {
                System.out.println("Enter Cargo Ship Name ");

                String shipName = read.next();

                System.out.println("Enter Cargo Ship Year ");

                String year = read.next();

                System.out.println("Enter the Cargo Capacity");

                int CargoCapacity = read.nextInt();

                CargoShip CargoShipObj = new CargoShip();

                CargoShipObj.setShipName(shipName);

                CargoShipObj.setYear(year);

                CargoShipObj.setCargoCapacity(CargoCapacity);

                shipList.add(CargoShipObj);


                break;
            }
        }
    break;
}
```

```java
        case 2:
        {
            System.out.println("Input the Array index number of the Ship\n"); //entering index
number of of the ship the user wants to edit
            int index = read.nextInt();


            if (shipList.get(index)instanceof CruiseShip) { //using instance of
                System.out.println("Enter the new Passenger Number for Ship Index "+index);
                int PassengerNumber = read.nextInt();
                CruiseShip cruiseship =(CruiseShip) shipList.get(index); //this is down casting
                cruiseship.setMaximumPassenger(PassengerNumber);
                System.out.println("New Passenger Number have been updated.");


            } else if (shipList.get(index)instanceof CargoShip) {
                System.out.println("Enter the new Cargo Capacity for Ship Index "+index);
                int CargoCapacity = read.nextInt();
                CargoShip cargoship =(CargoShip) shipList.get(index);
                cargoship.setCargoCapacity(CargoCapacity);
                System.out.println("New Cargo Capacity have been updated.");
            }

        }

        break;

        case 3:
        {
            for(Ship data: shipList){ //displaying all the data
                data.displayDetails();
                System.out.println();
            }
```

```java
            }
            break;

            case 4:
            {
               option = 0;
               break;
            }
            default:
            {
               System.out.println("You have inputted the wrong value. ");


            }


            }




      }while (option!=0);
   }

}



package labtask3;



public abstract class Ship {
   String  shipName;
   String year;
```

```java
    public Ship () { //default constructor

        shipName = null;

        year = null;

    }


    public void setShipName (String shipName) { //setter

        this.shipName = shipName;

    }


    public void setYear (String year) {

        this.year = year;

    }


    public String getShipName () { //getter

        return shipName;

    }


    public String getYear () {

        return year;

    }


    public abstract void displayDetails();  //abstract method




}
```

```java
package labtask3;

public class CruiseShip extends Ship {
    private int MaximumPassenger;

    public CruiseShip () {

        super();
        shipName = null;
        year = null;
        MaximumPassenger = 0;
    }

    public void setMaximumPassenger (int MaximumPassenger) { //setter
        this.MaximumPassenger = MaximumPassenger;
    }

    public int getMaximumPassenger () { //getter
        return MaximumPassenger;
    }

    @Override
     public void displayDetails() {
        System.out.println("The Name of the Ship is "+super.shipName);
        System.out.println("The Year of the Ship is "+super.year);
        System.out.println("Maximum Passenger for the Ship is "+MaximumPassenger);


    }


}
```

```java
package labtask3;

public class CargoShip extends Ship {
    private int CargoCapacity;

    public CargoShip () {

        super();
        shipName = null;
        year = null;
        CargoCapacity = 0;
    }


    public void setCargoCapacity (int CargoCapacity) {
        this.CargoCapacity = CargoCapacity;
    }


    public int getMaximumPassenger () {
        return CargoCapacity;
    }


    @Override
     public void displayDetails() {
        System.out.println("The Name of the Ship is "+super.shipName);
        System.out.println("The Year of the Ship is "+super.year);
        System.out.println("The Cargo Capacity is "+CargoCapacity);
    }

}
```