

```

PS C:\Users\saket\Git\CSWork\JAVA\CBT> java CBT116BakshiSaket
ArrayList has size(): 0
ArrayList has size(): 5
Current contents: [Ant-Man, Hulk, Iron Man, Thor, Wasp]
size() is 5
|   0   |   1   |   2   |   3   |   4   |
| "Ant-Man" | "Hulk" | "Iron Man" | "Thor" | "Wasp" |

size() is 6
|   0   |   1   |   2   |   3   |   4   |   5   |
| "Ant-Man" | "Hulk" | "Iron Man" | "Jarvis" | "Thor" | "Wasp" |

Hulk is located in slot 1
size() is 5
|   0   |   1   |   2   |   3   |   4   |
| "Ant-Man" | "Iron Man" | "Jarvis" | "Thor" | "Wasp" |

size() is 6
|   0   |   1   |   2   |   3   |   4   |   5   |
| "Ant-Man" | "Captain America" | "Iron Man" | "Jarvis" | "Thor" | "Wasp" |

size() is 6
|   0   |   1   |   2   |   3   |   4   |   5   |
| "Ant-Man" | "Cap" | "Iron Man" | "Jarvis" | "Thor" | "Wasp" |

size() is 2
|   0   |   1   |
| "Cap" | "Jarvis" |

size() is 5
|   0   |   1   |   2   |   3   |   4   |
| "Cap" | "Jarvis" | "Hawkeye" | "Quicksilver" | "Scarlet Witch" |

size() is 5
|   0   |   1   |   2   |   3   |   4   |
| "Cap" | "Jarvis" | "Hawkeye" | "Quicksilver" | "Scarlet Witch" |

Current contents: [Cap, Jarvis, Hawkeye, Quicksilver, Scarlet Witch]
PS C:\Users\saket\Git\CSWork\JAVA\CBT>

```

```
import java.util.ArrayList;
```

```
public class CBT116BakshiSaket
```

```
{
```

```
    public static void main(String[] args) {
```

```
        ArrayList<String> arr = new ArrayList<String>();
```

```
        System.out.println("ArrayList has size(): " + arr.size());
```

```
        arr.add("Ant-Man");
```

```
        arr.add("Hulk");
```

```
        arr.add("Iron Man");
```

```
        arr.add("Thor");
```

```
        arr.add("Wasp");
```

```

        System.out.println("ArrayList has size(): " + arr.size());
        System.out.println("Current contents: " + arr);
        showList(arr);

        arr.add(3, "Jarvis");
        showList(arr);

        int i = arr.indexOf("Hulk");
        System.out.println(arr.get(1) + " is located in slot " + 1);
        arr.remove(1);
        showList(arr);

        arr.add(1, "Captain America");
        showList(arr);

        arr.set(1, "Cap");
        showList(arr);

        arr.remove(5);
        arr.remove(4);
        arr.remove(2);
        arr.remove(0);
        showList(arr);

        arr.add("Hawkeye");
        arr.add("Quicksilver");
        arr.add("Scarlet Witch");
        showList(arr);

        i = arr.indexOf("Hawkeye");
        String removed = arr.remove(1);
        arr.add(i-1, removed);
        showList(arr);

        System.out.println("Current contents: " + arr);
    }

    public static void showList(ArrayList<String> a)
    {
        System.out.println("size() is " + a.size());
        for(int i = 0; i < a.size(); i++)
        {

```

```

        int len = a.get(i).length() + 4;
        System.out.print("|" + centerPad(""+i, len));
    }
    System.out.println("|");
    for(String s:a)
        System.out.print("| \'" + s + "\' ");
    System.out.println("|\\n");
}

public static String centerPad(String s, int width)
{
    int totalSpaces = width - s.length();
    int leftSide = totalSpaces / 2;
    int rightSide = totalSpaces - leftSide;
    String out = "";
    for(int i = 0; i < leftSide; i++)
        out += " ";
    out += s;
    for(int i = 0; i < rightSide; i++)
        out += " ";
    return out;
}
}

```