Problem Statement: To build a command-line interface quiz generating application in java for quizzes on various topics.

Objectives:

- User can create quizzes and add questions with multiple choice questions, their answers and take quiz to test the knowledge.
- Utilize data-structures to store quiz's question and answers with correct option.
- Allow users to take quizzes and display results with scores and feedback

Theory:

Arrays:

An can be defined as the contiguous block of memory allocation. It can also be called as a non-primitive datatype that stores multiple values. This data structure stores the memory address of the value referenced to it for accommodating multiple values

Here we have used string array;

String[] array_name=new String{"a","b","c",…..};

OR

String[] array_name=new string[size];

Linear search:

This search has the time complexity of O(n) which is suitable for the small arrays, like in quiz application. We need to search correct unique option assigned to that question into the answer array.

Counter Variable:

A counter variable is used to increment the value when any condition is satisfied. In our program count variable count is used for increment the value by 1 for every correct answer.

```
Say,  count=0;
        If(True){
count=count+1
} else {  // if False
count=count+0;
}
```

Switch-case:

A switch-case is a decision statement that is used for choosing the appropriate options from the given menu like configuration. After choosing the selection we get the display of more options on the command-line interface.

```
String a=”value”;
switch(a){
        case “a” :
         Statements;
       break;
        case “b” :
          Statements;
        break;
        case “c” :
          Statements;
      default:
          Statements;
}
```

Nested switch case:

This decision statement is used in scenarios where there are multiple sub- categories of one topic like say in our case making quiz application for current affairs includes vast sub topics like “politics”, “economics” and “sports”.

```
String a=”value”;
switch(a){
 case “a” :
        statements;
        break;
          String a2=”value2”;
            switch(a2){
            case “a2”
```

```
        statements;
        break;
case  “b” :
        statements;
break;
}
}
```

contains():

contains() is a predefined method for string method for finding whether the given character or symbol is present in the given string or not. In our program we have used it to mark the correct option among incorrect options into the answers array. Let’s say an

String[] array={“b4”,”a4*”,”c4”};

arr[1].contains(“*”); // this will return ‘true’ because ‘ * ’ symbol is present in element at index i=1 i.e a4*.

Tools/ Libraries

Eclipse-IDE for writing code, refactoring and editing

MS-Word for creating documentation.

Packages/Libraries used in program:

util(utility package):

java.util.Scanner;

The scanner class is a predefined class for taking input direct from the user via keyboard.

java.util.Random;

This class is used for inducing randomness into the output applying some random function to our data-structure, like in case of atring array for selecting random option for generating/ displaying the questions from already created ‘Question Set’.

PROGRAM:

```
package Task1.QuizGenerator;
import java.util.Random;
import java.util.Scanner;
public class QuizAppCurrentAffairs {


    public static void main(String[] args) {
        System.out.println("Generate Topic Based Question...");
        System.out.println("You will randomly get a topic! So enjoy the quiz!");

        final String[] category = {"economics", "sports", "politics","freewill"};
        Random random = new Random();
        int index = random.nextInt(category.length);
        String selected_Category=category[index];

        switch(selected_Category)
        {
        case "economics":
        Scanner sc=new Scanner(System.in);

        String[] arr= {"a","e","g"};
            int count=0;

        String[] Question1 = {"What is India's current GDP?", "a.3.42 Lakh crores",
        "b.2.14 Lakh Crores","c.1.69 Lakh Crores"};

        for(int i=0; i<Question1.length; i++) {
        System.out.println(Question1[i]);
```

```
        }


String ans1=sc.nextLine();

switch(ans1) {
case "a":
for(int i=0;i<arr.length;i++)
{
if(arr[i]=="a") {
count=count+1;
}
}
break;
        case "b":

        count=count+0;

        break;
        case "c":

        count=count+0;

   break;
                }
    String[] Question2 = {"What is India's Top MNC name", "d.Reliance",
                "e.Tata Groups","f.Adani Group"};

        for(int i=0; i<Question2.length; i++) {
        System.out.println(Question2[i]);
```

```
                }


                String ans2=sc.nextLine();

            switch(ans2) {
                case "d":

                count=count+0;

                break;
                case "e":
                for(int i=0;i<arr.length;i++)
                {
                if(arr[i]=="e") {
                count=count+1;
                }
                }
                break;
                case "f":

                count=count+0;

                break;
                }
            String[] Question3 = {"In which year foreign direct Investment was
introduced in india", "g.1991",
                        "h.1992","i.1998"};

                for(int i=0; i<Question3.length; i++) {
                System.out.println(Question3[i]);
```

```
}


String ans3=sc.nextLine();

switch(ans3) {
 case "g":
 for(int i=0;i<arr.length;i++)
 {
 if(arr[i]=="g") {
 count=count+1;
 }
 }
 break;
 case "h":

 count=count+0;

 break;
 case "i":

 count=count+0;

break;
 }


 System.out.println("Your score is:" );
 System.out.println(count);
```

```
                System.out.println("Correct answers are: ");
                System.out.println(" a "+" e "+" g ");

                break;

        case "sports":
                Scanner sc2=new Scanner(System.in);

                String[] arr2= {"a2","e2","g2"};
                int count2=0;

                String[] Question12 = {"How many cricket world cups won by India
till now?", "a2.2 World Cups",
                "b2.3 World Cups","c2.4 World Cups"};

                for(int i=0; i<Question12.length; i++) {
                System.out.println(Question12[i]);
                }


                String ans12=sc2.nextLine();

                switch(ans12) {
                case "a2":
                for(int i=0;i<arr2.length;i++)
                {
                if(arr2[i]=="a2") {
                count2=count2+1;
                }
                }
                break;
```

```
                case "b2":

                count2=count2+0;

            break;
                case "c2":

                count2=count2+0;

                break;
                }
            String[] Question22 = {"India won which team game in in Paris Olympics",
"d2.Cricket",
                "e2.Hockey","f2.Volleyball"};

                for(int i=0; i<Question22.length; i++) {
                System.out.println(Question22[i]);
                }


                String ans22=sc2.nextLine();

                switch(ans22) {
                case "d2":

                count2=count2+0;

                break;
                case "e2":
                for(int i=0;i<arr2.length;i++)
                {
```

```
if(arr2[i]=="e2") {
count2=count2+1;
}
}
break;
case "f2":

count2=count2+0;

break;
}
String[] Question32 = {"Country with highest medals in Olympics",
"g2.China",
"h2.India","i2.Pakistan"};

for(int i=0; i<Question32.length; i++) {
System.out.println(Question32[i]);
}



String ans32=sc2.nextLine();

switch(ans32) {
case "g2":
for(int i=0;i<arr2.length;i++)
{
if(arr2[i]=="g2") {
count2=count2+1;
}
}
break;
```

```
                case "h2":

                count2=count2+0;

                break;
                case "i2":

                count2=count2+0;

                break;
                }


                System.out.println("Your score is:" );
                System.out.println(count2);

                System.out.println("Correct answers are: ");
                System.out.println(" a2 "+" e2 "+" g2 ");

                break;


            case "politics":

                Scanner sc3=new Scanner(System.in);

                String[] arr3= {"a3","e3","g3"};
                int count3=0;

                String[] Question13 = {"Who is the chief minister of Maharashtra?",
"a3.Eknath Shinde",
```

```
"b3.Devendra Fadanvis","c3.Yogi Adityanath"};

for(int i=0; i<Question13.length; i++) {
System.out.println(Question13[i]);
}


String ans13=sc3.nextLine();

switch(ans13) {
case "a3":
for(int i=0;i<arr3.length;i++)
{
if(arr3[i]=="a3") {
count3=count3+1;
}
}
break;
case "b3":

count3=count3+0;

        break;
        case "c3":

        count3=count3+0;

   break;
}
String[] Question23 = {"In which year Ladaki bahin Yojana was introduced?",
```

```
"d3.2023", "e3.2024","f3.2021"};

for(int i=0; i<Question23.length; i++) {
System.out.println(Question23[i]);
}


String ans23=sc3.nextLine();

switch(ans23) {
case "d3":


count3=count3+0;

break;
case "e3":
for(int i=0;i<arr3.length;i++)
 {
 if(arr3[i]=="e3") {
 count3=count3+1;
 }
 }
break;
 case "f3":

count3=count3+0;

  break;
  }
```

```
String[] Question33 = {"What are the minimum seats required for a party to win in Lok Sabha",
"g3.272", "h3.543","i3.273"};

for(int i=0; i<Question33.length; i++) {
System.out.println(Question33[i]);
}

String ans33=sc3.nextLine();

switch(ans33) {
 case "g3":
        for(int i=0;i<arr3.length;i++)
        {
        if(arr3[i]=="g3") {
        count3=count3+1;
        }
        }
        break;
        case "h3":

        count3=count3+0;

        break;
        case "i3":

        count3=count3+0;

        break;
 }
```

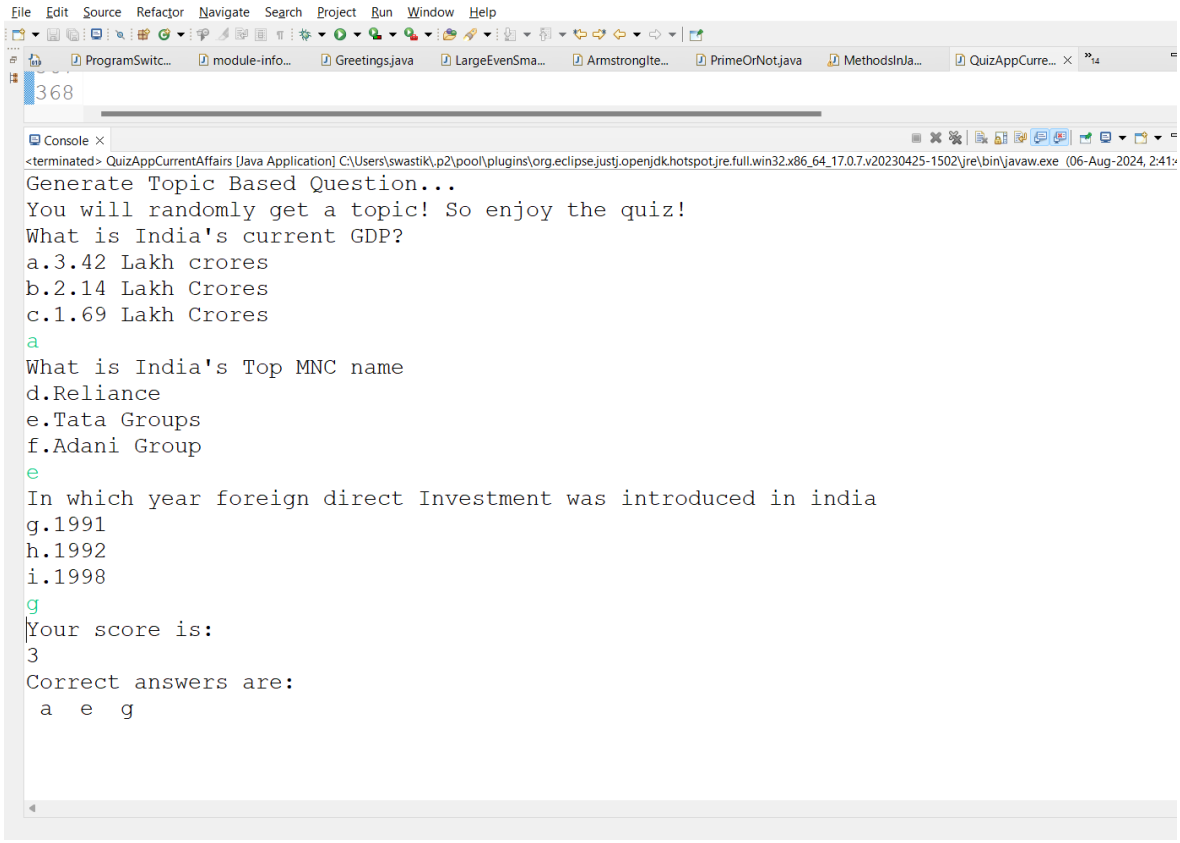
```
                    System.out.println("Your score is:" );
                    System.out.println(count3);

                    System.out.println("Correct answers are: ");
                    System.out.println(" a3 "+" e3 "+" g3 ");

                    break;


            case "freewill":
        System.out.println("<<Create one quiz question of your choice>>");

                    Scanner sc4=new Scanner(System.in);

        String[] Question14 = new String[4];

        System.out.println("Enter first element as a question and remaining three as options
(a4,b4 and c4) ");

                    for(int i=0; i<Question14.length; i++) {
                        Question14[i]=sc4.nextLine();
                    }

                    System.out.println("include correct option by suffixing it by * at the
end");
                    //String[] arr4= {"a4","e4","g4"};
                    String[] arr4=new String[3];
                    for(int i=0; i<arr4.length;i++) {
                            arr4[i]=sc4.nextLine();
```

```
}

System.out.println("Hide the upper scrollings from viewer of your
question");

for(int i=0; i<Question14.length;i++) {
        System.out.println(Question14[i]);
}

int count4=0;



String ans14=sc4.nextLine();

switch(ans14) {
case "a4":
        for(int i=0;i<arr4.length;i++) {
        if(arr4[i].contains("*")) {
        count4=count4+1;
        }else {
                count4=count4+0;
        }
        }
        break;
        case "b4":
                for(int i=0;i<arr4.length;i++) {
                if(arr4[i].contains("*")) {
                count4=count4+1;
                }else {
                count4=count4+0;
                }
```

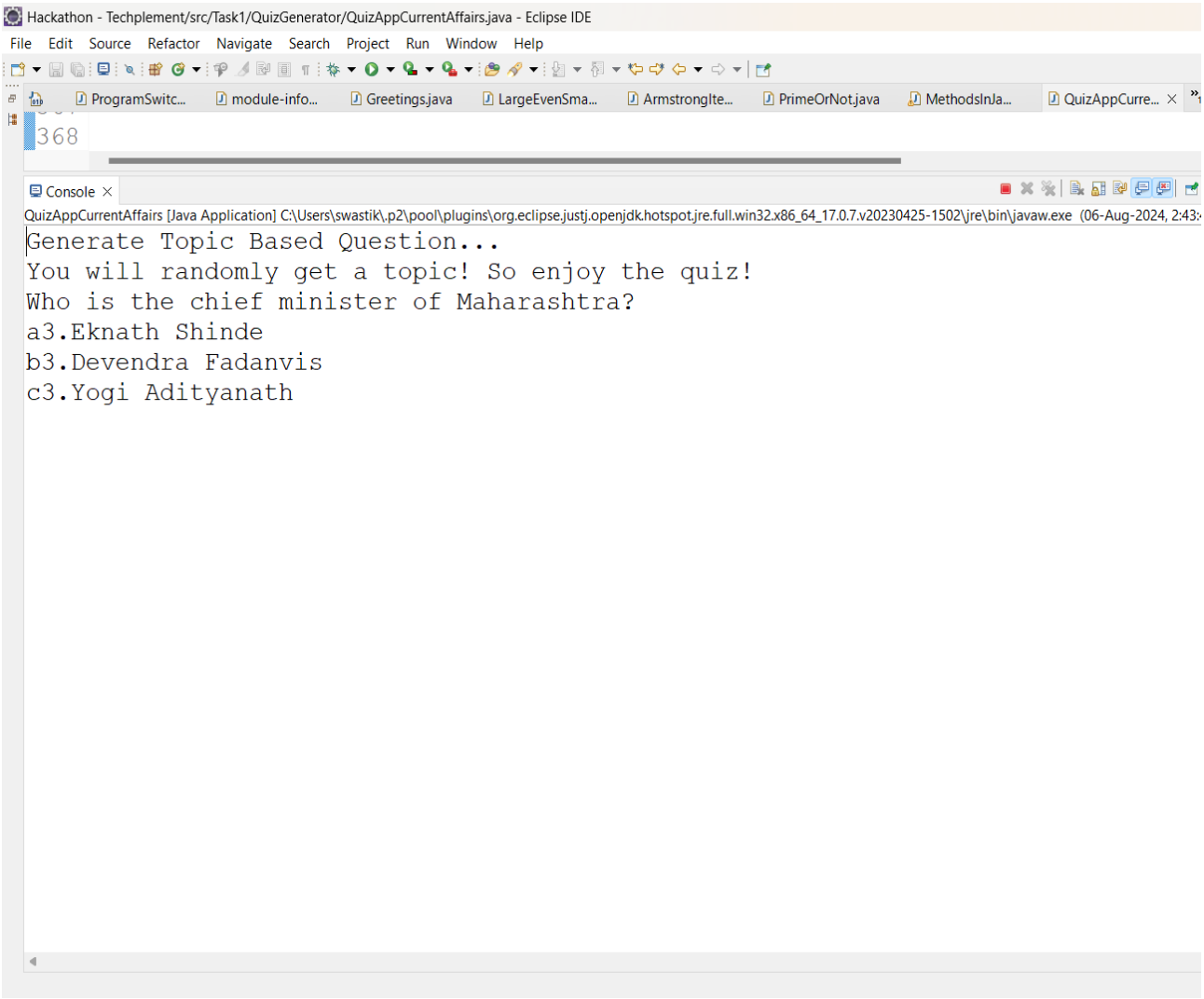
```
                    }
                break;
                case "c4":
                    for(int i=0;i<arr4.length;i++) {
                    if(arr4[i].contains("*")) {
                    count4=count4+1;
                    }else {
                    count4=count4+0;
                    }
                    }
       break;
    }

    System.out.println("Your score is:" );
    if(count4==1) {
        System.out.println("Hurray! It's correct. ");
    }else {
        System.out.println("Better luck next time!");
    }

    break;

  }

  }
}
```

OUTPUT

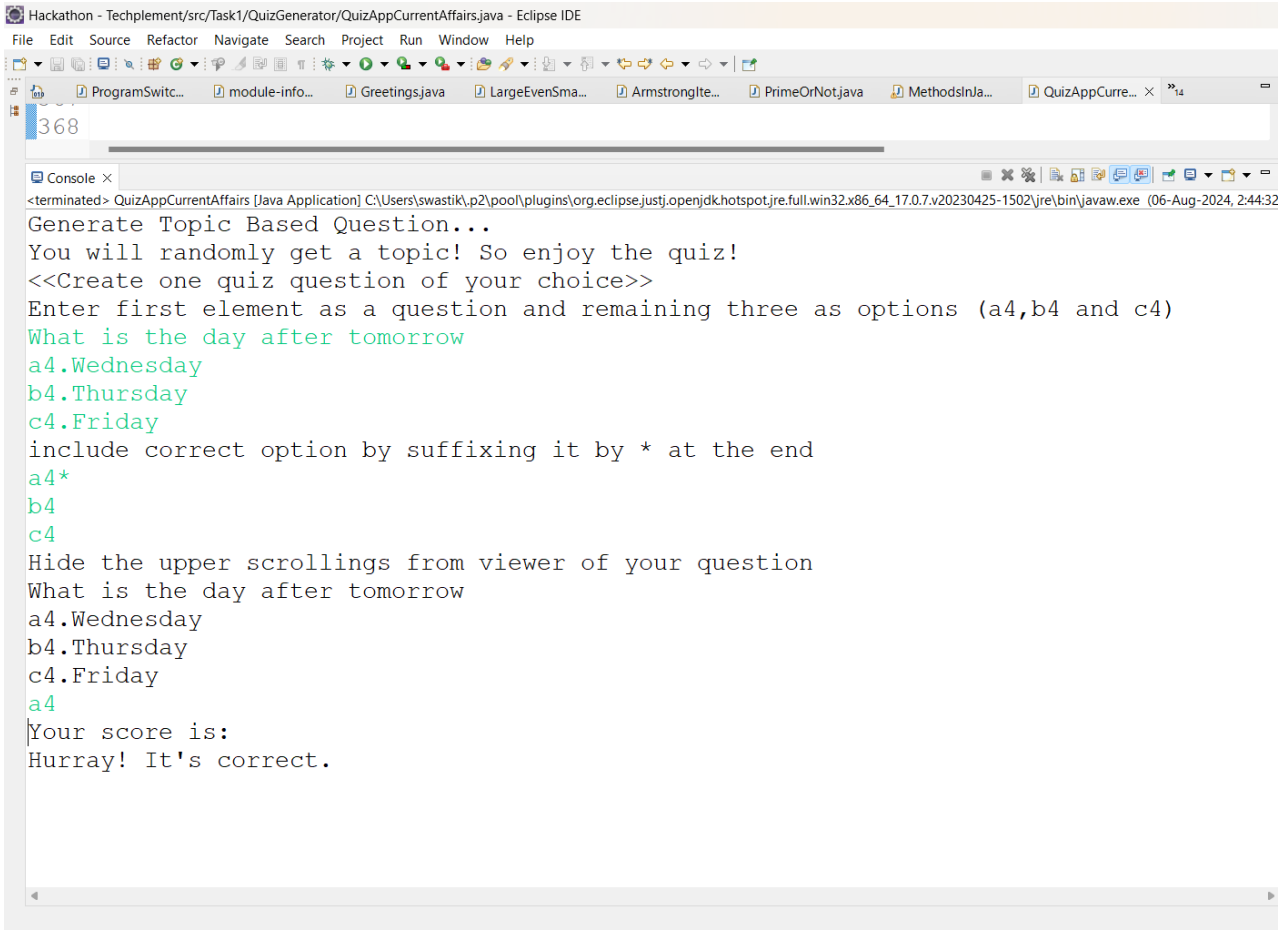
Randomly generated / selected quiz



Another randomly selected quiz set.



User created quiz question



Thanking you!

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