ONLINE TEST APPLICATION
Project by
ROHAN KARANDE

Date of Submission- 13/12/2022

GitHub Link -
https://github.com/codewithrohan10/Phase4_OnlineTestApplication.git

Phase 4 - Online Test Application Project Source code by Rohan Karande

----

header.component.html

```
<nav class="navbar navbar-dark bg-primary">
   <div class="container-fluid">
      <a class="navbar-brand text-bold" href="#">
         <img src="https://img.icons8.com/color/96/000000/angularjs.png" width="50"
alt="logo">
         <span class="text-uppercase">ngular Quiz</span>
      </a>
   </div>
</nav>
```

____

question.component.html

```
<div class="container mt-5">
   <div class="card">
      <div class="d-flex justify-content-between p-3">
         <div class="image">
            <img src="https://img.icons8.com/color/96/000000/angularjs.png" width="90"
alt="logo">
         </div>
         <div class="quiz-header">
            <h4 style="font-family: cursive;">Angular & TypeScript Quiz!</h4>
            <span style="font-style: italic;">Welcome {{name}}</span>
         </div>
      </div>

      <ng-container *ngIf="!isQuizCompleted">
         <div class="d-flex justify-content-around py-3">
            <div class="score">
               <h5>{{points}} Points</h5>
            </div>
            <div class="question-remain">
```

```
          <span style="font-style: italic;">Question {{currentQuestion+1}} of {{questionList.length}}</span>
        </div>
        <div class="timer">
          <h5>{{counter}} sec ⍰</h5>
        </div>
      </div>
      <div class="progress mb-3">
        <div class="progress-bar progress-bar-striped bg-success" role="progressbar" [ngStyle]="{'width':progress+'%'}" aria-valuenow="25" aria-valuemin="0" aria-valuemax="100"></div>
      </div>
      <div class="question">
        <div class="card">
          <h3>{{questionList[currentQuestion]?.questionText}}</h3>
        </div>
      </div>
      <div class="options">
        <ol *ngFor="let option of questionList[currentQuestion]?.options">
          <li (click)="answer(currentQuestion+1,option)">
            <div appChangeBg [isCorrect]="option.correct" class="card">
              {{option.text}}
            </div>
          </li>

        </ol>
      </div>
      <div class="d-flex justify-content-between">
        <button [disabled]="currentQuestion===0" class="btn" (click)="previousQuestion()"><i class="fa text-primary fa-chevron-left fa-3x" aria-hidden="true"></i></button>
        <button class="btn" (click)="resetQuiz()"><i class="fa fa-refresh text-primary fa-3x" aria-hidden="true"></i></button>
        <button class="btn" (click)="nextQuestion()"><i class="fa text-primary fa-chevron-right fa-3x" aria-hidden="true"></i></button>
      </div>
    </ng-container>

    <ng-container *ngIf="isQuizCompleted">
      <div class="row d-flex justify-content-between">
        <img style="width: 50%;" class="img-fluid col-sm-12 mx-auto" src="https://icon-library.com/images/celebration-icon-png/celebration-icon-png-7.jpg" alt="">
        <div class="result text-center col-md-6 col-sm-12">
```

```
                    <h3>Congratulations!! <br>You have completed the quiz. <br>Below is your result:</h3>
                    <p>Total Question Attempted : {{questionList.length}} </p>
                    <p>Total Correct Answered : {{correctAnswer}} </p>
                    <p>Total Wrong Answered : {{inCorrectAnswer}} </p>
                    <p>Your Score : {{points}} Points </p>
                </div>
            </div>
        </ng-container>

    </div>
</div>
______________________________________________________________________________________________

question.component.scss
-----------------------
.card {
    max-width: 800px;
    margin: 0 auto;
    padding: 10px;
}

li {
    list-style-type: none;
    cursor: pointer;
    margin: 10px 0;
}

li .card:hover {
    border: 1px solid blue;
}

ol {
    padding: 0;
}

_____________________________________________________________________________________________

question.component.ts
---------------------
import { Component, OnInit } from '@angular/core';
import { interval } from 'rxjs';
import { QuestionService } from '../service/question.service';
```

```
@Component({
  selector: 'app-question',
  templateUrl: './question.component.html',
  styleUrls: ['./question.component.scss']
})
export class QuestionComponent implements OnInit {

  public name: string = "";
  public questionList: any = [];
  public currentQuestion: number = 0;
  public points: number = 0;
  counter = 60;
  correctAnswer: number = 0;
  inCorrectAnswer: number = 0;
  interval$: any;
  progress: string = "0";
  isQuizCompleted : boolean = false;
  constructor(private questionService: QuestionService) { }

  ngOnInit(): void {
    this.name = localStorage.getItem("name")!;
    this.getAllQuestions();
    this.startCounter();
  }
  getAllQuestions() {
    this.questionService.getQuestionJson()
      .subscribe(res => {
        this.questionList = res.questions;
      })
  }
  nextQuestion() {
    this.currentQuestion++;
  }
  previousQuestion() {
    this.currentQuestion--;
  }
  answer(currentQno: number, option: any) {

    if(currentQno === this.questionList.length){
      this.isQuizCompleted = true;
      this.stopCounter();
    }
    if (option.correct) {
```

```
    this.points += 10;
    this.correctAnswer++;
    setTimeout(() => {
      this.currentQuestion++;
      this.resetCounter();
      this.getProgressPercent();
    }, 1000);


  } else {
    setTimeout(() => {
      this.currentQuestion++;
      this.inCorrectAnswer++;
      this.resetCounter();
      this.getProgressPercent();
    }, 1000);

    this.points -= 10;
  }
}
startCounter() {
  this.interval$ = interval(1000)
    .subscribe(val => {
      this.counter--;
      if (this.counter === 0) {
        this.currentQuestion++;
        this.counter = 60;
        this.points -= 10;
      }
    });
  setTimeout(() => {
    this.interval$.unsubscribe();
  }, 600000);
}
stopCounter() {
  this.interval$.unsubscribe();
  this.counter = 0;
}
resetCounter() {
  this.stopCounter();
  this.counter = 60;
  this.startCounter();
}
resetQuiz() {
    this.resetCounter();
    this.getAllQuestions();
    this.points = 0;
    this.counter = 60;
    this.currentQuestion = 0;
    this.progress = "0";

  }
  getProgressPercent() {
    this.progress = ((this.currentQuestion / this.questionList.length) * 100).toString();
    return this.progress;

  }
}
______________________________________________________________________

question.service.ts
-------------------
import { Injectable } from '@angular/core';
import {HttpClient} from '@angular/common/http'
@Injectable({
  providedIn: 'root'
})
export class QuestionService {

  constructor(private http : HttpClient) { }

  getQuestionJson(){
    return this.http.get<any>("assets/questions.json");
  }
}

_______________________________________________________________________

welcome.component.html
----------------------
<div class="container bg-light py-5">
    <h1 class="display-5 fw-bold">Welocme to Quiz App</h1>
    <p class="col-md-8 fs-4">This quiz will contains total 9 questions. Each Question holds 10
Points</p>
    <h4>Rules:</h4>
    <ol>
        <li>Correct Question gives you 10 points</li>
        <li>Incorrect question gives to -10 points</li>
```

```
      <li>You will have 60 sec to answer each question</li>
      <li>Refereshing the page will reset the Quiz</li>
   </ol>
   <h1 style="font-family: cursive;text-align:center">All the best!!</h1>
   <div class="name col-md-4 my-3">
      <label for="">Enter your name:</label>
      <input #name type="text" class="form-control">
   </div>
   <button class="btn btn-primary btn-lg" routerLink="/question" (click)="startQuiz()">Start
the Quiz!!</button>
</div>

__________________________________________________________________________

welcome.component.ts
--------------------
import { Component, OnInit,ViewChild,ElementRef } from '@angular/core';

@Component({
  selector: 'app-welcome',
  templateUrl: './welcome.component.html',
  styleUrls: ['./welcome.component.scss']
})
export class WelcomeComponent implements OnInit {

  @ViewChild('name') nameKey!: ElementRef;
  constructor() { }

  ngOnInit(): void {
  }
  startQuiz(){
    localStorage.setItem("name",this.nameKey.nativeElement.value);
  }

}
_____________________________________________________________________

app-routing.module.ts
---------------------
import { NgModule } from '@angular/core';
import { RouterModule, Routes } from '@angular/router';
import { QuestionComponent } from './question/question.component';
import { WelcomeComponent } from './welcome/welcome.component';
```

```
const routes: Routes = [
  {path:'', redirectTo:'welcome',pathMatch:"full"},
  {path:"welcome", component:WelcomeComponent},
  {path:"question", component:QuestionComponent}
];

@NgModule({
  imports: [RouterModule.forRoot(routes)],
  exports: [RouterModule]
})
export class AppRoutingModule { }

________________________________________________________________

app.component.html
-----------------
<app-header></app-header>
<router-outlet></router-outlet>

_____________________________________________________

app.module.ts
-------------
import { NgModule } from '@angular/core';
import { BrowserModule } from '@angular/platform-browser';

import { AppRoutingModule } from './app-routing.module';
import { AppComponent } from './app.component';
import { WelcomeComponent } from './welcome/welcome.component';
import { QuestionComponent } from './question/question.component';
import { HeaderComponent } from './header/header.component';
import { HttpClientModule } from '@angular/common/http';
import { ChangeBgDirective } from './change-bg.directive';

@NgModule({
  declarations: [
    AppComponent,
    WelcomeComponent,
    QuestionComponent,
    HeaderComponent,
    ChangeBgDirective
  ],
  imports: [
    BrowserModule,
    AppRoutingModule,
    HttpClientModule
  ],
  providers: [],
  bootstrap: [AppComponent]
})
export class AppModule { }

____________________________________________________________

change-bg.directive.ts
---------------------
import { Directive, ElementRef, HostListener, Input, Renderer2 } from '@angular/core';

@Directive({
  selector: '[appChangeBg]'
})
export class ChangeBgDirective {

  @Input() isCorrect : Boolean = false;
  constructor(private el : ElementRef, private render : Renderer2) { }
  @HostListener('click') answer(){
    if(this.isCorrect){
      this.render.setStyle(this.el.nativeElement,'background','green');
      this.render.setStyle(this.el.nativeElement,'color','#fff');
      this.render.setStyle(this.el.nativeElement,'border','2px solid grey');
    }else{
      this.render.setStyle(this.el.nativeElement,'background','red');
      this.render.setStyle(this.el.nativeElement,'color','#fff');
      this.render.setStyle(this.el.nativeElement,'border','2px solid grey');
    }
  }
}
___________________________________________________________________

questions.json
-------------
{
    "questions": [{
            "questionText": "Which of the following does TypeScript use to specify types?",
            "options": [{
                    "text": ":",
                    "correct": true
                },
        {
          "text": ";"
        },
        {
          "text": "!"
        },
        {
          "text": "&"
        }
      ],
      "explanation": "TS uses a colon (:) to separate the property name from the property
type"
    },
    {
      "questionText": "Which of the following is NOT a type used in TypeScript?",
      "options": [{
          "text": "number"
        },
        {
          "text": "string"
        },
        {
          "text": "boolean"
        },
        {
          "text": "enum",
          "correct": true
        }
      ],
      "explanation": "enum is not used as a type in TypeScript"
    },
    {
      "questionText": "How can we specify properties and methods for an object in
TypeScript?",
      "options": [{
          "text": "Use classes."
        },
        {
          "text": "Use interfaces.",
          "correct": true
        },
        {
          "text": "Use enums."
        },
        {
          "text": "Use async/await."
        }
      ],
      "explanation": "interfaces are typically used to list the properties and methods for an
object"
    },
    {
      "questionText": "How else can Array<number> be written in TypeScript?",
      "options": [{
          "text": "@number"
        },
        {
          "text": "number[]",
          "correct": true
        },
        {
          "text": "number!"
        },
        {
          "text": "number?"
        }
      ],
      "explanation": "number[] is another way of writing Array<number> in TypeScript"
    },
    {
      "questionText": "In which of these does a class take parameters?",
      "options": [{
          "text": "constructor",
          "correct": true
        },
        {
          "text": "destructor"
        },
        {
          "text": "import"
        },
        {
          "text": "subscribe"
        }
      ],
      "explanation": "a constructor is used by a class to take in parameters"
    },
    {
            "questionText": "Which is NOT an access modifier?",
            "options": [{
                    "text": "private"
                },
                {
                    "text": "protected"
                },
                {
                    "text": "public"
                },
                {
                    "text": "async",
                    "correct": true
                }
            ],
            "explanation": "async is not used as an access modifier type in TypeScript"
        },
        {
            "questionText": "Which keyword allows us to share information between files in
TypeScript?",
            "options": [{
                    "text": "import"
                },
                {
                    "text": "export",
                    "correct": true
                },
                {
                    "text": "async"
                },
                {
                    "text": "constructor"
                }
            ],
            "explanation": "the export keyword allows for the information to be transmitted
between files"
        },
        {
            "questionText": "Which is an array method to generate a new array based on a
condition?",
            "options": [{
                    "text": "filter",
                    "correct": true
                },
                {
                    "text": "map"
                },
                {
                    "text": "async"
                },
                {
                    "text": "enum"
                }
            ],
            "explanation": "filter is a method used to conditionally create a new array"
        },
        {
            "questionText": "How is a property accessible within a class?",
            "options": [{
                    "text": "Using this.propertyName",
                    "correct": true
                },
                {
                    "text": "Accessors"
                },
                {
                    "text": "Destructuring"
                },
                {
                    "text": "Arrow function"
                }
            ],
            "explanation": "this.propertyName is the way to access a specific property within a
class"
        }
    ]
}

____________________________________________________________________

index.html
-----------
<!doctype html>
<html lang="en">

<head>
    <meta charset="utf-8">
    <title>AngularQuizApp</title>
```

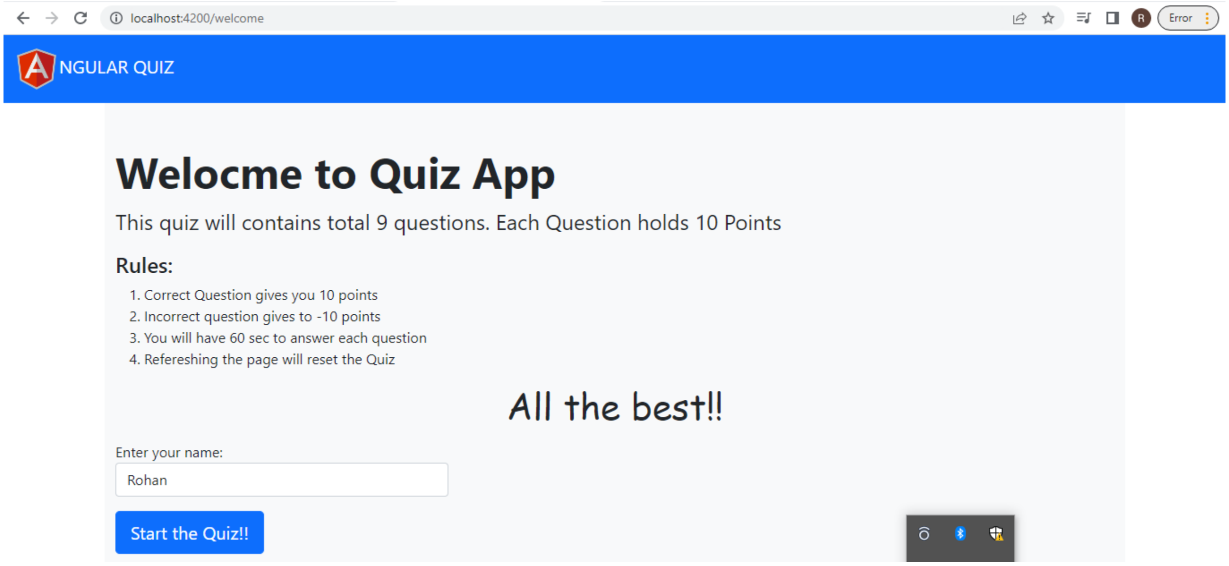
```
   <base href="/">
   <meta name="viewport" content="width=device-width, initial-scale=1">
   <link rel="icon" type="image/x-icon" href="favicon.ico">
   <link href="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css"
rel="stylesheet" integrity="sha384-
1BmE4kWBq78iYhFldvKuhfTAU6auU8tT94WrHftjDbrCEXSU1oBoqyl2QvZ6jIW3"
crossorigin="anonymous">
   <link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-
awesome/4.7.0/css/font-awesome.min.css">
</head>

<body>
   <script
src="https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/js/bootstrap.bundle.min.js"
integrity="sha384-
ka7Sk0Gln4gmtz2MlQnikT1wXgYsOg+OMhuP+IlRH9sENBO0LRn5q+8nbTov4+1p"
crossorigin="anonymous"></script>
   <app-root></app-root>
</body>

</html>
```

SCREENSHOTS -

Welcome page-



Welocme to Quiz App

This quiz will contains total 9 questions. Each Question holds 10 Points

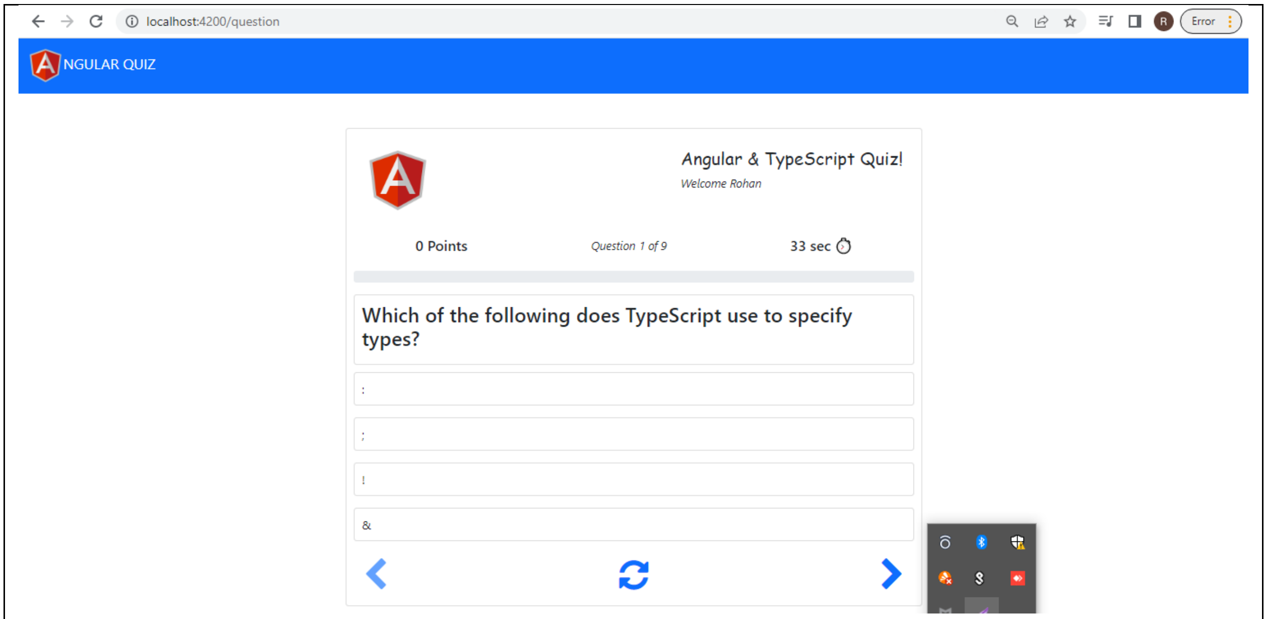
Rules:

1. Correct Question gives you 10 points
2. Incorrect question gives to -10 points
3. You will have 60 sec to answer each question
4. Refereshing the page will reset the Quiz

All the best!!

Enter your name: Rohan

Questions Page-



localhost:4200/question

NGULAR QUIZ

Angular & TypeScript Quiz!

Welcome Rohan

0 Points *Question 1 of 9* 33 sec

Which of the following does TypeScript use to specify types?

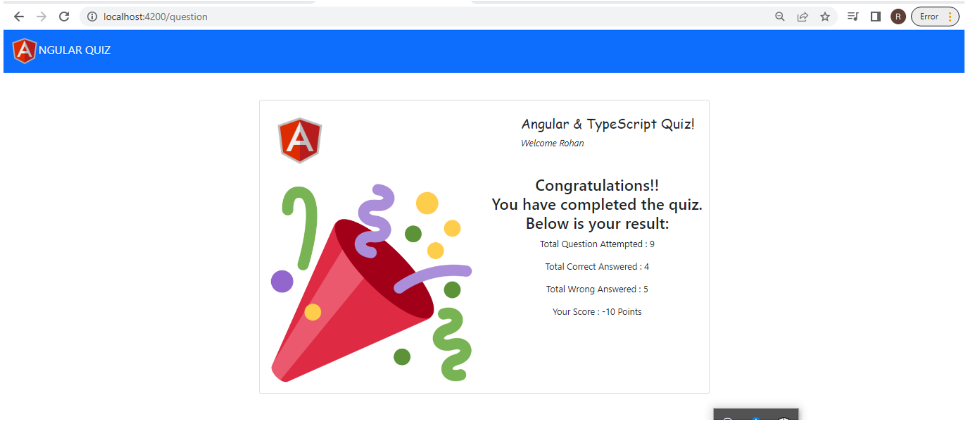
:

;

!

&

sResult Display Page-



localhost:4200/question

NGULAR QUIZ

Angular & TypeScript Quiz!

Welcome Rohan

Congratulations!!
You have completed the quiz.
Below is your result:

Total Question Attempted : 9

Total Correct Answered : 4

Total Wrong Answered : 5

Your Score : -10 Points