

LITHAN

Development of website for a Training Organization

Module Project

Module: Front End Web Development

Course: ITSF - Front End Web Development

Start Date : 10/06/2022

End Date : 17/06/2022

Submission Date : 18/06/2022

Learner Name : Chathushi

Enrollment ID : Jayarathna

Presentation Date :

Version Number	Effective Date of release	Summary of Included Changes	Author
1	4 th March 2016	First Edition	Satya CVS
2	7 th April 2016	Changed for Module 2	Shrinivas K R
3	2 nd April 2018	Changed for RQF	Shrinivas K R

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1. Project Definition

❑ Project Definition

This project is about the MCQ System. This MCQ system must create using Java because Java is an excellent choice for developing systems. The education market wants to expand their market into the Information Technology subject areas for the part of their development. Therefore, their internship training is required to develop and develop software to assess subject knowledge. So, the company provided the MCQ system.

❑ Proposed Solutions

- Add Input user ID and password
- Develop a system like when finished answering one set of MCQs, the other MCQ sets will appear

2. Project Deliverables

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❑ Project Deliverables

- Source Codes
- MCQ folder with 4 CSV files
- Project Report
- Project Presentation

❑ List of Evidence

Name	Date modified	Type	Size
.idea	6/16/2022 10:36 AM	File folder	
out	6/15/2022 2:08 PM	File folder	
src	6/16/2022 10:35 AM	File folder	
untitled1	6/12/2022 9:16 PM	IML File	1 KB

Name	Date modified	Type	Size
controlstructures	6/12/2022 9:31 PM	Microsoft Excel C...	2 KB
css	6/12/2022 9:41 PM	Microsoft Excel C...	2 KB
html	6/14/2022 11:12 AM	Microsoft Excel C...	2 KB
JavaBasics	6/12/2022 9:12 PM	Microsoft Excel C...	1 KB

Name	Date modified	Type	Size
MCQ	6/15/2022 2:08 PM	File folder	
Main	6/16/2022 10:35 AM	IntelliJ IDEA Educa...	2 KB
MCQ	6/15/2022 6:16 PM	IntelliJ IDEA Educa...	3 KB

3. Project Milestones & Tasks

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Project Task ID	Project Task Description	Project Milestone ID
1	Create Requirement Specification	1
2	Develop Algorithm	1
3	Analysis and Design	2
4	Create the Application	2
5	Test the Application	3

☐ Technical Environment & Tools used

- IntelliJ
- JDK
- Microsoft Word
- Microsoft Excel
- Microsoft PowerPoint
- Flow.Driwo

☐ List of references

- [w3school.com](https://www.w3school.com)
- [youtube.com](https://www.youtube.com)
- Geeksforgeek.org

5. Development Tools

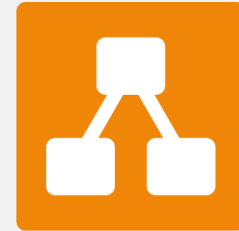
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IntelliJ



MS Excel



Flow.Drawio



MS Word

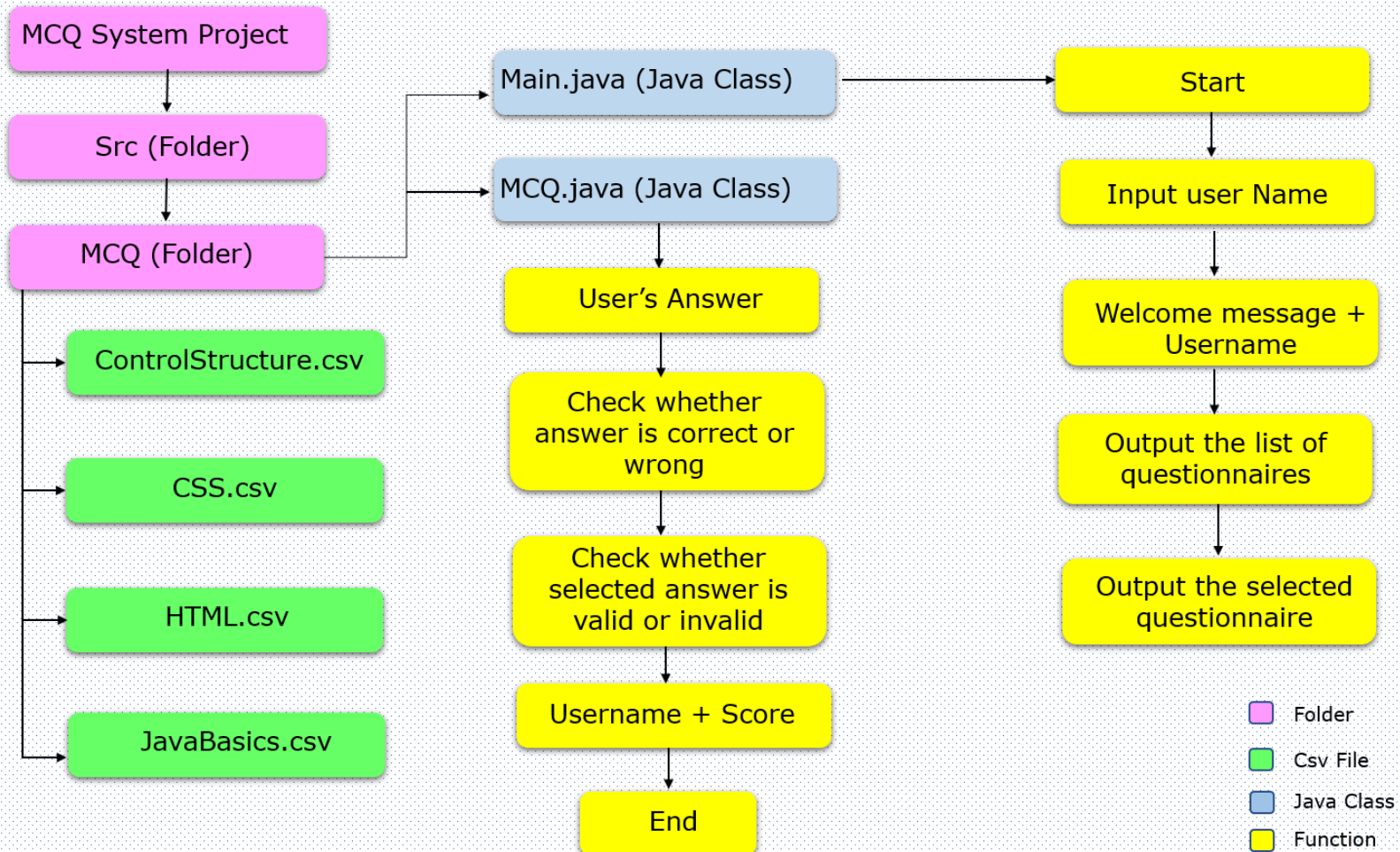


MS PowerPoint



JDK

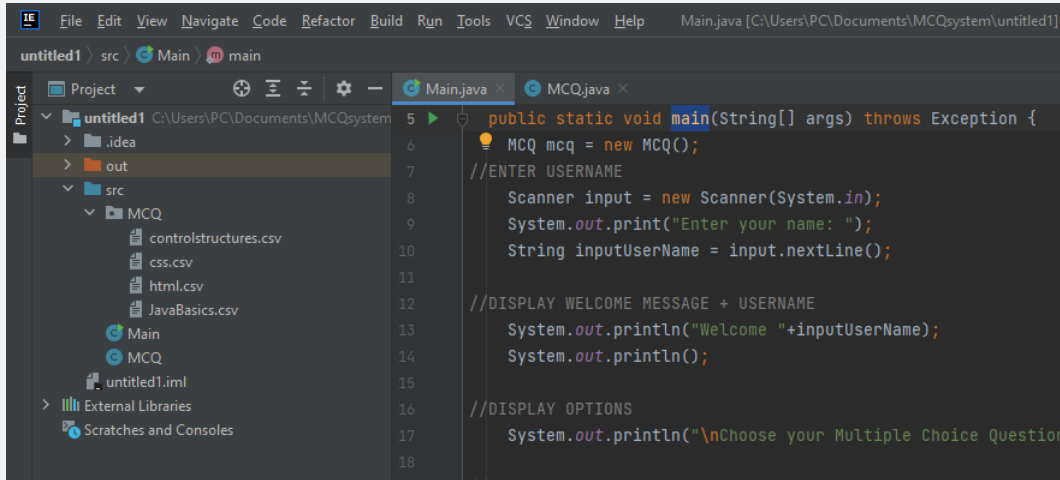
6. Project Design



7.Classes & Methods

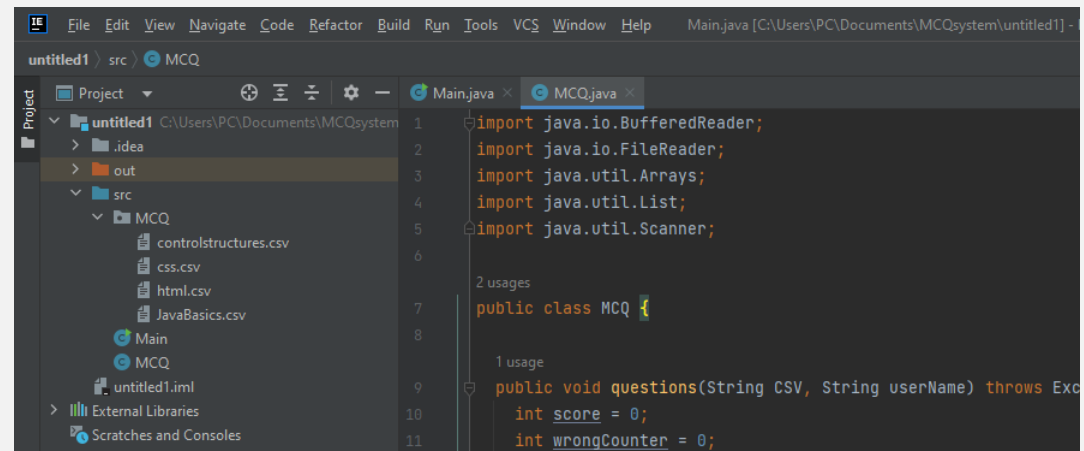
❑ Classes

01) Main Class



```
File Edit View Navigate Code Refactor Build Run Tools VCS Window Help Main.java [C:\Users\PC\Documents\MCQsystem\untitled1] -
untitled1 > src > MCQ > main
Project
  Project
  > untitled1 C:\Users\PC\Documents\MCQsystem
    > .idea
    > out
    > src
      > MCQ
        controlstructures.csv
        css.csv
        html.csv
        JavaBasics.csv
        Main
        MCQ
        untitled1.iml
    > External Libraries
    > Scratches and Consoles
  Main.java x MCQ.java x
5 public static void main(String[] args) throws Exception {
6     MCQ mcq = new MCQ();
7     //ENTER USERNAME
8     Scanner input = new Scanner(System.in);
9     System.out.print("Enter your name: ");
10    String inputUserName = input.nextLine();
11
12    //DISPLAY WELCOME MESSAGE + USERNAME
13    System.out.println("Welcome "+inputUserName);
14    System.out.println();
15
16    //DISPLAY OPTIONS
17    System.out.println("\nChoose your Multiple Choice Question
18
```

02)MCQ Class



```
File Edit View Navigate Code Refactor Build Run Tools VCS Window Help Main.java [C:\Users\PC\Documents\MCQsystem\untitled1] -
untitled1 > src > MCQ
Project
  Project
  > untitled1 C:\Users\PC\Documents\MCQsystem
    > .idea
    > out
    > src
      > MCQ
        controlstructures.csv
        css.csv
        html.csv
        JavaBasics.csv
        Main
        MCQ
        untitled1.iml
    > External Libraries
    > Scratches and Consoles
  Main.java x MCQ.java x
1 import java.io.BufferedReader;
2 import java.io.FileReader;
3 import java.util.Arrays;
4 import java.util.List;
5 import java.util.Scanner;
6
7 2 usages
8 public class MCQ {
9
10 1 usage
11 public void questions(String CSV, String userName) throws Exc
12     int score = 0;
13     int wrongCounter = 0;
```

7.Classes & Methods

❑ Methods

01) Generate File Names

```
static void generateFileName(File[] listOfFile) {  
    for (File listOfFile : listOfFile) {  
        String fileName = listOfFile.getName();  
        int extension = fileName.lastIndexOf( str: ".");  
        if (extension > 0) {  
            fileName = fileName.substring(0, extension);  
            if (listOfFile.isFile()) {  
                System.out.println(fileName.toLowerCase());  
            }  
        }  
    }  
}
```

8. Steps from coding to Execution

❑ Application execution methods

JRE – Java Runtime Environment

Java Runtime Environment is a layer of software that runs on a computer's operating system software and provides class libraries and other resources needed to execute a specific java program.

It runs on any device supporting the java platform a& It is the topmost layer of the machine's OS

JIT – Just in Time compiler

JIT in Java is a mandatory part of JVM (Java Virtual Machine). It speeds up activation performance many times more than the previous level

8. Steps from coding to Execution

The way that runs the program

Step 1 – Obtain user input using the “Scanner”

```
Scanner input = new Scanner(System.in);  
System.out.print("Enter your name : ");  
String inputUserName = input.nextLine();
```

Step 2 – Print the welcome message + username

```
Scanner input = new Scanner(System.in);  
System.out.print("Enter your name : ");  
String inputUserName = input.nextLine();  
System.out.println("Welcome "+inputUserName);  
System.out.println();
```

8. Steps from coding to Execution

Step 3 – Read the CSV file

```
FileReader fr = new FileReader( fileName: "src/MCQ/" + CSV + ".csv");
```

Step 4 – output multiple question sets

```
System.out.println();  
System.out.println("\nChoose your Multiple Choice Question Set. The Options are : ");  
File folder = new File( pathname: "src/MCQ");  
File[] listOfFiles = folder.listFiles();  
if (listOfFiles != null) {  
    generateFileName(listOfFiles);  
}
```

```
static void generateFileName(File[] listOfFiles) {  
    for (File listOfFile : listOfFiles) {  
        String fileName = listOfFile.getName();  
        int extension = fileName.lastIndexOf( str: ".");  
        if (extension > 0) {  
            fileName = fileName.substring(0, extension);  
            if (listOfFile.isFile()) {  
                System.out.println(fileName.toLowerCase());  
            }  
        }  
    }  
}
```

8. Steps from coding to Execution

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Step 5 – output questions that are selected and multiple choice

```
System.out.println(listMcqStr.get(0));  
for (int i = 1; i < 5; i++) {  
    System.out.println(listMcqStr.get(i));  
}
```

Step 6 – Input answers

```
// User Answer  
System.out.print("Your Answer : ");  
String userAnswer = sc.nextLine().toUpperCase();
```

Step 7 – Check user's answer is valid or invalid

```
boolean validAnswer = false;  
while (!validAnswer) {  
    if (userAnswer.equals("A") || userAnswer.equals("B") || userAnswer.equals("C") || userAnswer.equals("D")) {  
        validAnswer = true;  
    } else {  
        System.out.println("Please select the available answer");  
        System.out.print("Your Answer : ");  
        userAnswer = sc.nextLine().toUpperCase();  
    }  
}
```

8. Steps from coding to Execution

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Step 7 – Check user's answer is correct or wrong

```
System.out.println("\nYour Answer is : " + userAnswer);
String correctAnswer = listMcqStr.get(5);

if (userAnswer.equals(correctAnswer.substring(0, 1))) {
    System.out.println("Your answer is correct!");
    score++;
} else {
    System.out.println("Wrong Answer. The Correct Answer is " + correctAnswer);
    wrongCounter++;
}
System.out.println();
}
```

Step 8 – Calculate user score

```
System.out.println(userName + ", you answered " + score
    + " Questions Right, " + wrongCounter + " Questions Wrong for a Total of 10 Questions. You scored "
    + (score * 10)
    + "%");
}
```


8. Steps from coding to Execution

The output of the Java Code:-

```
Enter your name: Chathu
Welcome Chathu

Choose your Multiple Choice Question Set. The Options are : |
controlstructures
css
html
javabasics
Mention your choice : cs
Please type valid choice as mentioned
Mention your choice : css
1.CSS Stands for...
A.Color and style sheets
B.Cascading style sheets
C.Cascade style sheets
D.None of above
Enter your answer : B

Your Answer is : B
Your answer is correct!

2.What is the property used to change the bakground color of an element?
A.color
B.background-color
C.bgcolor
D.All of above
Enter your answer : B

Your Answer is : B
Your answer is correct!
```

Run Control | Run | TODO | Problems | Terminal | Services | Build

up-to-date (7 minutes ago)

```
3.What is the selector used to select the elements that do not match the selectors?
A.:!selector
B.:not selector
C.:emptyselector
D.None of above
Enter your answer : F
Please select the valid answer
Enter your answer : B

Your Answer is : B
Your answer is correct!

4.Which property used to add shadows to the text?
A.text-shadow
B.text-storke
C.text-decoration
D.text-overflow
Enter your answer : C

Your Answer is : C
Wrong Answer. The Correct Answer is A.text-shadow

5.Whta is the corret syntax to select all paragagraph elements in a div element?
A.p
B.div p
C.div#p
D.div-p
Enter your answer : B

Your Answer is : B
Your answer is correct!
```

8. Steps from coding to Execution

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6.CSS property used to make the text bold is...

- A.font-weight:bold
- B.font:bold
- C.weight:bold
- D.style:bold

Enter your answer : A

Your Answer is : A

Your answer is correct!

7.HTML attribute used to define the internal stylesheet is..

- A.<script>
- B.<line>
- C.style
- D.<style>

Enter your answer : D

Your Answer is : D

Your answer is correct!

8.HTML attribute used to define the inline style is...

- A.class
- B.style
- C.styles
- D.None of above

Enter your answer : B

Your Answer is : B

Your answer is correct!

9.What is the correct syntax to give a line over test?

- A.text-decoration:none

9.What is the correct syntax to give a line over test?

- A.text-decoration:none
- B.text-decoration:line-through
- C.text-decoration:underline
- D.text-decoration:overline

Enter your answer : D

Your Answer is : D

Your answer is correct!

10.Which type of CSS is used in below code?

- A.Internal css
- B.External css
- C.Inline css
- D.None of above

Enter your answer : C

Your Answer is : C

Your answer is correct!

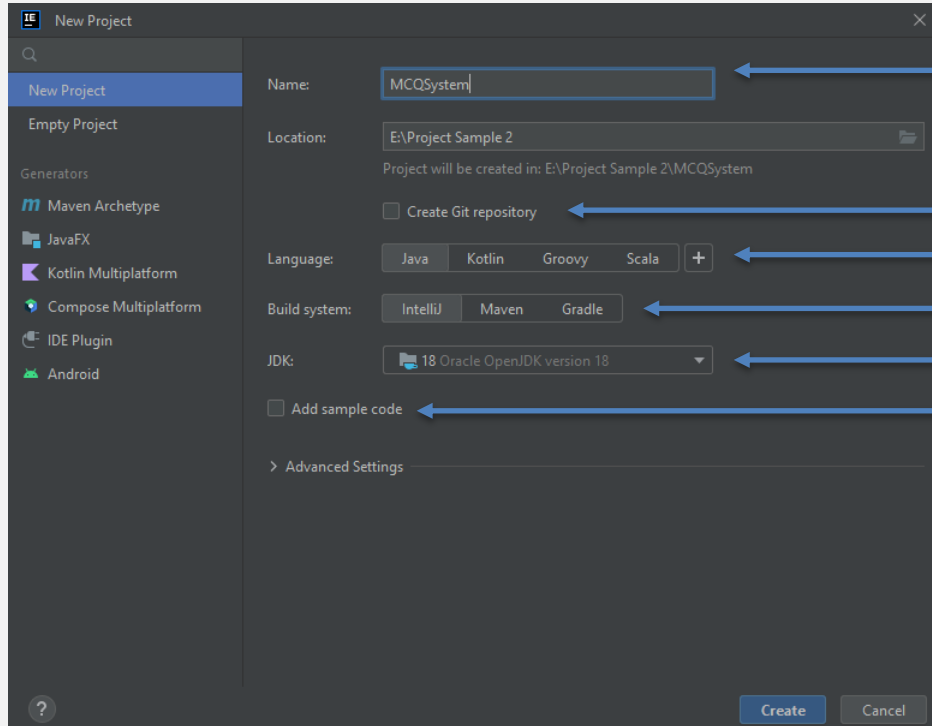
Chathu, you answered 9 Questions Right, 1 Questions Wrong for a Total of 10 Questions. You scored 90%

Process finished with exit code 0

9. Development Process

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Step 1 – Open IntelliJ & Click New Project



Type project name without spacing

Select location to save project

If need create GIT repository, put a tick

Select language as "JAVA"

Select Build System as "IntelliJ"

Select JDK

Add tick to get sample code

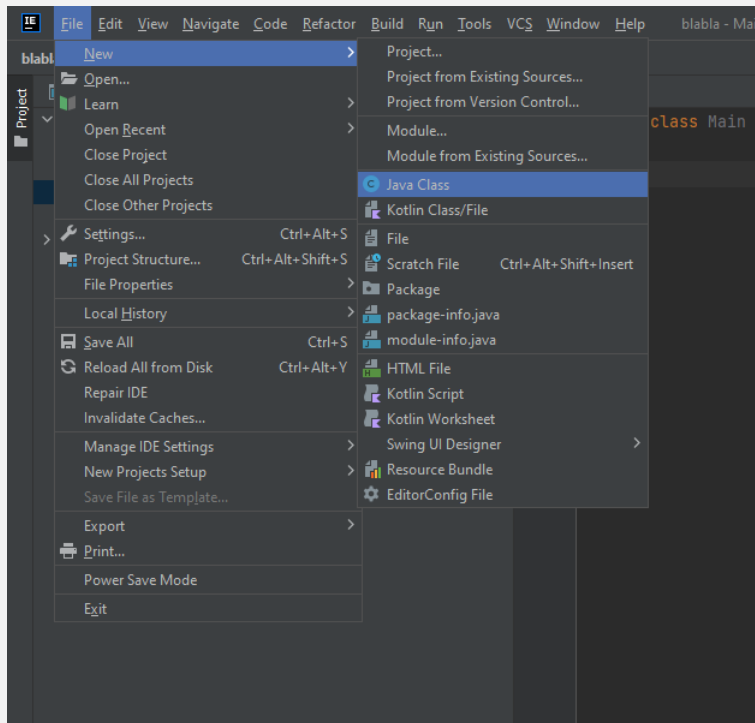
Click create

9. Development Process

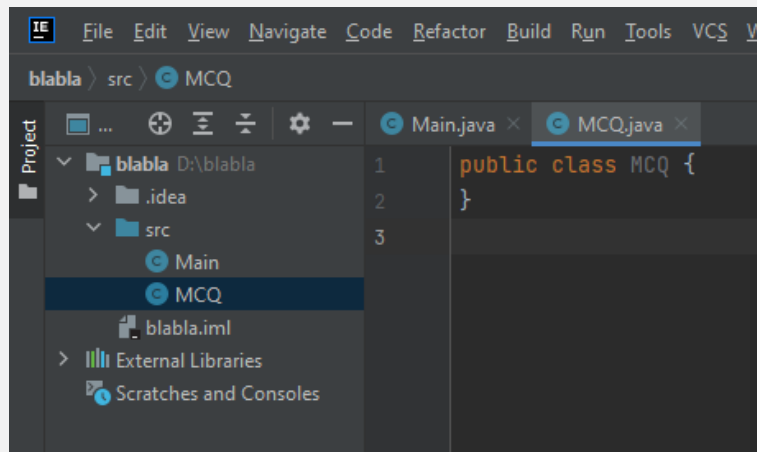
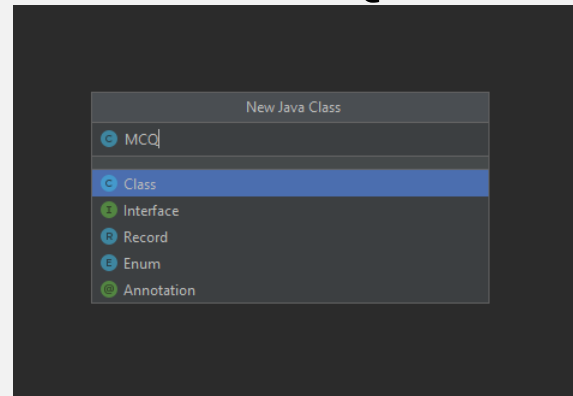
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Step 2 – Create Java class

01) Click "**File > New > Java Class**" on the top left corner



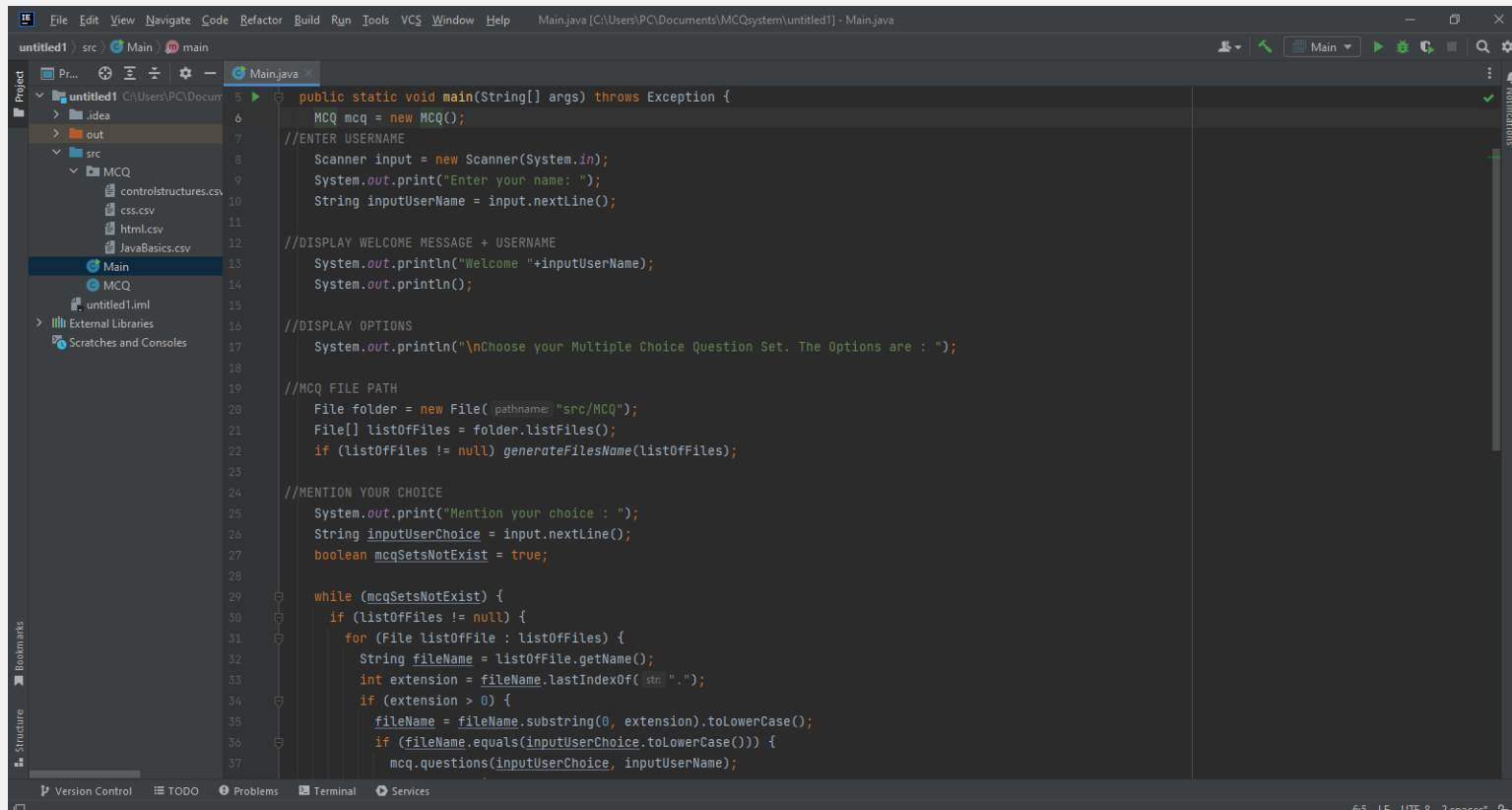
02) Create a Java Class Named MCQ



9. Development Process

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Step 3 – Code the Program



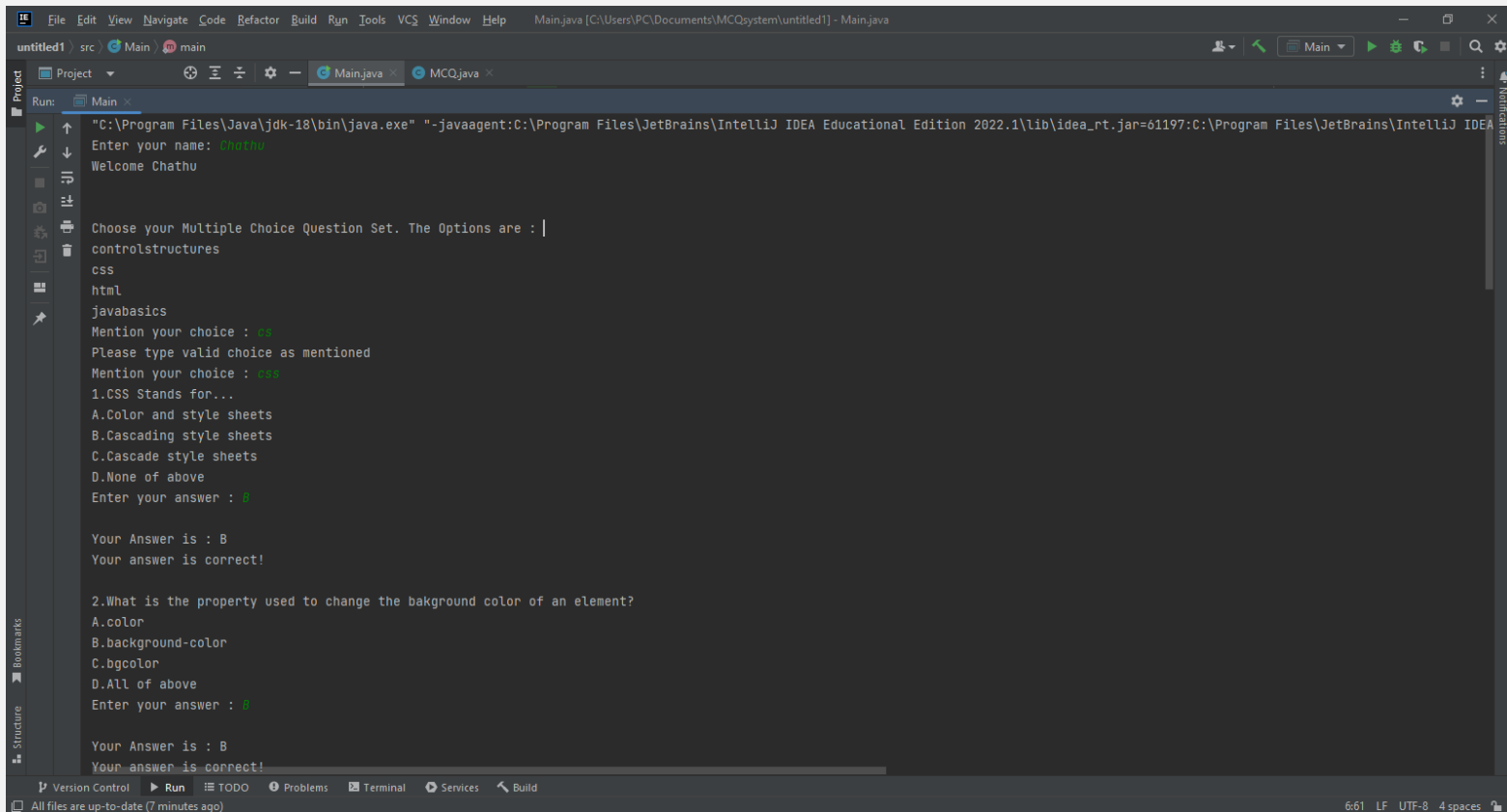
The screenshot shows an IDE with a project named 'untitled1'. The project structure includes a 'src' directory with a 'MCQ' package containing 'Main.java'. The code in 'Main.java' is as follows:

```
5 public static void main(String[] args) throws Exception {
6     MCQ mcq = new MCQ();
7     //ENTER USERNAME
8     Scanner input = new Scanner(System.in);
9     System.out.print("Enter your name: ");
10    String inputUserName = input.nextLine();
11
12    //DISPLAY WELCOME MESSAGE + USERNAME
13    System.out.println("Welcome " + inputUserName);
14    System.out.println();
15
16    //DISPLAY OPTIONS
17    System.out.println("\nChoose your Multiple Choice Question Set. The Options are : ");
18
19    //MCQ FILE PATH
20    File folder = new File( pathname: "src/MCQ");
21    File[] listOffiles = folder.listFiles();
22    if (listOffiles != null) generateFileName(listOffiles);
23
24    //MENTION YOUR CHOICE
25    System.out.print("Mention your choice : ");
26    String inputUserChoice = input.nextLine();
27    boolean mcqSetsNotExist = true;
28
29    while (mcqSetsNotExist) {
30        if (listOffiles != null) {
31            for (File listOfFile : listOffiles) {
32                String fileName = listOfFile.getName();
33                int extension = fileName.lastIndexOf( ".");
34                if (extension > 0) {
35                    fileName = fileName.substring(0, extension).toLowerCase();
36                    if (fileName.equals(inputUserChoice.toLowerCase())) {
37                        mcq.questions(inputUserChoice, inputUserName);
```

9. Development Process

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Step 4 – Run Program



The screenshot shows the IntelliJ IDEA IDE with a Java program running. The main window displays the output of the program, which is a multiple-choice quiz. The program prompts the user to enter their name, then asks them to choose a topic from a list of options. The user has entered 'Chathu' and chosen 'css'. The program then asks for the answer to a question about CSS, and the user has entered 'B'. The program confirms that the answer is correct.

```
Run: Main x
"C:\Program Files\Java\jdk-18\bin\java.exe" "-javaagent:C:\Program Files\JetBrains\IntelliJ IDEA Educational Edition 2022.1\lib\idea_rt.jar=61197:C:\Program Files\JetBrains\IntelliJ IDEA
Enter your name: Chathu
Welcome Chathu

Choose your Multiple Choice Question Set. The Options are : |
controlstructures
css
html
javabasics
Mention your choice : css
Please type valid choice as mentioned
Mention your choice : css
1.CSS Stands for...
A.Color and style sheets
B.Cascading style sheets
C.Cascade style sheets
D.None of above
Enter your answer : B

Your Answer is : B
Your answer is correct!

2.What is the property used to change the bakground color of an element?
A.color
B.background-color
C.bgcolor
D.All of above
Enter your answer : B

Your Answer is : B
Your answer is correct!
```

10.Coding Standards

01) Naming Conventions – The Java Naming Convention is a set of rules that you must follow when deciding what to identify your identities, such as class, package, variable, constant, method

```
static void generateFileName(File[] listOfFiles) {  
    for (File listOfFile : listOfFiles) {  
        String fileName = listOfFile.getName();  
        int extension = fileName.lastIndexOf( str: ".");  
        if (extension > 0) {  
            fileName = fileName.substring(0, extension);  
            if (listOfFile.isFile()) {  
                System.out.println(fileName.toLowerCase());  
            }  
        }  
    }  
}
```

```
System.out.println(userName + ", you answered " + score  
    + " Questions Right, " + wrongCounter + " Questions Wrong for a Total of 10 Questions. You scored "  
    + (score * 10)  
    + "%");  
}
```

10.Coding Standards

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02) **Comments** – Comment can be used to explain Java code and make it more readable & Can easily find the coding sections

```
//ENTER USERNAME
Scanner input = new Scanner(System.in);
System.out.print("Enter your name: ");
String inputUserName = input.nextLine();

//DISPLAY WELCOME MESSAGE + USERNAME
System.out.println("Welcome "+inputUserName);
System.out.println();

//DISPLAY OPTIONS
System.out.println("\nChoose your Multiple Choice Question Set. The Options are : ");

//MCQ FILE PATH
File folder = new File( pathname: "src/MCQ");
File[] listOfFiles = folder.listFiles();
if (listOfFiles != null) generateFileName(listOfFiles);

//MENTION YOUR CHOICE
System.out.print("Mention your choice : ");
String inputUserChoice = input.nextLine();
boolean mcqSetsNotExist = true;
```

03) **Maintain Indentation** – It is like formatting. It's easy to edit code, and shows the logic of the program in a well-organized way, making it easy for other users to read the code

04) **Maintain white space** – It is like formatting. It's easy to edit code, shows the logic of the program in a well organized way, making it easy for other users to read the code

Importance of Coding Standards

- Easy to find Code sections
- Reduce many problems & the risk of project failures
- Find and solve security issues

11.Milestone Feedback & Action taken

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Project Task ID	Milestone Feedback	Action Taken
1	Revise Project Report commented parts	yes
2	Revise Project Presentation commented parts	yes
3	Create flow chart advanced	yes

12.Project Result

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Output of the Java code (When the user select CSS,)

Input User Name →

Welcome message + Username →

Display Multiples choice question set

When user input invalid option →

Display Selected MCQs set

If user input invalid answer →

```
Enter your name: Chathu
Welcome Chathu

Choose your Multiple Choice Question Set. The Options are : |
controlstructures
css
html
javabasics
Mention your choice : cs
Please type valid choice as mentioned
Mention your choice : css
1.CSS Stands for...
A.Color and style sheets
B.Cascading style sheets
C.Cascade style sheets
D.None of above
Enter your answer : B

Your Answer is : B
Your answer is correct!

2.What is the property used to change the background color of an element?
A.color
B.background-color
C.bgcolor
D.All of above
Enter your answer : B

Your Answer is : B
Your answer is correct!
```

12.Project Result

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```
3.What is the selector used to select the elements that do not match the selectors?
A.:!selector
B.:not selector
C.:emptyselector
D.None of above
Enter your answer : F
Please select the valid answer
Enter your answer : B

Your Answer is : B
Your answer is correct!

4.Which property used to add shadows to the text?
A.text-shadow
B.text-stroke
C.text-decoration
D.text-overflow
Enter your answer : C

Your Answer is : C
Wrong Answer. The Correct Answer is A.text-shadow

5.What is the correct syntax to select all paragraph elements in a div element?
A.p
B.div p
C.div#p
D.div-p
Enter your answer : B

Your Answer is : B
Your answer is correct!
```

← When user input correct answer

← When user input wrong answer

12.Project Result

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```
6.CSS property used to make the text bold is...
A.font-weight:bold
B.font:bold
C.weight:bold
D.style:bold
Enter your answer : A

Your Answer is : A
Your answer is correct!

7.HTML attribute used to define the internal stylesheet is..
A.<script>
B.<line>
C.style
D.<style>
Enter your answer : D

Your Answer is : D
Your answer is correct!

8.HTML attribute used to define the inline style is...
A.class
B.style
C.styles
D.None of above
Enter your answer : B

Your Answer is : B
Your answer is correct!

9.What is the correct syntax to give a line over test?
A.text-decoration:none
```

```
9.What is the correct syntax to give a line over test?
A.text-decoration:none
B.text-decoration:line-through
C.text-decoration:underline
D.text-decoration:overline
Enter your answer : D

Your Answer is : D
Your answer is correct!

10.Which type of CSS is used in below code?
A.Internal css
B.External css
C.Inline css
D.None of above
Enter your answer : C

Your Answer is : C
Your answer is correct!

Chathu, you answered 9 Questions Right, 1 Questions Wrong for a Total of 10 Questions. You scored 90%

Process finished with exit code 0
```

Print "No of correct answers + No of wrong answers + Score"

12.Project Result

Output of the Java code (When the user select HTML,)

Display HTML MCQs

```
Enter your name: Chathu
Welcome Chathu

Choose your Multiple Choice Question Set. The Options are :
controlstructures
css
html
javabasics
Mention your choice : html
1.HTML stands for
A.Hyper Text Markup Language
B.Holistick Technical Method Library
C.Hyper Tax Makes Line
D.None of the above
Enter your answer : A

Your Answer is : A
Your answer is correct!

2.Who is developer of HTML?
A.Charles Dawin
B.Robert Cailliau
C.Tim Thompson
D.Tim Berners-Lee
Enter your answer : D

Your Answer is : D
Your answer is correct!

3.HTML was first proposed in the year__
```

```
3.HTML was first proposed in the year__
A.2000
B.1995
C.1985
D.1990
Enter your answer : D

Your Answer is : D
Your answer is correct!

4.To create HTML pages you need what?
A.Text Editor
B.Web browser
C.Balsamiq Wireframe
D.Both a and b
Enter your answer : D

Your Answer is : D
Your answer is correct!

5.Which is the correct HTML tag to line break?
A.<bd>
B.<bl>
C.<br>
D.<b>
Enter your answer : C

Your Answer is : C
Your answer is correct!
```

```
6.URL is?
A.Uniform resource locator
B.Uniform read locator
C.Uniform reaserch locator
D.United research locator
Enter your answer : A

Your Answer is : A
Your answer is correct!

7.Sets of tags using in table?
A.<bl><br><bd>
B.<tr><th><td>
C.<th><tr><br>
D.<bl><bd><th>
Enter your answer : B

Your Answer is : B
Your answer is correct!

8.What is the tag that the link strat?
A.<i>
B.<body>
C.<li>
D.<a>
Enter your answer : A

Your Answer is : A
Your answer is correct!

9.What is the tag that used to define emp
```

12.Project Result

Output of the Java code (When the user select Control Structure)

Display Control Structure MCQs

```
Enter your name: Chathu
Welcome Chathu

Choose your Multiple Choice Question Set. The Options are :
controlstructures
css
html
javabasics
Mention your choice : controlstructures
1.How many choices are possible when using a single if-else statement?
A.1
B.3
C.2
D.4
Enter your answer : C

Your Answer is : C
Your answer is correct!

2.Which of these is used to add a third or fourth etc outcome to a scenario?
A.otherwise
B.if
C.else if
D.elsa
Enter your answer : C

Your Answer is : C
Your answer is correct!

3.How many "else" statements can you pair with a single "if" statement
```

```
A.1
B.<20
C.<10
D.As many as is needed
Enter your answer : A

Your Answer is : A
Your answer is correct!

4.How many "else if" links can you have in an "if else if" ladder?
A.<10
B.<30
C.<20
D.As many as is needed
Enter your answer : D

Your Answer is : D
Your answer is correct!

5.Which of the following for loops will be an infinite loop?
A.for(;;)
B.for(i = 0; ;i++)
C.for(i = 0;i < 1;i--)
D.All of the above
Enter your answer : D

Your Answer is : D
Your answer is correct!

6.What is the selection statements test only for equality?
```

12.Project Result

Output of the Java code (When the user select Java Basics)

Display Java Basics MCQs

```
Enter your name: Chathu
Welcome Chathu

Choose your Multiple Choice Question Set. The Options are :
controlstructures
css
html
javabasics
Mention your choice : javabasics
Please type valid choice as mentioned
Mention your choice : javabasics
1.Inventor of Java Programming is..?
A.Guido Van Rossum
B.Dennis Ritchie
C.James Gosling
D.Bjarne Stroustrup
Enter your answer : C

Your Answer is : C
Your answer is correct!

2.Is Java case sensitive?
A.Depends on compiler
B.True
C.False
D.May be True or Flase
Enter your answer : B
```

```
3.Which year Java released?
A.1196
B.1993
C.1995
D.1991
Enter your answer : C

Your Answer is : C
Your answer is correct!

4.Which is the advantage of java?
A.Portable
B.Simple
C.Secure
D.All of above
Enter your answer : D

Your Answer is : D
Your answer is correct!

5.What is used to compile debug execute the Java Programs?
A.JDK
B.JRE
C.JIT
D.JVM
Enter your answer : A

Your Answer is : A
Your answer is correct!

6.There are ... Datatype in java
```

❑ Project Improvements

- Add 2 attempts for MCQs
- Input ID
- Input password
- Develop a system like when finished answering one sets of MCQs, the other MCQ sets will appear