**Fresher’s Training Program (FSE NXT)**

**Introduction:**

This module contains curriculum details conducted for fresher’s trainings of FSE NXT.

**Objective:**

The objective of this training program is to train freshers in different technologies so that they can be directly put into the project and can perform. This program does not only have core topics, instead we have included all frameworks that is needed for a particular technology to work in a project, hands-on for the same and assessment (IKM and other industry standard assessment), followed by a mock project (to give exposure of working on a real application).

Focus is mainly to learn from e-learning content with the help of mentor.

**Ways of organizing the fresher’s batch to train in different technologies:**

The way we divided our freshers into different batches was through different kind of assessment which includes aptitude test, communication test and two rounds of coding test.

So, after assessing their programming capabilities, we made a curriculum and started our training program. All programs have different duration but overall, every program will finish in approximately 3 months.

**Certificate and Project details:**

We are using combination of IKM and Microsoft certification.

**IKM Assessment curriculum** picked for below curriculum:

|  |  |
| --- | --- |
| Technology Name | IKM Curriculum |
| HTML | HTML5\_PROGRAMMING.pdf |
| React | MODE 2 |
| Selenium | SELENIUM\_WITH\_JAVA.pdf |
| Java | ERS-JAVA-SR-DEV-2018.PDF |
| .net | EXA-DOTNET-WITHOUT-ASP-JR.pdf |
| SSIS | TSS\_SQLSERVER\_SSIS.pdf |

Following are the **Microsoft certification** done by the team:

1. **DP 100**
2. **DP 500**
3. **DP 203**

**Mock Project Details**

This application is about filling own details on company portal before joining the company. So user need to login into the application, doing authentication and then filling all details required.

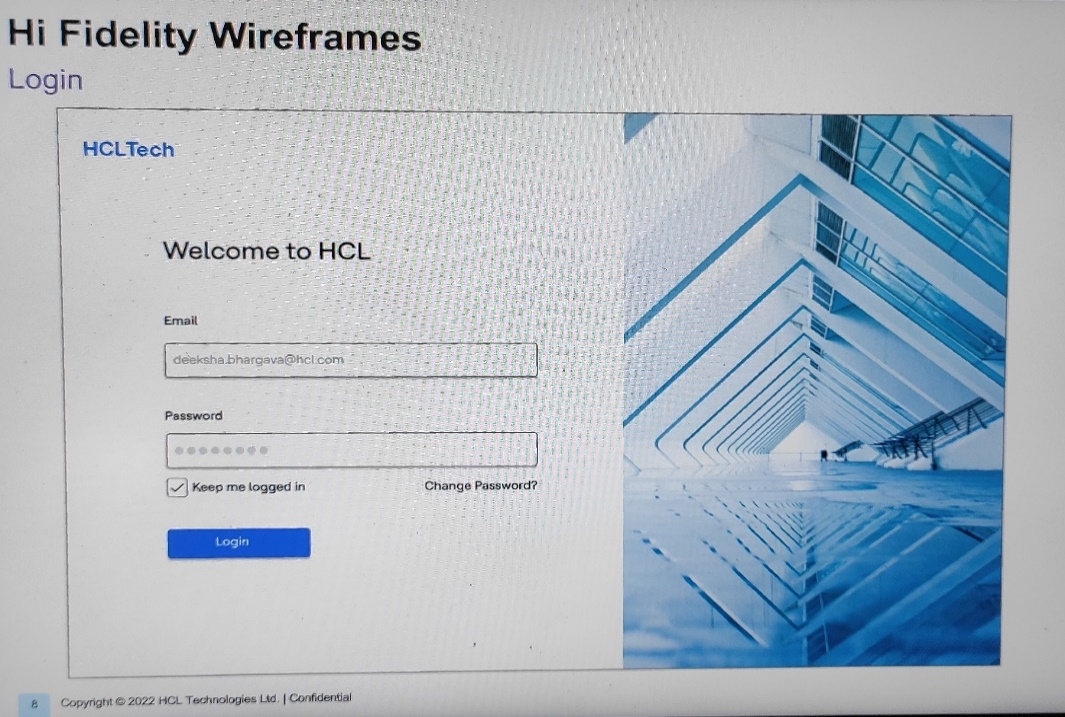
**Team involved: UI/.net/Java**

**How we programmed this:**

UI team working on UI part, Java/.net team working on backend part.

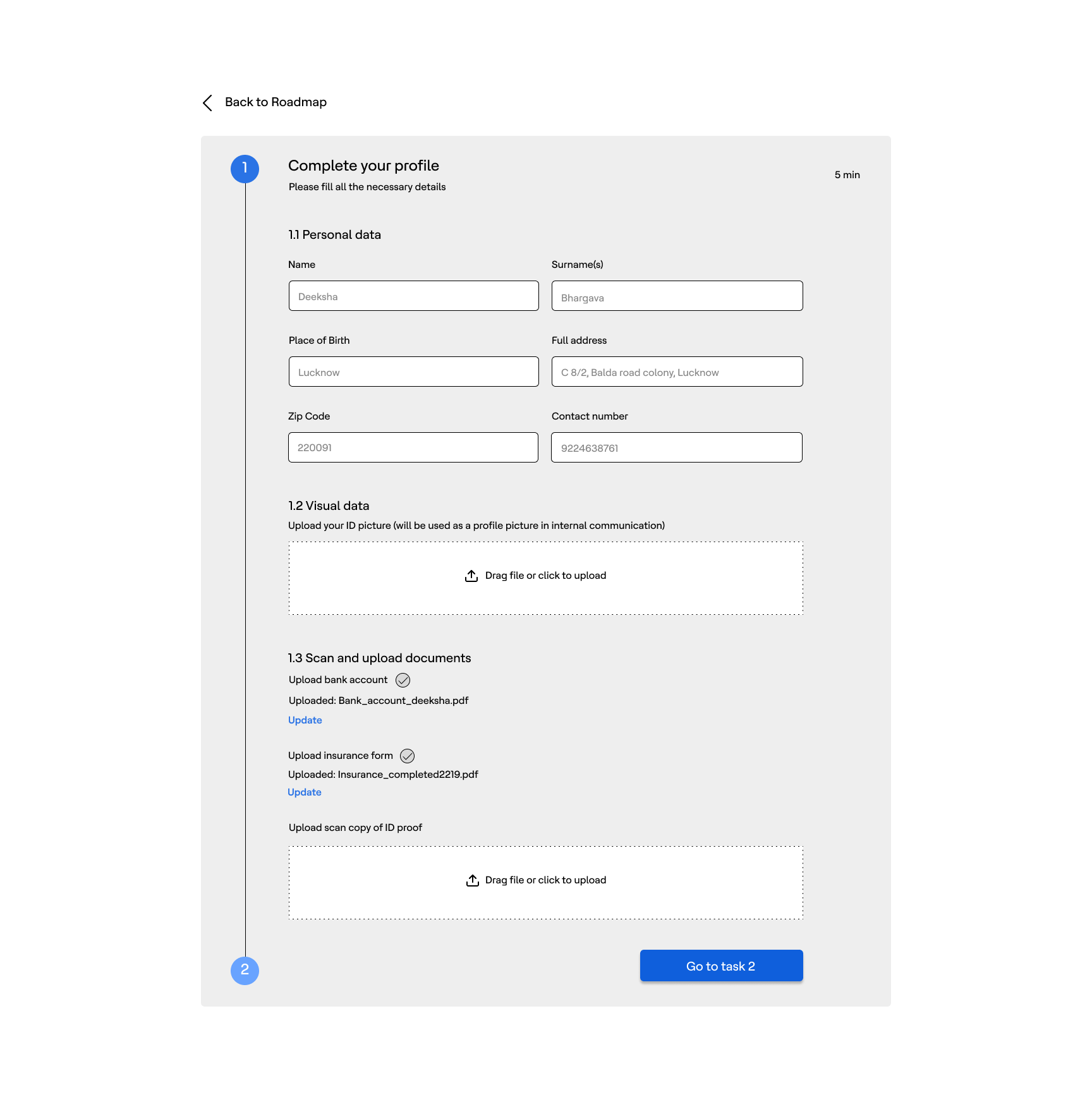
As we are not actually exposing our url (as it’s a mock project), team deployed code locally so that UI and backend code can be integrated and we have an actual working application.

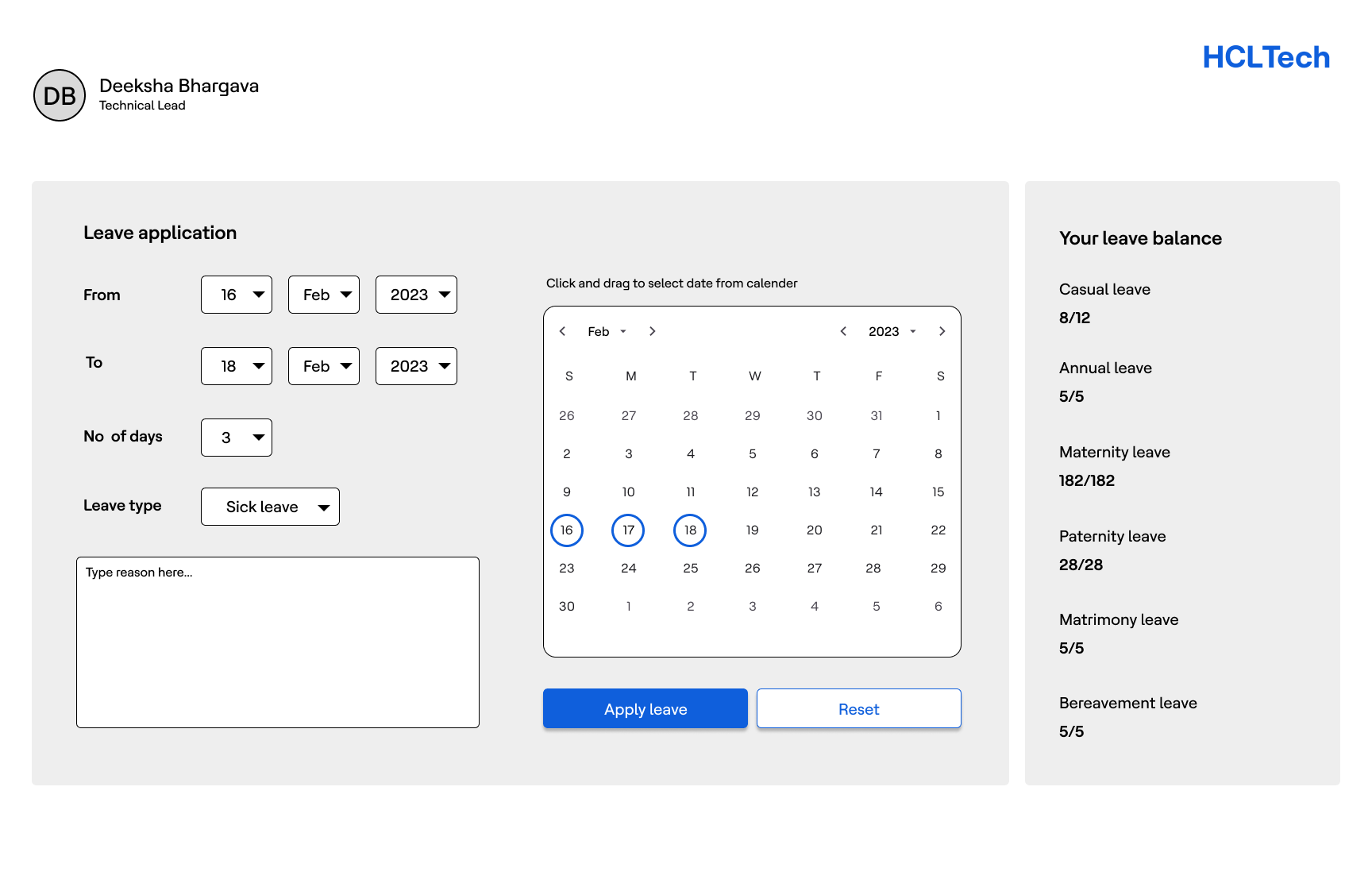
Graphical user interface, application

Description automatically generatedBelow are the wireframes that was being developed:

Graphical user interface, application

Description automatically generated





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**Java Curriculum:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Topic** | **Sub-Topic** | **Learning Material** | **Coding Exercises** |
| **Core Java** | Comparison operators, if else condition statements, Ternary operator, logical operators | Logical Operators  Tutorial - <https://www.geeksforgeeks.org/java-logical-operators-with-examples/>  IF ELSE Conditional Statements:  • Video: - <https://www.youtube.com/watch?v=KTvZkBfFR8U&list=PLfVsf4Bjg79Dgw4n_nR3C8Ozqek7DaZFQ&index=16>  Nested IF Else Statements  • Tutorial : https://www.youtube.com/watch?v=cV3Qo1TJ6ns&list=PLfVsf4Bjg79Dgw4n\_nR3C8Ozqek7DaZFQ&index=17 | Appendix- 1 (Q-1,2,3,4,5,6,7,8) |
|  | Java expressions, java loops | Expressions: [Lec 14:Java Expressions,Statements and Blocks.[ Java For Beginner] - YouTube](https://www.youtube.com/watch?v=g4LnOHqVHbc)  Loops: <https://www.youtube.com/watch?v=AsRphSuU2OI&list=PLfVsf4Bjg79Dgw4n_nR3C8Ozqek7DaZFQ&index=20>  <https://www.youtube.com/watch?v=MHtLSle7YYg&list=PLfVsf4Bjg79Dgw4n_nR3C8Ozqek7DaZFQ&index=22> | Appendix-1 (Q-> 9 - to - 30) |
|  | Passing arguments to a method , java methods with return types, Arrays | Java Methods:  <https://www.youtube.com/watch?v=XoRYJ4-iGkk&list=PLfVsf4Bjg79Dgw4n_nR3C8Ozqek7DaZFQ&index=34>  <https://www.youtube.com/watch?v=o5dcpcuyuIA>  Pass Arguments to a method:  <https://www.youtube.com/watch?v=1x1MqKiDM2I&list=PLfVsf4Bjg79Dgw4n_nR3C8Ozqek7DaZFQ&index=35>  Arrays  <https://www.youtube.com/watch?v=psQQLAosB84&list=PLfVsf4Bjg79Dgw4n_nR3C8Ozqek7DaZFQ&index=26> | Appendix-1(Q-31 to 47) |
|  | Access modifiers in java,oops concept, Abstraction, inheritance, ,Interface, Collections, Map interface in java, Multithreading | Access Modifiers:  <https://www.youtube.com/watch?v=H0OetoieSDQ>  Classes,Objects and Methods:  <https://www.youtube.com/watch?v=0wGq6yZNn60&list=PLfVsf4Bjg79Dgw4n_nR3C8Ozqek7DaZFQ&index=41>  Collections:  <https://www.youtube.com/watch?v=Ma7u6KEKzPE> | Appendix-1(Q-48 to 62) |
| **Spring** | 1.)Setup spring mvc project inside eclipse  2.)How to setup spring boot inside eclipse  3.)Download and Install MySql  4.)Overview of Maven  5.)Spring Core basics 6.)Spring Orm Basics | Overview of Maven:  [Introduction to Maven | Theory - YouTube](https://www.youtube.com/watch?v=dqJanLvjDqc)  OverView of the Spring  Tutorial - [Spring framework tutorial for beginners with examples in eclipse | Why spring inversion of control ? - YouTube](https://www.youtube.com/watch?v=r2Q0Jzl2qMQ&list=PL3NrzZBjk6m-nYX072dSaGfyCJ59Q5TEi) | Appendix -2(Q-1) |
|  | Spring mvc, hibernate, springboot, jpa basics | Tutorial - Basics of (spring, spring orm, spring mvc)  [Spring MVC Tutorial with Spring Boot | Full Course ✅ - YouTube](https://www.youtube.com/watch?v=Ku3gsv7_bCc)  Hibernate:  [Hibernate Tutorial | Full Course - YouTube](https://www.youtube.com/watch?v=JR7-EdxDSf0)  Spring Boot Study Material:  Tutorial - [Master Spring boot profiles - Properties Vs YML | spring boot tutorial for beginners with examples - YouTube](https://www.youtube.com/watch?v=39fVQsArBTU)  Spring Boot Jpa  Tutorial - <https://www.youtube.com/watch?v=XszpXoII9Sg> |  |
|  | Exercises 2.) to 5.) Create end point to update, delete, get and create. | Working on Spring Mvc:  <https://www.youtube.com/watch?v=zCHrZdJODg4&list=PL3NrzZBjk6m-OSeL3DRMD_ISa0u-9c1l1> | Appendix-2(Q-2 to 5) |
|  | Exercise - 6.) Calling one Api to another Api. Exercise - 7.) Creating complex api | Calling one API from Another:  <https://youtu.be/jo6IEX-v3LM> | Appendix -2(Q-6 ,7) |
|  | Exercise - 8.) and 9.) Exercise | Tutorial - <https://www.youtube.com/watch?v=nzszxQbQ5WU>  Tutorial - <https://www.youtube.com/watch?v=-_WUY9gb3ro&list=PLA7e3zmT6XQW8LfzuyLuvhdy29t3znQmD&index=11> | Appendix -2(Q-8,9) |
| **Junits** | 10.) Exercise and 11.) Exercise | What is Junit - Mockito  Tutotial - <https://www.youtube.com/watch?v=7Xq4j0Q7aPE>  Junit Test – Code Coverage with Maven and Jacoco  <https://www.youtube.com/watch?v=wL2DxBJDj_8> | Appendix-2 (Q-10,11) |
| **Sonar** |  | <https://gainjavaknowledge.medium.com/spring-boot-code-analysis-with-sonarqube-4d953ca8f09e%22> |  |
| **Jar** |  | Tutorial: [What is Jar file? | How to make a Jar in Eclipse? - YouTube](https://www.youtube.com/watch?v=JeBiZVAPXFM)  Tutorial:[decompile a jar file(2019) - YouTube](https://www.youtube.com/watch?v=WvxzkkrwZyg) |  |

**Appendix 1**

**(-1-)** Take values of length and breadth of a rectangle from user and check if it is square or not.

**(-2-)** A company decided to give bonus of 5% to employee if his/her year of service is more than 5 years.

Ask user for their salary and year of service and print the net bonus amount.

**(-3-)** A school has following rules for grading system:

a. Below 25 - F

b. 25 to 45 - E

c. 45 to 50 - D

d. 50 to 60 - C

e. 60 to 80 - B

f. Above 80 - A

Ask user to enter marks and print the corresponding grade.

**(-4-)** Write a program to check whether a entered character is lowercase ( a to z ) or uppercase ( A to Z ).

**(-5-)** Write a program that asks the user for a GPA on a scale of 0.0 to 4.0.

If the user enters a number larger than 4.0 or less than 0.0, the program must output “Invalid GPA.”

If the user enters a valid number, the program should display the corresponding letter grade based on the table below.

GPA range Letter Grade

4.0 A+

3.75 to less than 4.0 A

3.5 to less than 3.75 A-

3.25 to less than 3.5 B+

3.0 to less than 3.25 B

2.75 to less than 3.0 B-

2.0 to less than 2.75 C

0 to less than 2.0 F

**(-6-)** Write a Java program to find largest among two numbers using ternary operator

**(-7-)** Find the output of the program

public class GFG {

public static void main(String[] args) {

char x = 'X';

int i = 0;

System.out.print(true ? x : 0);

System.out.print(false ? i : x);

}

}

**(-8-)** Find the output

public class Test {

public static void main(String args[]) {

boolean a = true;

boolean b = false;

System.out.println("a && b = " + (a&&b));

System.out.println("a || b = " + (a||b) );

System.out.println("!(a && b) = " + !(a && b));

}

}

**(-9-)** Concatenate Two string using plus operator.

**(-10-).** Write a Java program to compute the specified expressions and print the output.

Specified Expression : (25.5 \* 3.5 - 3.5 \* 3.5) / (40.5 - 4.5)

**(-11-).** Write a Java program that takes two numbers as input and display the product of two numbers

**(-12-).** Write a Java program that takes a number as input and prints its multiplication table upto 10.

**(-13-).** Swap two number without using third variable use + and - operator.

**(-14-).** Swap two number without using third variable use \* and / operator.

**(-15-)**. Write a program to calculate the sum of first 10 natural number using for loop, do while , while loop?

**(-16-).** Display Sum of n Natural Numbers using for loop?

**(-17-).** Write a program to find the factorial value of any number entered through the keyboard using for and while loop?

**(-18-).** Program to Check Whether a Number is Prime or Not using for loop loop and while loop?

**(-19-).** Write a program to print out all Armstrong numbers between 1 and 500?

**(-20-).** Check whether the number is palimdrome or not using for and while loop

**(-21-).** find the average age of a group of people using for loop and for Each loop?

**(-22-).** Reverse a number using while loop?

**(-23-).** Count Number of digits in a Number using while loop?

**(-24-).** Count Sum of digits in a number using while loop?

Q.Write a program to print following :

**(-25-)** \*\*\*\*\*\*\*\*\*\*

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**(-26-)** \*

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**(-27-)**

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**(-28-)**

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\*\*\*\*\*\*\*

\*\*\*\*\*\*\*\*\*

**(-29-)**

1

222

33333

4444444

555555555

**(-30-)**

1

212

32123

4321234

543212345

**(-31-)** Create a class with no parameter method and parametrized method in java and call the method?

**(-32-).** Create a method that should not return a value?

**(-33-).**Write a program that returns the sum of a method's two parameters?

**(-34-).**Use recursion to add all of the numbers up to 10.

**(-35-).**Print the average of three numbers entered by user by creating a class named 'Average' having a method to calculate and print the average.

**(-36-).** Write a Java method to find the smallest number among three numbers.

Input the first number: 5

Input the Second number: 17

Input the third number: 4

Expected Output:

smallest value is 4

**(-37-).** Write a Java method to count all vowels in a string.

Input the string: JavaTraining

Expected Output:

Number of Vowels in the string: 5

**(-38-).** Write a Java method to count all words in a string.

Test Data:

Input the string: Hello I am learning core java .

Expected Output:

Number of words in the string: 6

int[] values = {7,3, 2, 5, 4, 6, 8, 10,};

(-39-)

int a = 0;

for (int i = 0; i < values.length; i = i + 1) {

a = a + values[i];

}

System.out.println(a);

b) int b = 0;

for (int i = 0; i < values.length; i = i + 2) {

b = b + values[i];

}

System.out.println(b);

(-40-)Find the number of odd and even number in an array?

(-41-).If String str[ ]={ “hello”, “coding”, “While”, “programs”, “girl”, “java”, “lion”} ;.

Write java for loop to print all the strings into different lines.

(-42-)Given the array a[ ]= {33, 11, 9, 45, 98, 66, 22, 89};

Answer the following questions.

What are the indices of the array a[ ]?

How many elements are in the array?

What is the 3th element of array?

Write the statement to print elements of 3nd and 5th indexes

What is the start index and end index of array a[ ]

**(-43-).** Sort an array in java?

(-44-).Add an element into an array?

(-45-).Find largest and smallest number in an array?

**(-46-).** Given an array which may contain duplicates, print all elements and their frequencies.

int a[]= {1, 3, 1, 5, 8, 9, 3, 4, 8, 1, 5}

**(-47-).** Write a Java program to find the numbers which are greater than the given number from an array?

**(-48-).** Create a class named Bank and give it attributes(data members) name, account number, and balance. it have specified the data members as “private”.

**(-49-).** Write a constructor in the Car class given below that initializes the brand class field with the string “Ford”.

Call the getBrand() method in the main method of the Sample class and store the value of the brand in a variable, and print the value.

**(-50-).** Create an abstract class 'Parent' with a method 'message'. It has two subclasses each having a method with the same name 'message' that prints "This is first subclass" and "This is second subclass" respectively.

Call the methods 'message' by creating an object for each subclass.

**(-51-).** Create an abstract class 'Bank' with an abstract method 'getBalance'. $100, $150 and $200 are deposited in banks A, B and C respectively.

'BankA', 'BankB' and 'BankC' are subclasses of class 'Bank', each having a method named 'getBalance'.

Call this method by creating an object of each of the three classes.

**(-52-).** Create an abstract class 'Animals' with two abstract methods 'cats' and 'dogs'.

Now create a class 'Cats' with a method 'cats' which prints "Cats meow" and a class 'Dogs' with a method 'dogs' which prints "Dogs bark", both inheriting the class 'Animals'.

Now create an object for each of the subclasses and call their respective methods.

**(-53-)** Write a program to

1. How to Iterate ArrayList using for each loop, Iterator, ListIterator.

2. Add, Remove, Remove an element in an ArrayList.

3. Remove duplicates from an ArrayList

4. Reverse an ArrayList

5. Converting ArrayList to String

6. Search an element of Java ArrayList Example

7. Sort an arrayList in ascending and descending order.

8. How to synchronize the ArrayList

**(-54-)** Write a program to

1. Access Elements of a LinkedList

2. Add Elements to a LinkedList

3. Check if the LinkedList contains the Element

4. Change Elements of a LinkedList

5. Remove All Elements from a LinkedList

6. Iterate over LinkedList using Iterator

**(-55-)**

- Iterate a hashmap using while and for each loop?

- Check if a particular key exists HashMap

-Check if a particular key exists in Java Hashtable example

-Java Basic example program to check particular value exists in hashmap

-Java program to remove key value from hashmap

-Convert keys of a map to List

-Convert Values of a map to List

-Java Coding Interview programming Questions : Java Test on HashMap

**(-56-).** How to sort map by values?

**(-57-).** Remove Duplicates from a list?

**(-58-).** Write a programs to find frequency of each String in a list?

**(-59-).** Fetch Top 3 salaried person?

**(-60-).** Count number of occurrence of words in a given list?

**(-61-)** Write a Java program to perform a runnable interface, take two threads t1 and t2 and fetch the names of the thread using getName() method.

**(-62-).** Program to create multiple thread.

=====================================================================================

**Appendix 2**

**(1.)**

After going through above youtube videos, create the following:

a.) Create an Intial spring boot project setup.

b.) Creating a Controller with name - "CustomerController"

c.) Create Service class for BussinessLogic

d.) Creating repository(Dao) classes for Database operation

e.) Connect Spring boot with database with the help of application.properties.

----------------------------------------------==============-------------------------------------------

Exercise for Rest Api Methods(post, put, get, delete)

----------------------------------------------==============-------------------------------------------

a.) Create a table in the database

Table name = "CustomerAccountDetails"

Column names = AccountNumber, FirstName, ,LastName, CifNumber, BranchCode, CustomerId, PhoneNumber.

**(2.)**

Create an end point which inserts the data first time in the database(by using jpa+hibernate) with the name "/createCustomerAccountDetails"

HttpMethod = POST

i.e request = {

"AccountNumber":"",

"FirstName":"",

"LastName":"",

"CifNumber":"",

"BranchCode":"",

"CustomerId":"",

"PhoneNumber":""

}

StatusCode = 201(created).

**(3.)**

Create an End point name = "/getCustomerAccountDetails" which is of type HttpMethod = GET and returns below mentioned response.

i.e request = {

"AccountNumber":""

}

response= {

"FirstName":"",

"LastName":"",

"CifNumber":"",

"BranchCode":""

}

StatusCode = 200(ok).

**(4.)**

Create an end point which update the data in the database(by using jpa+hibernate). End point name = "/updateCustomerAccountDetails"

HttpMethod = PUT

i.e request = {

"FirstName":"",

"LastName:"",

"CustomerId":"",

"BranchCode":"",

"PhoneNumber":""

}

StatusCode = 204 (No Content).

**(5.)**

Create an end point which delete's the data from the database(by using jpa+hibernate). End point name = "/deleteCustomerAccountDetails"

HttpMethod = DELETE

i.e request= {

"AccountNumber":""

}

StatusCode = 204 (No Content)

**(6.)**

Calling one Api to another Api.

a.)Create an endpoint to get the accountDetails. Endpoint Name : "/fetchAccountDetails".

HttpMethod = GET

i.e request = {

"AccountNumber":""

}

response ={

"AccountNumber":"",

"FirstName":"",

"LastName":"",

"CifNumber":"",

"BranchCode":"",

"CustomerId":"",

"PhoneNumber":""

}

b.)Create another sample project for testing.

c.)Create a testController inside the testing project having an HttpGet endpoint with name "/testFetchAccountDetails"

d.)Make an Api call from the testing project to call the endpoint with name= "/fetchAccountDetails" just created before this project.

**(7.)**

Create a API with Endpoint name="/studentsDetails" having the request in complex json structure.

Type = HttpMethod = Post

Request=

{

"students": [

{

"name": "",

"section": "",

"rollNo": "",

"marks": [

{

"subjectName": "maths",

"marks": ""

},

{

"subjectName": "English",

"marks": ""

}

]

},

{

"name": "",

"class": "",

"rollNo": "",

"marks": [

{

"subjectName": "maths",

"marks": ""

},

{

"subjectName": "English",

"marks": ""

}

]

}

]

}

Status Code = 201(created)

**(8.)**

Create an Api call that calls a database1(Table name = StudentDb => columns=studentId, studentName) to fetch studentNames based from studentId and then fetch result of that user from another database2(Tablename = StudentResultDb,column=studentName,studentResult).

Request={

"studentId":""

}

Response={

"studentResult"=""

}

StatusCode=200

**(9.)**

Create an api which fetches studentNames based upon studentId from the database1, if the student studentId not found in the db. In this case create a custom exception with the name (studentNotFoundException) and through that exception in repository layer then catch exception in controller and return statusCode=404.

Request = {

"studentId":""

}

StatusCode = 404;

**(10.)**

Create an api with name = "/employeeDetails" thats calls a database1(Table name = EmployeeTestDatabase, columns=employeeId, employeeName) to fetch employeeName based upon employeeId with having:

a.) ControllerName - EmployeeController.

b.) For bussiness Logic use - EmployeeService interface, EmployeeServiceImplementation class

c.) To getData from database use - EmployeeDao interface, then EmployeeDaoImplementation class.

Configure Junit for testing for the project:

1.) Create a test class for EmployeeController with name EmployeeControllerTest and write unit test cases for all the methods in the controller.

2.) Create test cases for EmployeeService with the name EmployeeServiceTest and write unit test cases for all the methods in the controller.

3.) Create a test class for EmployeeDao with name EmployeeDaoTest and write unit test cases for all the methods in the controller.

Note: Use @Mock, @InjectMocks annotations for mocking for mocking all the dependencies.

**(11.)**

Create an api with name = "/customerDetails" thats calls a database1(Table name = CustomerTestDatabase, columns=customerId, customerName) to fetch customerName based upon customerId with having:

a.) ControllerName - CustomerController.

b.) For bussiness Logic use - CustomerService interface, CustomerServiceImplementation class

c.) To getData from database use - CustomerDao interface, then CustomerDaoImplementation class.

Configure Junit for testing for the project:

1.) Create a test class for CustomerController with name CustomerControllerTest and write unit test cases for all the methods in the controller.

2.) Create test cases for CustomerService with the name CustomerServiceTest and write unit test cases for all the methods in the controller.

3.) Create a test class for CustomerDao with name CustomerDaoTest and write unit test cases for all the methods in the controller.

Note: Use @Mock, @InjectMocks annotations for mocking for mocking all the dependencies.

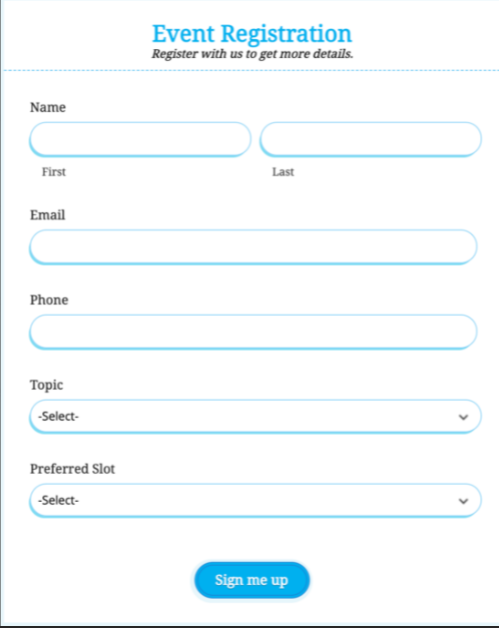
Create all possible scenario for all the above 3 test cases.

**UI Curriculum:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Topic** | **Sub-Topic** | **Learning Material** | **Coding Exercises** |
| HTML | |  | | --- | | Learn the Basics of HTML | | Semantic HTML | | Dividing page into section and structuring the DOM properly | | [Build Responsive Real World Websites with HTML5 and CSS3](https://www.udemy.com/course/design-and-develop-a-killer-website-with-html5-and-css3/) |  |
| CSS | |  | | --- | | Learn the Basics of CSS | | Grid and Flexbox | | Responsive web design and media quert | | [CSS — The Complete Guide 2023 (incl. Flexbox, Grid & Sass)](https://click.linksynergy.com/deeplink?id=CuIbQrBnhiw&mid=39197&murl=https%3A%2F%2Fwww.udemy.com%2Fcourse%2Fcss-the-complete-guide-incl-flexbox-grid-sass%2F) | Appendix 3. Q1 |
| JS | |  | | --- | | Syntax and basic Operation | | DOM manipulation | | Hoisting, Event bubbling, Prototyping | | Ajax | | ES6 and new features | | [The Complete JavaScript Course 2022: Build Real Projects!](https://www.udemy.com/course/javascript-the-complete-guide-2020-beginner-advanced/?src=sac&kw=the+complete+Javascript) |  |
| React | |  | | --- | | React basics and working with Components | | React state and working with events | | Rendering list and conditional content | | Styling React components | | Debugging react apps | | Working with Fragment, Refs and Portal | | Handling side effects, reducers and context API | | Working with Forms and User Input | | Redux | | [React - The Complete Guide (incl Hooks, React Router, Redux)](https://www.udemy.com/course/react-the-complete-guide-incl-redux/) | Appendix 3. Q2 |

**Appendix 3**

1. Try to build this registration form with same look and feel (without using any css framework).



1. Create a CRUD Application using React to display the clients list. User can add Client, Edit Client and delete client from the table list. Try to use Modal popup to add/ Edit and show Confirmation modal on deleting client.  Also add a router with two tabs on top. One is HOME and another is CLIENTS. Try to find the UI library accordingly like react-bootstrap etc., to get the pre-built components.

Graphical user interface, application, Teams

Description automatically generated

**SQL Curriculum:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Topic** | **Sub-topic** | **Learning Material** | **Coding exercise** |
| SQL | 1.How to create and use a database(What is database ,Database management system,create db and drop db).  2.Introduction of SQL:1.what is SQL.2.categories of SQL 3.SQL Constraints(4 all expaination with real time examples).  3. Create table and how to extract data from it with various clauses and Operators(Create table,drop table with all clauses).  4. How to join using different tables using different joint statements(What is join,Types of join and various all types of explaianation with realtime scenarios.  5. Inbuilt function and user-defined functions(Inbuilt function :COUNT, SUM, AVG, MAX and MIN &U-D fun:Scalar valued and Table valued).  6. Stored procedures and transcation in sql(Select,Insert,Update,Delete scenarios need to prepare with examples). | <https://www.javatpoint.com/sql-tutorial>  Other References:  <https://www.tutorialspoint.com/sql/index.htm>  <https://beginner-sql-tutorial.com/sql-grant-revoke-privilages-roles.htm>  <https://www.youtube.com/watch?v=JTDK6r1GuUU> | Appendix 4 (Q-1 to 32) |
|  | 7.Find how to implement exception handling | <https://www.sqlservertutorial.net/sql-server-stored-procedures/sql-server-try-catch/>  Other References:  https://www.dotnettricks.com/learn/sqlserver/sql-server-exception-handling-by-try-catch |  |

**Appendix 4**

1. Enter the query to list the all data in the customer details table ? \_\_\_\_\_\_\_ \* FROM employee details

2.Enter the query to delete the employee details table ?

3.Enter the query to Select the records where the EmployeeID column has the value 12. ?

4. Enter the query to Insert a new record in the employee details table ? \_\_\_\_\_\_\_ Employee details (name, email, mobile, city) \_\_\_\_\_\_ ( 'Varsha', 'varsha@user,com', '9876543000', 'Chennai')

5. Enter the query to Set the value of the City columns to 'Oslo', but only the ones where the name column has the value "Bairistow". ? \_\_\_\_\_\_\_ employee details \_\_\_ city='Oslo' \_\_\_\_ name="Bairistow"

6. Enter the query to delete all data in the employee details table ? \_\_\_\_\_\_\_\_\_\_\_\_ employee details

7. Enter the query to add Address column in employee details table ? \_\_\_\_\_\_\_\_\_ employee details ADD \_\_\_\_\_\_ VARCHAR(100) NOT NULL

SQL Exercise Sl.No Question Answer

8. Enter the query to delete 'city' column from employee details table ? \_\_\_\_\_\_\_\_\_\_\_ employee details \_\_\_\_\_\_\_\_\_ city

9. Enter the query to delete the data where city column has the value 'chennai' in the employee details table ? \_\_\_\_\_\_\_\_\_\_\_\_ employee details \_\_\_\_\_ city= 'chennai'

10. How to use a JOIN clause in a query to join two or more tables based on a common column in them

Table – EmployeeDetails

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| EmpId | FullName | ManagerId | DateOfJoining | City |
| 121 | John Snow | 321 | 01/31/2014 | Toronto |
| 321 | Walter White | 986 | 01/30/2015 | California |
| 421 | Kuldeep Rana | 876 | 27/11/2016 | New Delhi |

Table – EmployeeSalary

|  |  |  |  |
| --- | --- | --- | --- |
| EmpId | Project | Salary | Variable |
| 121 | P1 | 8000 | 500 |
| 321 | P2 | 10000 | 1000 |
| 421 | P1 | 12000 | 0 |

11.Write an SQL query to fetch the count of employees working in project ‘P1’.

12. Write an SQL query to find the maximum, minimum, and average salary of the employees.

13. Write an SQL query to find the employee id whose salary lies in the range of 9000 and 15000.

14.  Write an SQL query to fetch all the employees who either live in California or work under a manager with ManagerId – 321.

15. Write an SQL query to fetch common records between two tables.

16. Write an SQL query to fetch records that are present in one table but not in another table.

17. Write an SQL query to fetch the EmpIds that are present in both the tables –   ‘EmployeeDetails’ and ‘EmployeeSalary.

18. Write an SQL query to fetch the employee full names and replace the space with ‘-’.

19. Write an SQL query to display both the EmpId and ManagerId together.

20. Write an SQL query to upper case the name of the employee and lower case the city values.

21. Fetch all the employees who are not working on any project.

22.  Write an SQL query to fetch employee names having a salary greater than or equal to 5000 and less than or equal to 10000.

23. Write an SQL query to find the current date-time.

24 Write an SQL query to fetch all the Employees details from EmployeeDetails table who joined in the Year 2020.

25. Write an SQL query to fetch all employee records from EmployeeDetails table who have a salary record in EmployeeSalary table.

26. Write an SQL query to fetch project-wise count of employees sorted by project’s count in descending order.

27. Write an SQL query to join both tables using left join, right join, inner join.

28. Write an SQL query to Constraints with examples(NOT NULL ,UNIQUE,Primary key, foreign key)

29. Write an SQL query to with examples(LIKE, Bitwise Operators,

, Comparison Operators)

30. Write an SQL query Clause to with examples(SELECT,WHERE,GROUPBY,ORDERBY DESC )

31.Stored procedure :select-insert-update-delete-using-stored-procedure-in-sql simple examples

32.How to handle exception in sql with examples.

**.NET Curriculum:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Topic** | **Sub-Topic** | **Learning Material** | **Coding Exercises** |
| C# | |  | | --- | | 1.Visual Studio 2015: Introduction & Personalization | | 2.C# Session 1 Overview of .Net Framework and C# Features | | 3.Programming in C#: Creating Types | | 4.C# Session 2 Data types and Operators | | 5.Programming in C#: Managing Program Flow | | 6.C# Session 3 Control statements | | 7.C# Session 4 Array | | 8.Programming Fundamentals: Algorithms, Sorting, & Searching | | 9.C# Session 5 Data structures and Algorithm | | 10.C# Session 6 Search Algorithm | | 11.C# Session 7 String Functions | | 12.Object-oriented Programming & Design Basics | | 13.C# Session 8 OOPs Concept | | 14.Programming Fundamentals: Object-oriented Programming | | 15.C# Session 9 Encapsulation and Polymorphism | | 16.C# Session 10 Data Abstraction and Inheritance | | 17.C# Session 11 Properties,Indexers,Collections | | 18.C# Session 12 Generic,Delegates | | 19.C# Session 13 Events, Exception Handling, Interface | | 20.SQL 2016 Tables | | 21.C# Session 14 Introduction to RDBMS | | 22.C# Session 15 Database connection | | Percipio Link:  [C# à  Percipio Journey C# Programming](https://apc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fhclcontent.percipio.com%2Fjourney%2F8448b161-ee4e-45a5-b4e8-541bbf2d2f19&data=05%7C01%7Cvarsha.gaurav%40hcl.com%7C3b52010bc4af4a7e4d7f08dade7a9e8a%7C189de737c93a4f5a8b686f4ca9941912%7C0%7C0%7C638066915468745878%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=8WNcWatGEflC8wqqQn58bk3K6EmDUQsCdGQzajBzBIQ%3D&reserved=0)  [Visual Studio à Percipio Channel Visual Studio](https://apc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fhclcontent.percipio.com%2Fchannels%2F4113e731-3bf1-11e7-9f4b-31846c93960b%3Ftab%3DWATCH&data=05%7C01%7Cvarsha.gaurav%40hcl.com%7C3b52010bc4af4a7e4d7f08dade7a9e8a%7C189de737c93a4f5a8b686f4ca9941912%7C0%7C0%7C638066915468902097%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=rZV41uMKTMc8Fv5VOSNue5NdVK2Ir9ilD1AwsORE68Y%3D&reserved=0)  Visual Studio:  <https://www.youtube.com/watch?v=REG-p_eFNIw>  C#:  <https://www.youtube.com/playlist?list=PLAC325451207E3105>  DBMS:  <https://www.youtube.com/watch?v=7tzwPendb4g>  <https://www.youtube.com/watch?v=PzBzKoxnyPA> | Appendix 5. (Q1 to 12) |
| **Framework** | 1. ASP.NET INTRODUCTION. | <https://www.youtube.com/playlist?list=PLS1QulWo1RIaM8-S7kTHgWd_pGNu-CyQS> |  |
|  | 1. Learn how to create Web Services and consume them using ASP.NET Webforms | <https://www.youtube.com/playlist?list=PLtMFeKNXw-GH0wC0tTM1Tb8wgOw7NV9EJ>  <https://www.youtube.com/playlist?list=PL6n9fhu94yhW6VEqiXQvS2bLb5KaLTo7c> |  |
|  | 1. Build RESTful web API (C#) with Authentication and learn how to consume them in a real world application (.NET 7 API) | <https://www.youtube.com/playlist?list=PL6n9fhu94yhW7yoUOGNOfHurUE6bpOO2b> |  |
|  | 1. Build real world application using ASP.NET Core MVC, Entity Framework Core and ASP.NET Core Identity. | <https://www.youtube.com/playlist?list=PL6n9fhu94yhVkdrusLaQsfERmL_Jh4XmU> |  |
|  | 1. This MS SQL server course teaches how to create database with MS SQL query, to manage SQL database ( MS SQL server ). | <https://www.youtube.com/playlist?list=PL_nMO-wncU0nYz_BFwHJENd2YWoobA9Ly> |  |
|  | 1. Master unit testing C# code with NUnit and Moq: all about dependency injection, best practices and pitfalls to avoid | <https://www.youtube.com/watch?v=HYrXogLj7vg> |  |

**Appendix 5**

1. A company decided to give bonus of 5% to employee if his/her year of service is more than 5 years. Ask user for their salary and year of service and print the net bonus amount.
2. A school has following rules for grading system:
3. Below 25 - F
4. 25 to 45 - E
5. 45 to 50 - D
6. 50 to 60 - C
7. 60 to 80 - B
8. Above 80 - A

Ask user to enter marks and print the corresponding grade using C# program.

1. Write a program that asks the user for a GPA on a scale of 0.0 to 4.0. If the user enters a number larger than 4.0 or less than 0.0, the program must output “Invalid GPA.” If the user enters a valid number, the program should display the corresponding letter grade based on the table below.

GPA range Letter Grade

1. 4.0 A+
2. 3.75 to less than 4.0 A
3. 3.5 to less than 3.75 A-
4. 3.25 to less than 3.5 B+
5. 3.0 to less than 3.25 B
6. 2.75 to less than 3.0 B-
7. 2.0 to less than 2.75 C
8. 0 to less than 2.0 F
9. Write a C# Program to check whether the number is palindrome or not using for and while loop?
10. Write a C# Program to count Sum of digits in a number using while loop?
11. Write a C# program to print following:

a)

1

222

33333

4444444

555555555

b)

1

212

32123

4321234

543212345

1. Write a C# method to count all vowels in a string.

* Input the string: Dotnettraining
* Expected Output: “Number of Vowels in the string: 5”

1. Write a C# method to count all words in a string.

* Input String: “Hello I am learning dotnet” .
* Expected Output: “Number of words in the string: 5”

1. Given an array of integers, return the largest gap between the sorted elements of the array.

For example, consider the array:

[9, 4, 26, 26, 0, 0, 5, 20, 6, 25, 5]

... in which, after sorting, the array becomes:

[0, 0, 4, 5, 5, 6, 9, 20, 25, 26, 26]

... so that we now see that the largest gap in the array is between 9 and 20 which is 11.

1. Write a C# Program to find how many "Prime Numbers" are there up to the given integer?

Examples

* primeNumbers(10) ➞ 4 // 2, 3, 5 and 7
* primeNumbers(20) ➞ 8 // 2, 3, 5, 7, 11, 13, 17 and 19
* primeNumbers(30) ➞ 10 // 2, 3, 5, 7, 11, 13, 17, 19, 23 and 29

1. Given a sentence, reverse all the words which have odd length. The even length words are not changed.

Examples

* reverseOdd("Bananas") ➞ "sananaB"
* reverseOdd("One two three four") ➞ "enO owt eerht four"
* reverseOdd("Make sure uoy only esrever sdrow of ddo length")
* ➞ "Make sure you only reverse words of odd length"

1. Create a program that converts a phone number with letters to one with only numbers.

| **Number** | **Letter** |
| --- | --- |
| 0 | None |
| 1 | None |
| 2 | ABC |
| 3 | DEF |
| 4 | GHI |
| 5 | JKL |
| 6 | MNO |
| 7 | PQRS |
| 8 | TUV |
| 9 | WXYZ |

Examples

* textToNum("123-647-EYES") ➞ "123-647-3937"
* textToNum("(325)444-TEST") ➞ "(325)444-8378"
* textToNum("653-TRY-THIS") ➞ "653-879-8447"
* textToNum("435-224-7613") ➞ "435-224-7613"

### Notes

* All inputs will be formatted as a string representing a proper phone number in the format XXX-XXX-XXXX or (XXX)XXX-XXXX, using numbers and capital letters.
* Check the **Resources** tab for more info on telephone keypads.

1. Write a C# program to print square root of numbers from 1 to 100 and also calculate time to execute square roots

Example:

Start Time: <Date Time Stamp>

Square(1) = 1

Square(2) = 4

………

Square(100) = 10000

End Time: <Date Time Stamp>

Execution Time in Seconds : <number of seconds>

**DP203 Curriculum:**

|  |  |  |
| --- | --- | --- |
| **Topic** | **Sub-Topic** | **Learning Material** |
| |  | | --- | | Databricks | | | | | | | |  | | --- | | Setup azure workspace | | Databricks | | Databricks Introduction | | Databricks Clusters | | Databricks Notebooks | | Databricks DBFS | | Azure data bricks &Spark core for Date Engineers(Python/SQL)|udemy |
| |  | | --- | | Data injection | | | | | | | | |  | | --- | | Spark Introduction | | Data injection(JSON) | | Data injection(CSV) | | Data injection(multiple files) | | Filter and join transformation | | Aggregations | | HandsOn in Databricks | | Azure data bricks &Spark core for Date Engineers (Python/SQL)|udemy |
| |  | | --- | | Spark | | | | | | | | | | |  | | --- | | HandsOn in Spark(python) | | Spark(SQL) | | Using SQL in Spark applications | | Spark SQL-database/tables/views | | Spark SQL-filter/join/aggregation | | Spark SQL- Analysis | | incremental load | | HandsOn in Spark(SQL) | | Delta lake | | Azure data bricks &Spark core for Date Engineers (Python/SQL)|udemy |

**DP100 Curriculum:**

|  |  |  |
| --- | --- | --- |
| **Topic** | **Sub-Topic** | **Learning Material** |
| |  |  |  | | --- | --- | --- | | |  |  | | --- | --- | | |  | | --- | | Azure  ML Studio | | | | | | | | | | | | | | | | |  | | --- | | Getting Started with Azure ML | | Setting up Azure ML Workspace and Resources | | Running Experiments and Training Models | | Deploying the Models | | AzureML Designer: Data Preprocessing | | Project 1: Regression Using AzureML Designer | | Project 2: Classification Using AzureML Designer | | <https://www.udemy.com/course/dp-100-azure-machine-learning-data-science-for-beginners/> |
| |  | | --- | | Azure ML SDK and  Automated ML | | | | |  | | --- | | AzureML SDK: Setting up Azure ML Workspace | | AzureML SDK: Running Experiments and  Training Models | | Use Automated ML to Create Optimal Models | | <https://www.udemy.com/course/dp-100-azure-machine-learning-data-science-for-beginners/> |
| |  | | --- | | Hyperparameters  Tuning,  Model Explainers and Registration, detect unfairness,  monitor data drift | | | | | | |  | | --- | | Tune hyperparameters with Azure Machine Learning | | Use model explainers to interpret models | | Model Registration and Deployment using AzureML SDK | | Detect and mitigate unfairness in models with Azure  Machine Learning | | Monitor data drift with Azure Machine Learning | | <https://www.udemy.com/course/dp-100-azure-machine-learning-data-science-for-beginners/>  [Detect and Mitigate Unfairness in Models with Azure Machine Learning - YouTube](https://www.youtube.com/watch?v=1Au1z9CtLq4)  AI Model Deployment, Monitoring and Data Drifting using Azure Machine Learning | Azure INDIA – YouTube |
| |  | | --- | | Azure Fundamentals | | | | | |  | | --- | | Azure Fundamentals: Virtual Machines | | Azure Fundamentals: Managed Compute Services | | Azure Fundamentals: Storage | | Azure Fundamentals: Databases | | <https://www.udemy.com/course/dp-100-azure-machine-learning-data-science-for-beginners/> |
| Build and operate machine learning solutions with Azure Databricks |  | [DP-100: A-Z Machine Learning using Azure Machine Learning | Udemy](https://www.udemy.com/course/machine-learning-using-azureml/) |

**Manual Testing Curriculum:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Topic** | **Sub-Topic** | **Learning Material** | **Other references** | **Coding Exercises** |
| What is Software Testing?  Why is Software Testing Important?  What are the benefits of Software Testing?  Testing IN Software Engineering.  Types of Software Testing | |  | | --- | |  | | <https://www.guru99.com/software-testing.html> | <https://www.geeksforgeeks.org/software-testing-basics/>  <https://www.w3schools.in/software-testing/tutorials/> | Appendix 6. (Q1 to 3) |
| Testing Strategies in Software Engineering.  Program  Testing.  Principles of Software Testing. | Testing shows presence of defects  Exhaustive testing is not possible  Early testing  Defect clustering  Pesticide paradox  Testing is context dependent  Absence of errors fallacy | https://www.guru99.com/software-testing.html | <https://www.geeksforgeeks.org/software-testing-basics/>  <https://www.w3schools.in/software-testing/tutorials/> | Appendix -6 (Q-4 to 6) |
| STLC (Software Testing Life Cycle) Phases, Entry, Exit Criteria | Requirement Analysis  Test Planning  Test case development  Test Environment setup  Test Execution  Test Cycle closure | <https://www.guru99.com/software-testing.html> | <https://www.geeksforgeeks.org/software-testing-basics/>  <https://www.w3schools.in/software-testing/tutorials/> | Appendix-6(Q-7 to 8) |
| Testing Types | Manual Testing.  Black Box Testing.  White Box Testing.  Unit Testing.  System Testing.  Integration Testing.  Acceptance Testing | <https://www.guru99.com/software-testing.html> | <https://www.geeksforgeeks.org/software-testing-basics/>  <https://www.w3schools.in/software-testing/tutorials/> | Appendix -6 (Q-9 to 11) |
| AUTOMATION TESTING: What is, Process, Benefits & Tools  Difference Between Manual and Automation Testing | Why Test Automation  Which Test Cases to Automate?  Automated Testing Process  Test tool selection  Define the scope of Automation  Planning, Design, and Development  Test Execution  Test Automation Maintenance Approach.  Framework for Automation  Automation Tool Best Practices  Benefits of Automation Testing  How to Choose an Automation Tool? | <https://www.guru99.com/software-testing.html> | <https://www.geeksforgeeks.org/software-testing-basics/>  <https://www.w3schools.in/software-testing/tutorials/> | Appendix-6 (Q-12 to 14) |
| Unit Testing – What is & Types  Integration Testing: What is & Types  Sanity Testing Vs. Smoke Testing – Difference Between Them:  What is Regression Testing: | What is Unit Testing?  Why perform Unit Testing?  How to execute Unit Testing  Types of Integration Testing  Big Bang Testing  Incremental Testing  Stubs and Drivers  Bottom-up Integration Testing  Top-down Integration Testing  Sandwich Testing  What is a Software Build  What is Smoke Testing  What is Sanity Testing  Why Regression Testing  How to do Regression Testing  Selecting test cases for regression testing  Difference between Re-Testing and Regression Testing  Challenges in Regression Testing  Objectives of Non-functional testing  Characteristics of Non-functional testing  Non-functional testing Parameters | <https://www.guru99.com/software-testing.html> | <https://www.geeksforgeeks.org/software-testing-basics/>  <https://www.w3schools.in/software-testing/tutorials/> | Appendix -6 (Q 15 to 17) |
|  | Test policy  Test strategy  Test plan  Requirements Traceability Matrix  Test Scenario  Test case  Test Data  Defect Report  Test summary Report | <https://www.guru99.com/software-testing.html> | <https://www.geeksforgeeks.org/software-testing-basics/>  <https://www.w3schools.in/software-testing/tutorials/> | Appendix -6 (Q 18 to 20) |
| What is Test Scenario in Software Testing  What is Test Case & How to Write Test Cases  What is Test Analysis  What is Requirements Traceability Matrix (RTM) in Testing  What is Test Data in Software Testing? |  | <https://www.guru99.com/software-testing.html> | <https://www.geeksforgeeks.org/software-testing-basics/>  <https://www.w3schools.in/software-testing/tutorials/> | Appendix-6 (Q-21 to 27) |

**Appendix 6**

1.What do you mean by software testing ?

2.What are different types of softwares testing ?

3. What are the benefits of Software Testing ?

4. What are the different phases of Software Testing Life Cycle ?

5. What is the difference between test planning and test cycle closure?

6. What is the difference between test case development and test cycle closure?

7. What is the difference between black box testing and white box testing?

8. What is the difference between unit testing and integration testing?

9. What is difference between manual testing and automation testing ?

10. What are best practices for automation tool ?

11. What are the benefits of automation testing ?

12. What is difference between sanity and smoke testing ?

13. What is difference between re-testing and regression testing ?

14. What do you mean software builds ?

15. What do you mean requirment Traceability Matrix ?

16. What is difference between test case and test scenario ?

17. What do you mean funtional testing and non-functional testing?

18. What is Test Case & How to Write Test Cases?

19. What is Test Data in Software Testing?

20. What is difference between test plan and test strategy?

21. What is the differene between defect report and test summary report?

22. What are funtional and non functional testing parameters?

23. What is difference between top-down and bottom-up integration testing?

24. What is the difference between stubs and drivers?

25. How to execute Unit Testing?

26. What do you mean by big bang testing and sandwich testing?

27. What are different type of framework in Automation?

**Core Java Curriculum (Prerequisite for Selenium)**

|  |  |  |
| --- | --- | --- |
| **Topic** | **Learning Material** | **Coding Exercises** |
| Different Data Types In Java - Core Java. | <https://www.youtube.com/watch?v=Wm0KeM90bUo&list=PLFGoYjJG_fqqyIj2ht0aHMx_HnGX3ZFEx> | Appendix 7 (Q1 – Q12) |
| What is String Concatenation and If Else Conditions | <https://www.youtube.com/watch?v=81goXaXnopE&list=PLFGoYjJG_fqqyIj2ht0aHMx_HnGX3ZFEx&index=2> |
| Learn for and while Loops | <https://www.youtube.com/watch?v=zvbVyn5X6Ac&list=PLFGoYjJG_fqqyIj2ht0aHMx_HnGX3ZFEx&index=3> |
| What is Static Array in Java | <https://www.youtube.com/watch?v=LBgQBb5pxXs&list=PLFGoYjJG_fqqyIj2ht0aHMx_HnGX3ZFEx&index=4> |
| What is Two Dimension (2D) Array | <https://www.youtube.com/watch?v=pO0kC3YSCYo&list=PLFGoYjJG_fqqyIj2ht0aHMx_HnGX3ZFEx&index=5> |
| What is Class and Object | <https://www.youtube.com/watch?v=v1sPHpvQCgI&list=PLFGoYjJG_fqqyIj2ht0aHMx_HnGX3ZFEx&index=6> |
| What is Function or Method | <https://www.youtube.com/watch?v=9ugu0a5aV7g&list=PLFGoYjJG_fqqyIj2ht0aHMx_HnGX3ZFEx&index=7> |
| Difference between local and global variables | <https://www.youtube.com/watch?v=wEEXgVoY9W0&list=PLFGoYjJG_fqqyIj2ht0aHMx_HnGX3ZFEx&index=8> |
| What is Method Overloading | <https://www.youtube.com/watch?v=Dzb_EYmfOus&list=PLFGoYjJG_fqqyIj2ht0aHMx_HnGX3ZFEx&index=9> |
| What is Static and Non-Static | <https://www.youtube.com/watch?v=yQkbw66gt9I&list=PLFGoYjJG_fqqyIj2ht0aHMx_HnGX3ZFEx&index=10> |
| Stack vs Heap Memory | <https://www.youtube.com/watch?v=4yKxJjYXZ0A&list=PLFGoYjJG_fqqyIj2ht0aHMx_HnGX3ZFEx&index=11> |
| Wrapper Classes | <https://www.youtube.com/watch?v=8gLTN691BwM&list=PLFGoYjJG_fqqyIj2ht0aHMx_HnGX3ZFEx&index=12> |
| What is Call By Value & Call By Reference | <https://www.youtube.com/watch?v=mpFk7Vh8lHY&list=PLFGoYjJG_fqqyIj2ht0aHMx_HnGX3ZFEx&index=13> |
| Method Overriding, Inheritance and Polymorphism | <https://www.youtube.com/watch?v=DWpYniQAVyI&list=PLFGoYjJG_fqqyIj2ht0aHMx_HnGX3ZFEx&index=14> |
| Interface Concept and Multiple Inheritance | <https://www.youtube.com/watch?v=ah0pn81IdDU&list=PLFGoYjJG_fqqyIj2ht0aHMx_HnGX3ZFEx&index=15> |
| Overview of Collection framework | <https://www.youtube.com/watch?v=mQ9uxTWZCXA&list=PLFGoYjJG_fqqyIj2ht0aHMx_HnGX3ZFEx&index=17> |
| ArrayList: Java Collections Framework | <https://www.youtube.com/watch?v=Plob9dBGyEY&list=PLFGoYjJG_fqqyIj2ht0aHMx_HnGX3ZFEx&index=18> |
| LinkedList in Java Collections Framework | <https://www.youtube.com/watch?v=JZ8sWMW6osg&list=PLFGoYjJG_fqqyIj2ht0aHMx_HnGX3ZFEx&index=19> |
| final vs finally vs finalize | <https://www.youtube.com/watch?v=aqDiBybBRqM&list=PLFGoYjJG_fqqyIj2ht0aHMx_HnGX3ZFEx&index=20> |
| Difference between Interface and Absract Class | <https://www.youtube.com/watch?v=4oEV1aYcOwI&list=PLFGoYjJG_fqqyIj2ht0aHMx_HnGX3ZFEx&index=25> |
| Constructor Concept and This Keyword | <https://www.youtube.com/watch?v=_Hv9aRx86w8&list=PLFGoYjJG_fqqyIj2ht0aHMx_HnGX3ZFEx&index=28> |
| Exception Handling in Java | <https://www.youtube.com/watch?v=ZF0AmJN7a8k&list=PLFGoYjJG_fqqyIj2ht0aHMx_HnGX3ZFEx&index=30> |

**Appendix -7**

1. A company decided to give bonus of 5% to employee if his/her year of service is more than 5 years. Ask user for their salary and year of service and print the net bonus amount.

2. A school has following rules for grading system:

a. Below 25 - F

b. 25 to 45 - E

c. 45 to 50 - D

d. 50 to 60 - C

e. 60 to 80 - B

f. Above 80 - A

Ask user to enter marks and print the corresponding grade using Java program.

3. Write a program that asks the user for a GPA on a scale of 0.0 to 4.0. If the user enters a number larger than 4.0 or less than 0.0, the program must output “Invalid GPA.” If the user enters a valid number, the program should display the corresponding letter grade based on the table below.

GPA range Letter Grade

1. 4.0 A+

2. 3.75 to less than 4.0 A

3. 3.5 to less than 3.75 A-

4. 3.25 to less than 3.5 B+

5. 3.0 to less than 3.25 B

6. 2.75 to less than 3.0 B-

7. 2.0 to less than 2.75 C

8. 0 to less than 2.0 F

4. Write a Java Program to check whether the number is palindrome or not using for and while loop?

5. Write a Java Program to count Sum of digits in a number using while loop?

6. Write a Java program to print following:

a)

1

222

33333

4444444

555555555

b)

1

212

32123

4321234

543212345

7. Write a Java method to count all vowels in a string.

 Input the string: Javatraining

 Expected Output: “Number of Vowels in the string: 5”

8. Write a Java method to count all words in a string.

 Input String: “Hello I am learning core java” .

 Expected Output: “Number of words in the string: 6”

9. Given an array of integers, return the largest gap between the sorted elements of the array.

For example, consider the array:

[9, 4, 26, 26, 0, 0, 5, 20, 6, 25, 5]

... in which, after sorting, the array becomes:

[0, 0, 4, 5, 5, 6, 9, 20, 25, 26, 26]

... so that we now see that the largest gap in the array is between 9 and 20 which is 11.

10. Write a Java Program to find how many "Prime Numbers" are there up to the given integer?

Examples

 primeNumbers(10) ➞ 4 // 2, 3, 5 and 7

 primeNumbers(20) ➞ 8 // 2, 3, 5, 7, 11, 13, 17 and 19

 primeNumbers(30) ➞ 10 // 2, 3, 5, 7, 11, 13, 17, 19, 23 and 29

11. Given a sentence, reverse all the words which have odd length. The even length words are not changed.

Examples

 reverseOdd("Bananas") ➞ "sananaB"

 reverseOdd("One two three four") ➞ "enO owt eerht four"

 reverseOdd("Make sure uoy only esrever sdrow of ddo length")

 ➞ "Make sure you only reverse words of odd length"

12. Create a program that converts a phone number with letters to one with only numbers.

Number Letter

0 None

1 None

2 ABC

3 DEF

4 GHI

5 JKL

6 MNO

7 PQRS

8 TUV

9 WXYZ

Examples

 textToNum("123-647-EYES") ➞ "123-647-3937"

 textToNum("(325)444-TEST") ➞ "(325)444-8378"

 textToNum("653-TRY-THIS") ➞ "653-879-8447"

 textToNum("435-224-7613") ➞ "435-224-7613"

Notes

• All inputs will be formatted as a string representing a proper phone number in the format XXX-XXX-XXXX or (XXX)XXX-XXXX, using numbers and capital letters.

• Check the Resources tab for more info on telephone keypads.

13.Write a Java Program to validate an IP address using Regular Expressions in Java

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| **Se Selenium Curriculum:**   |  |  |  | | --- | --- | --- | | **Topic** | **Learning Material** | **Assignment** | | WebDriver Eclipse Java Project Setup. | https://www.youtube.com/watch?v=j2dkdqfzY9Y&&list=PLFGoYjJG\_fqo4oVsa6l\_V-\_7-tzBnlulT | **Assignment 1** | | How to launch Chrome and Firefox | https://www.youtube.com/watch?v=cu\_5BFfYHCA&&list=PLFGoYjJG\_fqo4o Vsa6l\_V-\_7-tzBnlulT&&index=2 | | Different Locators in WebDriver | https://www.youtube.com/watch?v=cu\_5BFfYHCA&&list=PLFGoYjJG\_fqo4o Vsa6l\_V-\_7-tzBnlulT&&index=4 | | Handling JavaScript Alert and Popup | https://www.youtube.com/watch?v=cu\_5BFfYHCA&&list=PLFGoYjJG\_fqo4o Vsa6l\_V-\_7-tzBnlulT&&index=5 | | How to Handle Frames in Selenium WebDriver. | https://www.youtube.com/watch?v=cu\_5BFfYHCA&&list= PLFGoYjJG\_fqo4o Vsa6l\_V-\_7-tzBnlulT&&index=6 | | MouseMovement, Drag & Drop and ImplicitWait. | https://www.youtube.com/watch?v=cu\_5BFfYHCA&&list=PLFGoYjJG\_fqo4o Vsa6l\_V-\_7-tzBnlulT&&index=7 | | Dynamic XPath using Different Approache. | https://www.youtube.com/watch?v=cu\_5BFfYHCA&&list=PLFGoYjJG\_fqo4o Vsa6l\_V-\_7-tzBnlulT&&index=8 | | ExplicitWait, Take Screenshot and Navigate Back & Forward. | https://www.youtube.com/watch?v=cu\_5BFfYHCA&&list=PLFGoYjJG\_fqo4o Vsa6l\_V-\_7-tzBnlulT&&index=9 | | Handle Browser Pop Up Window | https://www.youtube.com/watch?v=cu\_5BFfYHCA&&list=PLFGoYjJG\_fqo4o Vsa6l\_V-\_7-tzBnlulT&&index=10 | | Headless Browser Testing using HTMLUnitDriver. | https://www.youtube.com/watch?v=cu\_5BFfYHCA&&list=PLFGoYjJG\_fqo4o Vsa6l\_V-\_7-tzBnlulT&&index=12 | | Highlight elements using JavaScriptExecutor | https://www.youtube.com/watch?v=cu\_5BFfYHCA&&list=PLFGoYjJG\_fqo4o Vsa6l\_V-\_7-tzBnlulT&&index=13 | | JavaScriptExecutor With Selenium WebDriver | https://www.youtube.com/watch?v=cu\_5BFfYHCA&&list=PLFGoYjJG\_fqo4o Vsa6l\_V-\_7-tzBnlulT&&index=14 | | Difference b/w isDisplayed, isEnabled and isSelected | https://www.youtube.com/watch?v=cu\_5BFfYHCA&&list=PLFGoYjJG\_fqo4o Vsa6l\_V-\_7-tzBnlulT&&index=15 | | How to Handle Dynamic WebTable | https://www.youtube.com/watch?v=cu\_5BFfYHCA&&list=PLFGoYjJG\_fqo4o Vsa6l\_V-\_7-tzBnlulT&&index=16 | | Handle Calendar in Selenium WebDriver | https://www.youtube.com/watch?v=cu\_5BFfYHCA&&list=PLFGoYjJG\_fqo4o Vsa6l\_V-\_7-tzBnlulT&&index=18 | | How to Become Genius in XPath in Selenium | https://www.youtube.com/watch?v=cu\_5BFfYHCA&&list=PLFGoYjJG\_fqo4o Vsa6l\_V-\_7-tzBnlulT&&index=20 | | What is HTML DOM & StaleElement Exception | https://www.youtube.com/watch?v=BwjICm6vIEM&list=PLFGoYjJG\_fqo4oVsa6l\_V-\_7-tzBnlulT&index=25 | | TestNG Framework- Selenium Tutorial Part-1 | https://www.youtube.com/watch?v=0Gew2XOuum8&&list=PLFGoYjJG \_fqo4oVsa6l\_ V-7-tzBnlulT&&index=27 | | TestNG Framework- Selenium Tutorial Part-2 | https://www.youtube.com/watch?v=0Gew2XOuum8&&list=PLFGoYjJG \_fqo4oVsa6l\_ V-7-tzBnlulT&&index=28 | | Architecture of Page Object Model (POM)  Part 1 | https://www.youtube.com/watch?v=0Gew2XOuum8&&list=PLFGoYjJG \_fqo4oVsa6l\_ V-7-tzBnlulT&&index=30 | | Architecture of Page Object Model (POM)  Part 2 | https://www.youtube.com/watch?v=0Gew2XOuum8&&list=PLFGoYjJG \_fqo4oVsa6l\_ V-7-tzBnlulT&&index=31 | | Architecture of Page Object Model (POM)  Part 3 | https://www.youtube.com/watch?v=0Gew2XOuum8&&list=PLFGoYjJG \_fqo4oVsa6l\_ V-7-tzBnlulT&&index=32 | | Generate Extent Report | https://www.youtube.com/watch?v=0Gew2XOuum8&&list=PLFGoYjJG \_fqo4oVsa6l\_ V-7-tzBnlulT&&index=34 | | Selenium+Jenkins Integration | https://www.youtube.com/watch?v=0Gew2XOuum8&&list=PLFGoYjJG \_fqo4oVsa6l\_ V-7-tzBnlulT&&index=35 | | Selenium + Jenkins + GIT Integration | https://www.youtube.com/watch?v=0Gew2XOuum8&&list=PLFGoYjJG \_fqo4oVsa6l\_ V-7-tzBnlulT&&index=36 | |

**Assignment 1**

Kindly Automate the below URL:

**Web URL**: [https://artoftesting.com/sampleSiteForSelenium](https://apc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fartoftesting.com%2FsampleSiteForSelenium&data=05%7C01%7Cvarsha.gaurav%40hcl.com%7C7accfdf45c554776d45f08db1a342894%7C189de737c93a4f5a8b686f4ca9941912%7C0%7C0%7C638132583533131127%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=gDWWLimJ8Reo7R6t2yDyPZVX1jCcdu1ITsG8mELs%2Bjc%3D&reserved=0)

**Steps**:

Click on the Link: ”This is a link”

Capture the element of Textbox & write “HCL Technologies” then click on Submit

Double click on “Double click to generate alert box” ->popup appears,click on ok

Select “Male”

Select “Automation Testing”

Select “Database Testing” in the dropdown

Click on “Generate Alert box” & ok

Click on Generate Confirm Box & select Cancel

Validate “You pressed Cancel!”

**Python Curriculum**

|  |  |  |
| --- | --- | --- |
| **Topic** | **Learning Material** | **Coding Exercises** |
| Python | [https://www.w3schools.com/python](https://apc01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.w3schools.com%2Fpython&data=05%7C01%7Cvarsha.gaurav%40hcl.com%7Cbe28b64cde2d4d11e45008dadde25414%7C189de737c93a4f5a8b686f4ca9941912%7C0%7C0%7C638066261380569818%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ik1haWwiLCJXVCI6Mn0%3D%7C3000%7C%7C%7C&sdata=IBdOTRPotldXjmWS6fXWj5uPw7RA4HcnynbUAI3%2BUIs%3D&reserved=0) | Appendix -8 (1-16) |
| Python Coding Standards(using Oops Concept) | <https://www.analyticsvidhya.com/blog/2020/09/object-oriented-programming/> |  |
| |  | | --- | | Functions of Numpy | | | | <https://www.w3schools.com/python/numpy/default.asp> |  |
| Functions of Pandas | <https://www.analyticsvidhya.com/blog/2022/07/pandas-functions-you-should-know-for-data-analysis/> |  |
| Python Lambda function and its usage | <https://www.w3schools.com/python/python_lambda.asp> |  |
| Regular Expression in Python | <https://www.tutorialspoint.com/python/python_reg_expressions.htm> |  |
| Object Relational Mapper in Python (SQLAlchemy) | <https://www.fullstackpython.com/object-relational-mappers-orms.html> |  |
| Exception Handling | <https://www.tutorialsteacher.com/python/exception-handling-in-python> |  |
| Logging in Python | <https://www.javatpoint.com/logging-in-python> |  |
| Overview of Pylint | <https://www.pylint.org/> |  |
| Multi-Threading | <https://www.studytonight.com/python/multithreading-in-python> |  |

**Appendix-8**

**1.** Write a Python program that accepts an integer (n) and computes the value of n + nn + nnn

Sample value of n is 5

Expected Result : 615

**2.** Write a Python program to accept a filename from the user and print the extension of that.

Sample filename : abc.java

Output : java

**3**. Write a Python program to accept 2 days as input in YYYYMMDD format and calculate number of days between two dates.

Sample dates : (20140702), (20140711)

Expected output : 9 days

**4**. Write a Python program to find whether a given number (accept from the user) is even or odd, print out an appropriate message to the user.

**5.**  Write a Python program to test whether a passed letter is a vowel or not.

**6**. Write a Python program to print all even numbers from a given numbers list in the sorted order and stop the printing if any numbers that come after 237 in the sequence.

Sample numbers list :

numbers = [386, 462, 47, 418, 907, 344, 236, 375, 823, 566, 597, 978, 328, 615, 953, 345, 399, 162, 758, 219, 918, 237, 412, 566, 826, 248, 866, 950, 626, 949, 687, 217, 815, 67, 104, 58, 512, 24, 892, 894, 767, 553, 81, 379, 843, 831, 445, 742, 717, 958,743, 527]

**7.** Write a Python program to count the number of each character of a given text from a text file.

**8.** Write a Python program to get all strobogrammatic numbers that are of length n.

A strobogrammatic number is a number whose numeral is rotationally symmetric, so that it appears the same when rotated 180 degrees. In other words, the numeral looks the same right-side up and upside down (e.g., 69, 96, 1001).

For example,

Given n = 2, return ["11", "69", "88", "96"].

Given n = 3, return ['818', '111', '916', '619', '808', '101', '906', '609', '888', '181', '986', '689']

**9.**Write a Python program to compute the sum of first n given prime numbers.

Input:

Input a number (n<=10000) to compute the sum:(0 to exit): 25

Sum of first 25 prime numbers: 1060

**10.** Write a Python program to find the type of the progression (arithmetic progression/geometric progression) and the next successive member of a given sequence.

An arithmetic progression (AP) is a sequence of numbers such that the difference of any two successive members of the sequence is a constant. For instance, the sequence 3, 5, 7, 9, 11, 13, . . . is an arithmetic progression with common difference 2.

On the other hand, a geometric progression (GP) is a sequence of numbers where each term after the first is found by multiplying the previous one by a fixed non-zero number called the common ratio. For example, the sequence 2, 6, 18, 54, . . . is a geometric progression with common ratio 3.

•            The minimum length of sequence should be 3. Please throw an error message if sequence is less than 3 members and exit the program.

•            The difference between any 2 members should not be zero. Please throw an error message if difference between any 2 members is zero and exit the program

•            First number of sequence should not be zero. Please throw an error message first number is 0 and exit the program

•            Throw an error message if sequence is neither arithmetic progression (AP) nor geometric progression (GP)

**11.** Write a method to return the list of longest palindromes in a given sentence. Return nil if no palindrome is found. Pass the input as a sentence to the service. Any sentence can be passed as input. A sample sentence is given below. “Madam Aviva Harrah has hurt her rotator in the noon while driving racecar”. Palindrome is a word if you reverse, it comes the same. Like Madam, aviva but reverse of word “while” is “elihw”. It is not a palindrome.

**12.** Write a Python program that accepts a comma separated sequence of words as input and prints the unique words in sorted form (alphanumerically)

**13.** Write a Python program to find the first repeated word in a given string.

**14.**A Teacher is looking to distribute Chocolates to all students in her Class. She has got packets of Chocolates of chocolates with each Packet having different Number of Chocolates.

The task is to distribute chocolate packets such that:

1. Each student gets one packet of Chocolates from the Teacher.

Write a Program for ensuring that

   The difference between the number of chocolates given to the students having a packet with maximum chocolates and student having a packet with minimum chocolates is least.

**Constraint:**  Number of Students should be equal or more than number of Packets of Chocolates. If the Number of Students is less than number of Packets of Chocolates, stop the program with an error as “Cannot distribute as Number of Packets of Chocolates is less than Number of Students”.

**Pass Input:**

Number of Students

Number of Chocolates in each Packet as an Array

**Expected Output:**

  For each test case, print in a new line that the least difference of chocolates given to a student who receives minimum Chocolates and student who receives maximum chocolates. Two Examples explaining the scenarios with expected output are given below

**Example 1:**

 Number of Packets of Chocolates: 8

Number of Chocolates in each Packet

Chocolates in Packet 1: 3

Chocolates in Packet 2: 4

Chocolates in Packet 3: 1

Chocolates in Packet 4: 9

Chocolates in Packet 5: 56

Chocolates in Packet 6: 7

Chocolates in Packet 7: 9

Chocolates in Packet 8: 12

Number of Students in Class: 5

**Output:** The least difference between the chocolates received by student who receives minimum Chocolate and the student who gets maximum chocolates is 6

**Example 2:**

Number of Packets of Chocolates: 7

Number of Chocolates in each Packet

Chocolates in Packet 1: 7

Chocolates in Packet 2: 3

Chocolates in Packet 3: 2

Chocolates in Packet 4: 4

Chocolates in Packet 5: 9

Chocolates in Packet 6: 12

Chocolates in Packet 7: 56

Number of Students in Class: 3

**Output:** The least difference between the chocolates received by student who receives minimum Chocolate and the student who gets maximum chocolates is 2

**15.**Write a Python program to get all strobogrammatic numbers that are of length n.

A strobogrammatic number is a number whose numeral is rotationally symmetric, so that it appears the same when rotated 180 degrees. In other words, the numeral looks the same right-side up and upside down (e.g., 69, 96, 1001).

For example,

Given n = 2, return ["11", "69", "88", "96"].

Given n = 3, return ['818', '111', '916', '619', '808', '101', '906', '609', '888', '181', '986', '689']

**16.**Write a Python program to compute the sum of first n given prime numbers.

Input:

Input a number (n<=10000) to compute the sum:(0 to exit): 25

Sum of first 25 prime numbers: 1060

**ETL curriculum**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Topic** | **Sub-Topic** | **Learning Material** | **Other references** | **Coding Exercises** |
| Business Intelligence | |  | | --- | |  | | <https://www.youtube.com/watch?v=CYUItcykMTI> | <https://youtu.be/qXHRmkObG8c> |  |
| Data Warehouse and ETL concept | Dimension and fact table  Data model  OLAP Cube | <https://www.youtube.com/watch?v=CYUItcykMTI> | <https://youtu.be/qXHRmkObG8c> |  |
| Informatica Introduction | Informatica Architecture  Informatica client components | <https://www.youtube.com/watch?v=CYUItcykMTI> | <https://youtu.be/qXHRmkObG8c> |  |
| Informatica Load Types | Table to table load  Flat file to table load  Table to flat file load | <https://www.youtube.com/watch?v=CYUItcykMTI> | <https://youtu.be/qXHRmkObG8c> |  |
| Transformations | Active and passive transformation  Source qualifier  Filter transformation  Expression  Transformation  Joiner transformation  Sorter transformation  Aggregator transformation  Router transformation  Rank transformation  Sequence generator transformation  Union transformation  Lookup transformation  Connected lookup transformation  Unconnected lookup transformation  Lookup policy on multiple match  Update strategy transformation | <https://www.youtube.com/watch?v=CYUItcykMTI> | <https://youtu.be/qXHRmkObG8c> |  |
| Other transformations | Java transformation | <https://www.youtube.com/watch?v=CYUItcykMTI> | <https://youtu.be/qXHRmkObG8c> |  |
| Parameters and Variables |  | <https://www.youtube.com/watch?v=CYUItcykMTI> | <https://youtu.be/qXHRmkObG8c> |  |
| Debugger |  | <https://www.youtube.com/watch?v=CYUItcykMTI> | <https://youtu.be/qXHRmkObG8c> |  |
| Slowly changing dimensions |  | <https://www.youtube.com/watch?v=CYUItcykMTI> | <https://youtu.be/qXHRmkObG8c> |  |
| Performance Tuning | Pushdown optimization  Partitioning | <https://www.youtube.com/watch?v=CYUItcykMTI> | <https://youtu.be/qXHRmkObG8c> |  |

**SSIS Curriculum:**

**1. SSIS Installation Document:**



**2 . Sql server and SSMS 2019 Installation Guide:**

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**3.Basics of SSIS:**

|  |  |  |
| --- | --- | --- |
| **Topic** | **Learning Material** | **Assignment Material** |
| Installation of Visual Studio 2019 | <https://youtu.be/0ikNnenDyNw> | Assignment 2, Assignment 3, Assignment 4 |
| Basic Concepts about ETL, Data Integration, SSIS package& Data Integration |
| Data Integration Tools available, Control Flow, Data Flow basics |
| Creating SSIS package for employees working in organization with proper visibility of control flow element and transformation elements |

**Assignment 2**

------------------------------------------- EASY--------------------------------------------------------------

1.Use expression constraints to control task flow in a package

2.Loop over files in a folder, copying those whose names contain a given string of letters.

3. Use a row count and a variable to show number of records in script.

4 .Use a Foreach loop to write workbook names to a text file.

5.Create an SSIS package to import an Excel workbook's data into a SQL Server table of songs about food.

**------------------------------------------------------------------------------------------------------**

**Average Difficulty**

1.Use a data conversion task to import Excel text data to SQL Server varchar columns.

2.Use a data flow task to export CSV records of UK built-up areas to a SQL Server table

3. Use a script component to add a column to a set of rows.

4 .Create an error-handler for a task to show a message in script.

5.Use a dynamic connection to loop over Excel workbooks, combining their rows into a SQL Server table.

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Difficult

1 .Use a script task within a loop to accumulate the size of all files.

2. Use a Foreach loop to create a text file for each group of data.

3 .Loop over an ADO schema rowset enumerator to import all of the worksheets in an Excel workbook.

4 .Use 3 variables and 3 row counts, with a percentage sampling task.

5 .Get the most recently changed file using a script task to loop over files.

|  |  |  |
| --- | --- | --- |
|  |  | **Assignment 3** |
| **Build an SSIS package using SQL & External file based on below scenario** | | | |

I am a store manager and i want to segregate in stock and out of stock record of perishable and non-perishable product For this i want to create a package that helps me to achieve this this should run from month to month  , so that i get report every month of in stock and out of stock products.

\* Build a SQL catalog tables with following columns

-id

-name

-description

-created date

-category(can be perishable or non-perishable use “PSH” for perishable and “NPSH” for non-perishable)

-quantity

-price

-isInStock

-IsExecuted(but default is should be false)

-updatedDate

Note-should have atleast 50+records

\*Export this table to Excel from SQL using SSIS

\*Move all PSH to tempPSH\_catalog table using SSIS

\*Move all NPSH to tempNPSH-catalog table using SSIS

\*Take all the products from these tables which is available in the stock and merge it to finalCatalog table using SSIS. Update IsExecuted, updated\_date

\* All the out of stock product should be moved to out of stock table named error\_outOfStock using SSIS.Update isExecuted, updated\_date

\* Send an email to yourself with all the records (Id, Name) for out of stock.

Note- All the process should be clearly executed

- Error handling should be clearly visible

-Naming conventions should be properly used and with proper case

**Assignment 4**

1. Load data from file to table based on below condition Age <= 45
2. Load data from excel to 2 different tables based on below condition;
3. In table 1, all 'Female' records
4. In table 2, all 'Male' records

3.Load data from excel to csv based on below condition;

1.In 1st csv, all records whose firstname starts with 'M'

2. In 2nd csv, all records who belongs to Noida



**DP500**

|  |  |
| --- | --- |
| **Topics** | **Learning Material** |
| Introduction to data analytics on Azure | <https://learn.microsoft.com/en-us/training/paths/introduction-data-analytics-azure/> |
| Govern data across an enterprise | <https://learn.microsoft.com/en-us/training/paths/govern-data-across-enterprise/> |
| Model, query, and explore data in Azure Synapse | <https://learn.microsoft.com/en-us/training/paths/model-query-explore-data-for-azure-synapse/> |
| Prepare data for tabular models in Power BI | <https://learn.microsoft.com/en-us/training/paths/prepare-data-for-tabular-models-power-bi/> |
| Design and build tabular models | <https://learn.microsoft.com/en-us/training/paths/design-build-tabular-models/>  <https://youtu.be/2R77ss3_8Ug>  <https://youtu.be/TA7tkqVt-Zc> |
| Implement advanced data visualization techniques by using Power BI | <https://learn.microsoft.com/en-us/training/paths/implement-advanced-data-visualization-techniques/> |
| Implement and manage an analytics environment | <https://learn.microsoft.com/en-us/training/paths/implement-manage-analytics-environment/> |
| Manage the analytics development lifecycle | <https://learn.microsoft.com/en-us/training/paths/manage-analytics-development-lifecycle/> |

**Certification Process**

**IKM and Mode 2**: To take IKM and Mode 2, We need to Contact Raghavendra Kura. Once we finish the curriculum, we need to select one IKM curriculum and send it to Raghavendra. Once IKM is enabled, details are shared with the person taking it.

**Microsoft certification**: To take the azure certification, we need to finish Microsoft curriculum first and then booked the slot as per the availability for certification.

**Some best practices that we followed**

1) Having daily calls with each team members to discuss all the issues.

2) Having mentor for each stream and mentor connecting with team either daily or twice in a week as per the availability so that all technical issues are resolved on priority.

3) Having teams group where team can reach to mentor or SM for any issues immediately.

4) All curriculum included hands-on questions or followed by face-to-face discussion by the mentor.

5) Having assessment in place that kinds of give more sincerity towards learning.

**Challenges**

1) It’s difficult to motivate mentor to connect with the team as mentor also has commitments towards their project.

2) Creating schedule, having all reference material on time so that program does not get delayed.

**Recommendations for improving effectiveness of the program**