



QF01/2611-4.0E

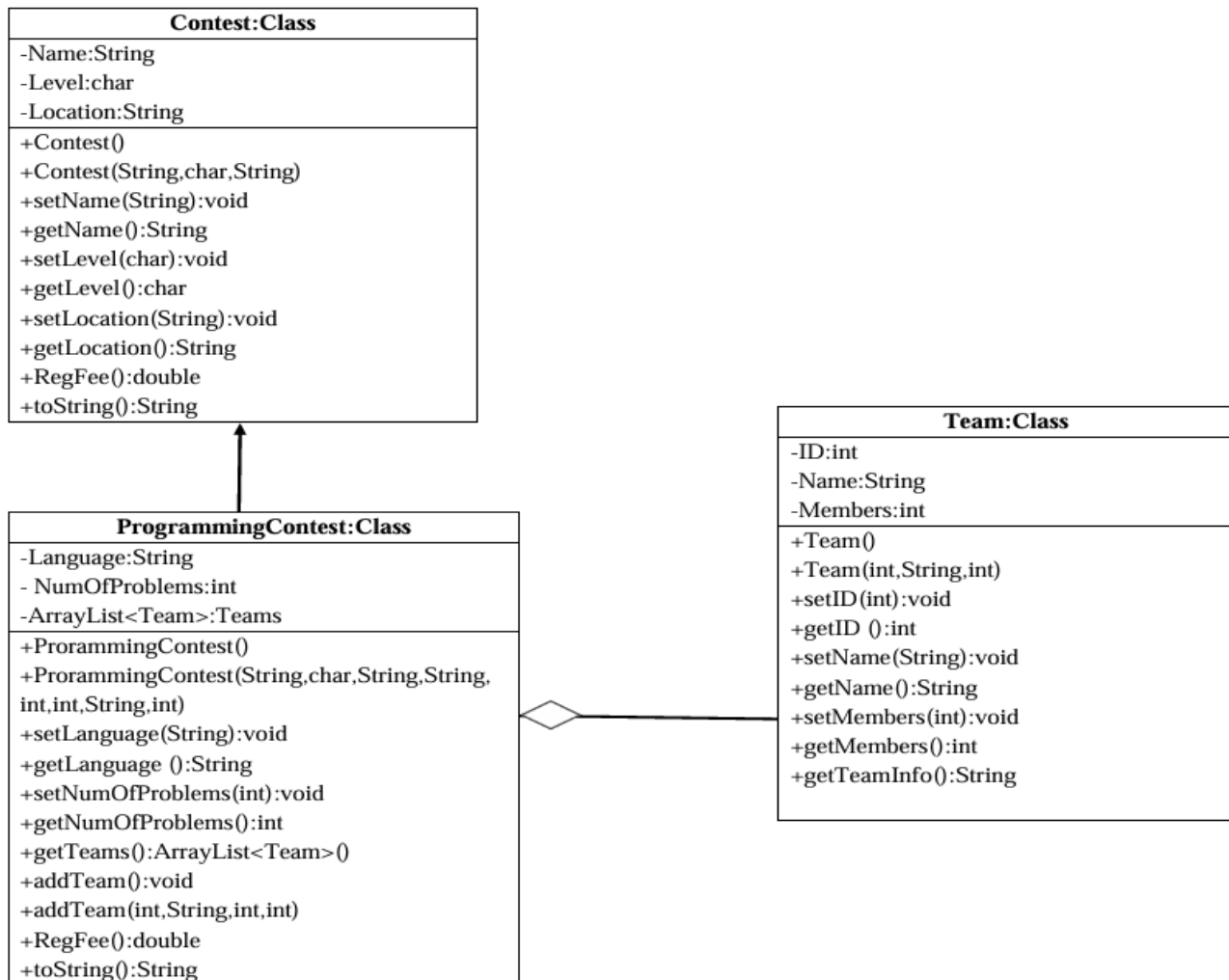
Exam Question Form - Teaching & Exams Follow-up procedures/ Faculty of Science and Information Technology

Course Name	Object Oriented Programming	Course Code	0112221
Semester	First	Academic Year	2024/2025
Exam Date	11/1/2025	Quiz/ Midterm/ Final	Final Exam
Exam Time	9:00 am-11:00 am	Exam Place	Labs
Maximum score	40	Exam duration	2 hours

To be filled by the Student

Student Name		University ID	
Instructor Name		Section Number	

Dear student, please answer the following questions
Suppose that you have the following UML Diagram:



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First Question:		Grade	10																		
(ILO-2)	Create the Contest Class as shown in right:	Contest:Class																			
	<ul style="list-style-type: none">Create two constructors, the default constructor will set the class data as the follows: Name to "General", Level to 'A' and Location to "Not defines", the parametrized constructor will set the class data according to the user entry. (2 Marks)	-Name:String -Level:char -Location:String																			
	(ILO-2)	<ul style="list-style-type: none">Add all needed setters and getters.	+Contest() +Contest(String,char,String) +setName(String):void +getName():String +setLevel(char):void +getLevel():char +setLocation(String):void +getLocation():String +RegFee():double +toString():String																		
	(ILO-2)	<ul style="list-style-type: none">Make sure that the Level is (A, B or C) only and ignore entry case.The setName method must store the name in uppercase. (3 Marks)																			
	(ILO-2)	<ul style="list-style-type: none">RegFee() method will calculate the fees as follows (use switch) : <table><tr><th>Level</th><th>Location</th><th>Fee</th></tr><tr><td rowspan="2">A</td><td>amman</td><td>40</td></tr><tr><td>irbid</td><td>20</td></tr><tr><td rowspan="2">B</td><td>amman</td><td>50</td></tr><tr><td>irbid</td><td>25</td></tr><tr><td rowspan="2">C</td><td>amman</td><td>70</td></tr><tr><td>irbid</td><td>35</td></tr></table> <p>(3 Marks)</p>	Level	Location	Fee	A	amman	40	irbid	20	B	amman	50	irbid	25	C	amman	70	irbid	35	
Level	Location	Fee																			
A	amman	40																			
	irbid	20																			
B	amman	50																			
	irbid	25																			
C	amman	70																			
	irbid	35																			
(ILO-2)	<ul style="list-style-type: none">toString method will return all the Contest Data. (2 Marks)																				

Second Question:		Grade	12
(ILO-4)	Create the ProgrammingContest Class as shown in right:	ProgrammingContest:Class -Language:String - NumOfProblems:int -ArrayList<Team>:Teams +ProrammingContest() +ProrammingContest(String,int,int,String,int) +setLanguage(String):void +getLanguage ():String +setNumOfProblems(int):void +getNumOfProblems():int +getTeams(): ArrayList<Team>() +addTeam():void +addTeam(int,String, int) +RegFee():double +toString():String	
	<ul style="list-style-type: none"> Note that this class inherits the contest class. (1 Marks) 		
	<ul style="list-style-type: none"> The Teams attribute is of Team class type (1 Marks) 		
	<ul style="list-style-type: none"> Create two constructors, the default constructor will set the language to "java" and NumOfProblems to 3 and keeps the array list Teams empty. The parametrized constructor will set the class data as user entry and adds a team to the array list Teams. (2 Marks) 		
(ILO-5)	Add all setter and getter methods, and make sure that: - The language must be (java, python or C++).		



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	- NumberOfProblems must be greater than or equal to 3. (2 Marks)	
(ILO-5)	<ul style="list-style-type: none"> The addTeam() method asks the user enter all team's data using scanner then adds a new team to the Teams list. (1 Marks) 	
(ILO-5)	<ul style="list-style-type: none"> The addTeam(int,String, int) method adds a new team to the Teams list based on user entry. (1 Marks) 	
(ILO-5)	<ul style="list-style-type: none"> The getTeams method will return an arraylist contains all the teams. (1 Marks) 	
(ILO-5)	<ul style="list-style-type: none"> The RegFee method overrides the RegFee() method in the super class as follows: The method asks the user if the team consists of students or not. If yes, the method will calculate the fees as in the Contest class -10. Otherwise, the fees will be 100 (2 Mark) toString method will return all the ProgrammingContest Data (1 Mark) 	

Third Question:		Grade	8
(ILO-6)	<p>Create the Team Class as shown in right:</p> <ul style="list-style-type: none"> Create two constructors, the default constructor will set ID to 11, and the Name to "Not defined" and team members to 3, the parametrized constructor will set the class data according to the user entry. (2 Marks) 	<div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">Team:Class</p> <pre> -ID:int -Name:String -Members:int +Team() +Team(int,String,int) +setID(int):void +getID():int +setName(String):void +getName():String +setMembers(int):void +getMembers():int +getTeamInfo():String </pre> </div>	
(ILO-6)	<ul style="list-style-type: none"> Add setter and getter methods. <ul style="list-style-type: none"> The setID method will makes sure that the ID should not be zero and must start with 1. The setTeamName method makes sure that the name is not null, consists of 10 letters at max and starts with '@'. The setTeamMembers makes sure that team members must be at least 3 and maximum 5 members. (4 Marks) 		
(ILO-6)	<ul style="list-style-type: none"> The getTeamInfo method returns the team's data as follows: <pre> ----- TeamID ***** Team Name ***** Team Members ----- </pre> <p style="text-align: right;">(2 Marks)</p>		



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Fourth Question:		Grade	10
	In the main class do the following:		
(ILO-7)	<ul style="list-style-type: none"> Create a ProgrammingContest object. (2 Marks) 		
(ILO-7)	<ul style="list-style-type: none"> Create a method to fill four Teams data into the Programming contest. Note that the method should ask the user to enter the data. (4 Marks) 		
(ILO-7)	<ul style="list-style-type: none"> Create a method that asks the user to enter the number of members in a team, then searches the Teams arraylist and prints all teams (using getTeamInfo method) with members less than or equal to 4. (4 Marks) 		

Wish you all the best