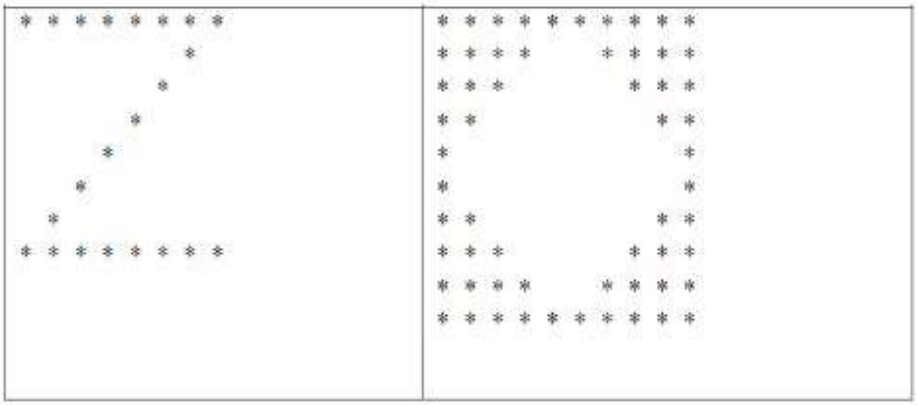
RYAN INTERNATIONAL SCHOOL, GHAZIABAD
LAB MANUAL PROGRAMS
2024-2025
COMPUTER SCIENCE (083)

Programming Language: Python
CLASS: XII

Topic: Review of Python Basics

Q1. WAP to print the following ASCII art using ASCII statements.

Q2. WAP to print the following pattern.



Q3. Write a program that inputs a word (as a string, of course) and
(i) Prints back the word without the vowels.
For example,
If input word is "nectarine" then output should be 'nctrn'.
If input word is "blueberry" then output should be 'blbrry'.
(ii) Surround the vowels with parentheses instead of not showing them.

For example,
If input word is "nectarine" then output should be 'n(e)ct(a)r(i)n(e)'.
If input word is "blueberry" then output should be 'bl(u)(e)b(e)rry'.

Q4. Write a program that accepts a list and removes the value at index 0 from the list.
The program must actually modify the list passed in, and not just create a second list with the first item removed. You may assume the list you are given, will have at least one element.
For example:
If input list is a = [1, 2, 3, 4], the output should be [2, 3, 4].

Topic: Functions

Q5. Write a void function that receives a 4 digit number and calculates the sum of squares of first two digits number and last two digits number,
e.g., if 1233 is passed as an argument then function should calculate 122 + 332

Q6. Write a random number generator that generates random numbers between 1 and 6. (simulates a dice).

Topic: Data File Handling

Q7. Read text file by line by line and display each word separated by a #.

Q8. Read a text file and display the number of vowels/ consonants/ uppercase/ lowercase characters in the file.

Q9. Remove all the lines that contain the character ‘a’ in a file and write it to another file.

Q10. Create a binary file with roll number, name and marks. Search for a given roll number and display the name, if not found display appropriate message.

Q11. Create a binary file with roll number, name and marks. Input a roll number and update the marks.

Q12. Create a CSV file by entering user-id and password, read and search the password for given userid.

Q13. Write a menu driven program implementing user-defined functions on a CSV file “students” to read and display the name and percentage of the records of students.

Input admission number, name and percentage to the CSV file.

Q14. Develop a Python program which stores employee number, name and salary of employees in “employee.csv”, calculates and display the total salary remitted to the employees and to display the number of employees who are drawing a salary of more than Rs. 15,000/- per month.

Topic: Data Structures - Stack

Q15. Each node of a STACK contains the following information:
(i) Pin code of a City
(ii) Name of City

Write a program to implement the following operations in the above stack:
(a) PUSH() to push a node into the stack.
(b) POP() to remove a node from the stack.

Q16.
Topic: SQL
Q1. Write SQL query to create a database of your name.
Q2. Write a query to change the database to your name.
Q3. Create the following table and insert the below given records in the table.

TABLE: STUDENT

No	Name	Stipend	Stream	Avgmark	Grade	Class
1	Karan	400.00	Medical	78.5	B	12B
2	Divakar	450.00	Commerce	89.2	A	11C
3	Divya	300.00	Commerce	68.6	C	12C
4	Arun	350.00	Humanities	73.1	B	12C
5	Sabina	500.00	Nonmedical	90.6	A	11A
6	John	400.00	Medical	75.4	B	12B
7	Robert	250.00	Humanities	64.4	C	11A
8	Rubina	450.00	Nonmedical	88.5	A	12A
9	Vikas	500.00	Nonmedical	92.0	A	12A
10	Mohan	300.00	Commerce	67.5	C	12C

Q4. Select all the Nonmedical stream students from STUDENT.
Q5. List the names of those students who are in class 12 sorted by stipend.
Q6. To display name & average of all the students having avgmark <70.0.
Q7. To display list of all the students with Stipend >350.00 in ascending order of Name.
Q8. To display the Stream & the number of students in each Stream in the table Student.
Q9. List all students sorted by avgmark in descending order.
Q10. To count the number of students with grade "A".
Q11. Update the students stipend with Rs. 100.00 whose Grade is 'A'.
Q12. To display the count of students and the total stipend given stream wise.
Q13. Create the following table and insert the below given records in the table.

TABLE: DEPARTMENT

Stream	Dept_no	HOD
Medical	1	Ashish Aggarwal
Commerce	2	Deepti Saxena
Humanities	3	Meenu Rawat
Nonmedical	4	Aman Yadav

Q14. To display the name of students, department number, stream and the name of HOD from the above 2 tables.
Q15. Display name, class and stream whose department number is 3 and 4.
Q16. Display the minimum, maximum and average stipend stream wise.
Q17. Delete the record of Humanities stream from both the tables.
Q18. Modify the column size of Name to 30 of STUDENT table.
Q19. Drop the Primary key of DEPARTMENT table and then add the Primary key again.
Q20. Drop the column HOD from DEPARTMENT table.
Q21. Delete the entire DEPARTMENT table.

Topic: Python-MySQL Connectivity

Q17. Create a database TESTDB.
• Create a table EMPLOYEE with Fields FIRST_NAME, LAST_NAME, AGE, GENDER and INCOME in TESTDB.

• Insert 5 records through Python. Records to be inserted at the run-time.

Q18. Search for a particular record. Input record to be taken at the run-time.

• Display all the records that are available in the table.

Q19. Delete a particular record by taking the details of the record at the run-time.

Q20. Edit a particular record by taking the details of the record at the run-time.

NOTE: Display appropriate message if the record does not exist