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| Subject code & Name | : | **CE144 – Object oriented programming with C++** | Practical | : | **4** | Academic Year | : | **2022-2023** |
| ID | : | **22CS044** | Name | : | **Shruti Panchal** | | | |

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| ***Practical Set - 4*** |
| **Aim 4.1:** Define three functions named divide (). First function takes numerator and denominator as an input argument and checks it is divisible or not, second function takes one integer numbers as input argument and checks whether the number is prime or not and Third function takes 3 float number as argument and finds out average of the numbers.  Note: Use concept of Function Overloading / static binding.  **Expected Output:**  Fill the following table to showcase your outcome, also attach the  **screenshot of output.**   |  |  |  | | --- | --- | --- | | **Display** | **Input** | **Output** | | Input two numbers to check if it is divisible or not | Number 1 = 2  Number 2 = 1 | 2 is not divisible by 4 | | Input a number to check if it is prime or not | Number = 4 | 4 is not prime | | Enter three float numbers to get average of them | FNumber 1 = 2.5  Fnumber 2 = 8.5  FNumber 3 = 63.54 | Average = 24.8467 | |
| ***Code*** |
|  |
| ***Output*** |
|  |
| ***Question-Answers*** |
| **1. State the benefits of using function overloading.**  **Ans.**  It saves memory usage and enables the reusability of code.  It makes the program execute faster.  We can develop functions of different nature but with the same name. |
| **Aim 4.2:** Write a function called tonLarge () that takes two integer arguments call by reference and then sets the larger of the two numbers to 100 using Return by reference. Write a main () program to exercise this function.  **Expected Output:** Fill the following table to showcase your outcome, also attach the screenshot of output.   |  |  |  |  | | --- | --- | --- | --- | | **Display** | **Inputs** | **Larger Number** | **Output** | | **Enter two numbers** | **Number 1 = 50**  **Number 2 = 24** | **Number 1** | **Number 1 = 100**  **Number 2 = 24** | |
| ***Code*** |
|  |
| ***Output*** |
|  |
| ***Question-Answers*** |
| 1. **Explain the difference of call by reference and return by reference, each in two points.**  |  |  | | --- | --- | | **Call by reference** | **Return by reference** | | Call by value method original value is not modified | Call by reference method, the original value is modified | | a copy of the variable is passed | a variable itself is passed. | | actual and formal arguments will be created in different memory locations | actual and formal arguments will be created in the same memory location |   **Ans.** |
| **Aim 4.3:** Write a inline function called power () that takes two arguments: a double value for Base and an integer for Power, and returns the result as double value. Use default argument as 2 for Base, so that if this argument is omitted, the number will be squared. Write a main () function that gets values from the user to test this function.  **Expected Output:** Fill the following table to showcase your outcome, also attach the screenshot of output.   |  |  |  |  | | --- | --- | --- | --- | | **Sr. No.** | **Inputs** | | **Output** | | **Enter Base** | **Enter Power** | **Result** | | **1.** | **2** | **4** | **16** | |
| ***Code*** |
|  |
| ***Output*** |
|  |
| ***Question-Answers*** |
| 1. **Explain the situations where inline function cannot work?**   **Ans.**  Inline function cannot work for functions that return values and having a loop or switch or goto. |
| **Faculty Signature: Grade:** |