Software Engineering Lab 2 (SE325)

Task2: **Generics & Collections**

OBJICTIVES:

The students should learn how to:

- Write a generic class and compare it with the Collections already provided by the C# name spaces.
- Create Lists, queues and stacks.

PART 1 Develop a C# windows application to do the following:

1. **Keep records and perform statistical analysis for an array of job applicants. The information of each applicant contains :**

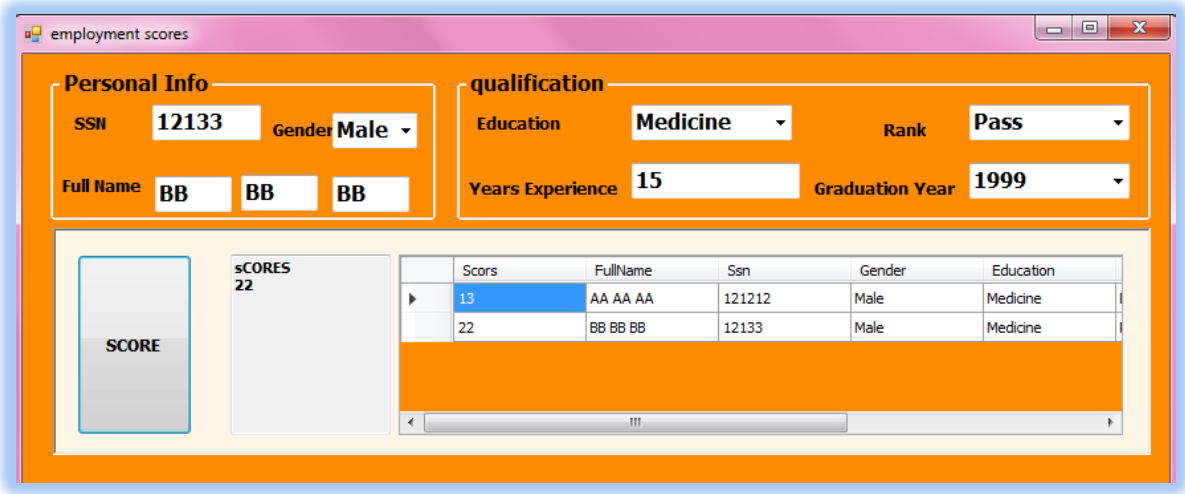
	Data Member	Type	Protection Level	Note
1	SSN	string	private	You have to add accssessors: [SET,GET]
2	FullName	string	private	You have to add accssessors: [SET,GET]
3	Gender	[Male,Female]	private	You have to add accssessors: [SET,GET]
4	Education	[Medicine,Nursing,Dentistry]	private	You have to add accssessors: [SET,GET]
5	Rank	[Pass,Good,VeryGood,Excellent]	private	You have to add accssessors: [SET,GET]
6	Graduation Year	int	private	You have to add accssessors: [SET,GET]
7	Year of Experiance	int	private	You have to add accssessors: [SET,GET]
8	Scores	int	Public	Read Only Property:
	Each applicant earns a score based on his/her qualification as the follwing : • **if the applicant has a pass rank he/she will get 4 Points.** • **if the applicant has a Good rank he/she will get 6 Points.** • **if the applicant has a Very Good rank he/she will get 8 Points.** • **if the applicant has an Excellent rank he/she will get 12 Points.** • **For each 1 year Experience he/she get 1 Point with maximum 12 points.** • **For each 1 year after graduation date he/she get 1 point with maximum 6 Points.**			

Example # 1:
Suppose you have an applicant with The Follwing quilifications:
Rank : Very Good.:
Experience Years :3
Graduation Year: 2011.
Score: (Points of rank)+(Point Of experiance)+(Point of Graduation Year)=8+3+6=17 Points.

Example # 2:
Suppose you have an applicant with The Follwing quilifications:
Rank : Pass.
Experience Years :15.
Graduation Year: 1999.
Score: (Points of rank)+(Point Of experiance)+(Point of Graduation Year)=4+12+6=22 Points.

- **Employment priority Depends on applicants scores .**
- **The applicant with heighst scores has the heighst priorty for Employment .**

The application will prompt the user to insert the Educational & Personal Information for each applicant.

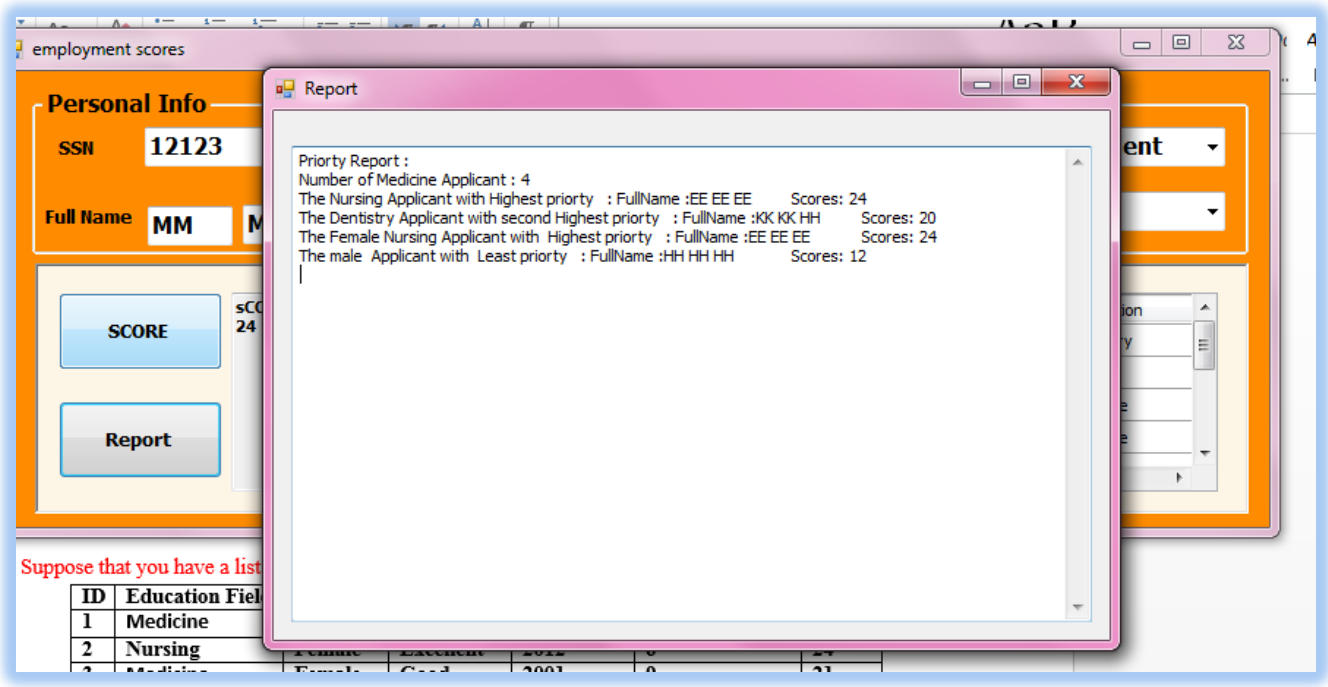


PART 2: Data Classification:

1) All application have to be added to a List of Applications.
2) Sort all application based on Scores in ascending order (You Have to re-implement CompareTo()).
3) You have to add:
   - Medicine applicants in to a Queue of applicants.
   - Nursing applicants in to a stack of applicants.
   - Dentistry applicants in to a Queue of applicants.
4) Return The Number of Medicine Application.
5) Return the Nursing Applicant that have the highest priority.
6) Return the Dentistry Applicant that have the second highest priority.
7) Return the female Nursing highest priority.
8) Return the Male Least priority.

- Suppose that you have a list of the following applications:

ID	Education Field	Gender	Rank	Grad year	Exp Year	Scores
1	Medicine	Male	Excellent	2014	2	19
2	Nursing	Female	Excellent	2012	6	24
3	Medicine	Female	Good	2001	9	21
4	Nursing	Male	Excellent	2016	0	15
5	Medicine	Female	Excellent	2014	4	21
6	Medicine	Female	Excellent	2014	1	18
7	Dentistry	Male	Good	2015	2	12
8	Nursing	Female	Very Good	2000	6	20
9	Dentistry	Male	Excellent	2010	2	20
10	Dentistry	Female	Excellent	2012	6	24



Best Wishes ☺ ☺ Eng. Manar Jaradat