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|  | **Assignment No. 2 Semester: Fall 2024**  **CS201P – Introduction to Programming(Practical)** | | **Total Marks: 20**  **Due Date: 31st Dec, 2024** |
| **Instructions**  **Please read the following instructions carefully before submitting the assignment:**  **It should be clear that your assignment will not get any credit if:**   * **Assignment is submitted after the due date.** * **Submitted assignment does not open or file is corrupt.** * **Assignment is copied (From the internet/students).** * **Assignment is submitted in any file format other than .cpp.**   **Recommended tool to develop Assignment**   * **Dev C++**   **Objectives:**  To enable students to understand and practice the concepts of:   * Functions * Function calling * Classes and objects   **Assignment Submission Instructions**  You must submit only a **.cpp** file on the assignments interface of CS201P from your LMS account. ***Assignments submitted in* any other format(image, pdf, doc, docx, etc) *will be scaled with* zero marks*.*** *So, check your solution file format before submission.*  For any query related to the assignment, please contact [CS201P@vu.edu.pk](file:///D:\Chrome%20Downloads\Downloads\CS201P@vu.edu.pk). | | | |
| **Assignment** | |  | |

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| **Problem Statement**:  Imagine a recruitment process for candidates applying to join the Air force. Suppose there are three candidates named “**Babar**”, “**Rizwan**” and “**Shan**” whose eligibility is checked for recruitment on the basis of their key attributes **Height**, **weight** and **age**.  **Eligibility criteria** for the selection is as below:   1. Candidates must be within the age range of **18 to 22 years** (inclusive). If a candidate is younger than 18 or older than 22, they are not eligible for recruitment. 2. Candidates need to have a body weight in the range of 52 – 60 kg. Any candidate who weighs less than 52 kg or more than 60 kg is deemed ineligible. 3. The minimum height requirement for selection is **5.6 feet**. Candidates who are shorter than 5.6 feet do not meet the criteria for eligibility.   **Write a class in C++** that reads the attributes for each of the candidate and check their eligibility for recruitment on the basis of above criteria.  Display the **result of their attributes**, their **eligibility status** and **reason if non-eligible**.  **Step by step procedure:**   1. Your business logic should be included in a class named “**Recruitment**” in C++. 2. You should include a **default constructor** in your class and include a logic inside this constructor to display your **Name and VUID**. Use of other student ID will be considered a cheating case and marks will be deducted. 3. The attributes of the candidates must be **declared inside the class as instance variables**. 4. Include a parameterized constructor inside the class to assign the values to the attributes (instance variables of class) of candidates. **No setxxx() function is allowed** in a class to assign the values to instance variables. 5. Include an **instance member function** to check and set the eligibility of a candidate on the basis of eligibility criteria defined above. 6. Include an **instance member function** to display the **whole status of a candidate** along with **eligibility status** and **reason if non-eligible**. 7. Don’t call a function inside the body of another function inside a class. Marks will be deducted if this guideline is violated. 8. Include a **utility function** inside a class to display “**how many times the parameterized constructor is called”**? You can use a static variable, **counter** to count the number of parameterized constructor calling. 9. Your main() function only include the **logic of creating instances or objects of class and calling the functions** accordingly to deduce the outcome. **The values of attributes and name for each candidate inside the main() should be hard coded.**   **Note**: Remember that if you have not used your name and student id in the program your marks will be deducted.  Sample screenshot on CMD:  Sample 1:    Sample 2:    **Syllabus:**  The syllabus for this assignment includes all topics covered from Lab 3 to Lab 10. |
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| Best of luck! |