**PHYSICS PROJECT**

TEAM BLUE BIRDS

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PHYSICS-PROJECT

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IDEA OF THE PROJECT

The idea of the project is create a c++ proggram that is closely related to physics.

TEAM MEMBERS

|  |  |
| --- | --- |
| № | Roles in the team |
|  | Soner Solakov – Scrum trainer |
|  | Zhanet Petkova – Back-end developer |
|  | Valeria Yaneva - Back-end developer |
|  | Victoria Bolashikova – QA Engineer |

PROJECT DESCRIPTION

|  |  |
| --- | --- |
| № | Description |
|  | Idea in general.  The idea is – an application in which you can create your own simulations, take tests, calculate problems and get in touch with pre-made simulations. |
|  | How can you access the project ?  You can find our project on GitHub. You can access the files by installing the repository, or paste this to your console - https://github.com/SYSolakov20/Physics-Project.git |
|  | Team work.  Our main communicating platform is Microsoft Teams. During the project we met almost every, so that everyone can catch up with the work. |
|  | What technologies are used?  The technologies used are **Visual Studio & Visual Studio Code**  as our code editors, the website was created using simple **HTML & SCSS** , we used **GitHub** for collaborative work, **Microsoft Teams** - connection and communication, **PowerPoint** - preparing a Presentation, **Word** - preparing Documentation, **Excel** – for the QA tests and **Photoshop** – photo and graphic processing. |

PERFORMED TASKS

|  |  |
| --- | --- |
| № | Completed tasks |
| 1 | Create a download one page website  The website contains phone and iMac mockup that represent our app, a download button, benefits and contact button. |
| 2 | Create the app menu  This is the starting point in the app. In there you can navigate all around the program. |
| 3 | Make the sumulations  The simulations represent a electric chain. In this part of the program you can see pre-made simulations. |
| 4 | Make the calculators  The calculatars are way to solve a problem really quick. We even made it easier to understand by adding the formula to the specific calculation you make. |
| 5 | Create tests  Test are great way to learn new things and sharpern your knowlidge, by making this we challenge the customer to take a test and later check his results. |
| 6 | Create your own simulation  In this part of the program you can experement and create your own simulations by adding diferent elements to a electric chain. |
| 7 | Make the README file  In the reedme file you can get a quick overview of the project. We have added the proggraming languages we used, the diagrams and the demos of the project. |
| 8 | Make the documentation  The documentation provides very useful infromation in terms of the technical aspect. You can learn pretty much everything by reading it. |
| 9 | Make the presentation  We have created a short presentation to quickly show what we have done. |

BLOCK DIAGRAM

Diagram

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C++ FUNCTIONS

|  |  |  |  |
| --- | --- | --- | --- |
| **Function** | **Type** | **File** | **Description** |
| printMenu() | void | Program.cpp | Displays menu |
| startProgram() | void | Program.cpp | Beginning of the program |
| startSimulations() | void | Simulations.cpp | Begin simulations |
| doNextSimulationOn() | void | Simulations.cpp | Prints menu when the simulation is on |
| doNextSimulationOff() | void | Simulations.cpp | Prints menu when the simulation is off |
| displaySimpleSimulation() | void | Simulations.cpp | Prints simple simulation |
| displayAmmeterSimulation() | void | Simulations.cpp | Prints ammeter simulation |
| displayVoltmeterSimulation() | void | Simulations.cpp | Prints voltmeter simulation |
| displayAmmmeterAndVoltmeterSimulation() | void | Simulations.cpp | Prints ammeter and voltmeter simulation |
| startCalculators() | void | Calculators.cpp | Beggin calculators |
| doNextCalculator() | void | Calculators.cpp | Prints calculator menu |
| calculateElectricCurrent() | void | Calculators.cpp | Starts electric current calculator |
| calculateChargePassed() | void | Calculators.cpp | Starts charge passed calculator |
| calculateResistance() | void | Calculators.cpp | Starts resistance calculator |
| calculateVoltage() | void | Calculators.cpp | Starts voltage calculator |
| findNumLength(double number) | int | Calculators.cpp | Count number of digits |
| displayCalculator() | void | Calculators.cpp | Prints calculator |
| answerQuestionOne() | void | Test.cpp | Displays the first question |
| answerQuestionTwo() | void | Test.cpp | Displays the second question |
| answerQuestionThree() | void | Test.cpp | Displays the third question |
| answerQuestionFour() | void | Test.cpp | Displays the fourth question |
| answerQuestionFive() | void | Test.cpp | Displays the fifth question |
| answerQuestionSix() | void | Test.cpp | Displays the sixth question |
| answerQuestionSeven() | void | Test.cpp | Displays the seventh question |
| answerQuestionEight() | void | Test.cpp | Displays the eighth question |
| answerQuestionNine() | void | Test.cpp | Displays the ninth question |
| answerQuestionTen() | void | Test.cpp | Displays the tenth question |
| shuffleQuestions(int arr[10]) | void | Test.cpp | Reorganizes questions |
| startTest() | void | Test.cpp | Begin test |
| reviewTest(int reviewTestQuestions[10]) | void | Test.cpp | Displays review of the test |
| displayMenuAfterTheTest() | void | Test.cpp | Prints menu after the test |
| fillPosition(int filledPosition) | void | CreateSimulation.cpp | Changes position value to 1 |
| emptyPosition(int emptyPosition) | void | CreateSimulation.cpp | Changes position value to 0 |
| checkPosition(int occcupiedPosition) | void | CreateSimulation.cpp | Checks if position is occupied |
| startCreatingSimulation() | void | CreateSimulation.cpp | Begin creating simulation |
| displayPositions() | void | CreateSimulation.cpp | Prints free positions |
| printSimulation() | void | CreateSimulation.cpp | Display simulation |
| turnOn() | void | CreateSimulation.cpp | Turns the simulation on and checks if it works |

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