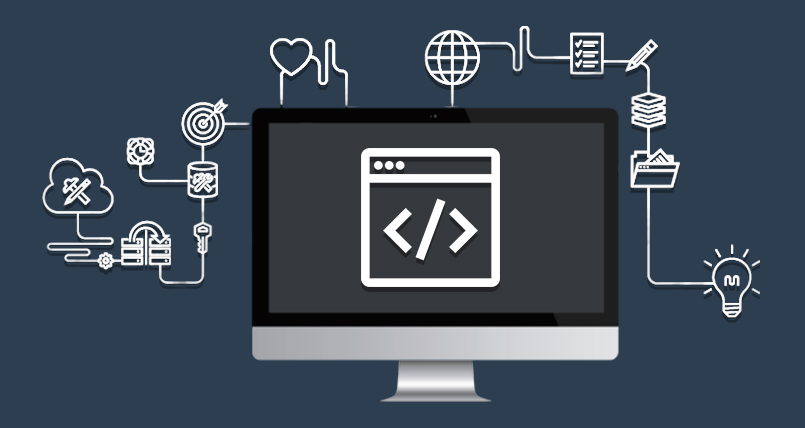
`



**Backend Development**

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# The Assignment

The main objective of the assignment is to create a database using PHP and MySQL and to make an ER Diagram from the details given in the assignment. The database consists of 4 tables Mission, Astronaut, Attends and Targets and the table should be connected through primary keys and foreign keys.

# PHP

PHP is a scripting language that allows user to create dynamic and interactive website. PHP language is easy to learn and is also compatible with all the major Operative Systems. PHP is an opensource web language which makes the language free to use and it can work with all the different databases. PHP is a flexible language which means that even in the middle of the projects a developer doesn’t need to write a new code if they need to add new things rather using the old code is possible without any problems. **(Goodworkslabs).**

# MYSQL

MySQL is a Relational Database Management System, in which the data is stored in an organized way in a table which consist of rows and columns. MySQL is a free to use database and it’s compatible with majority of Operative Systems. MySQL works with many languages including PHP, PERL, C, Java, etc… MySQL is customizable with its open-source license and programmers can customize it to fit their necessities. **(tutorialspoint).**

# Database and Website

The database topic is Space and is built with 4 tables with the name of database space\_mission. The tables consist of Missions, Astronauts, Attends and Targets.

Diagram

Description automatically generated

Here’s the Astronaut table, it consists of **astronaut\_id,** which is the primary key, name of the astronaut (Datatype text) and the number of missions this astronaut went on a mission (Datatype Integer).

Graphical user interface, text, application

Description automatically generated

The mission table consist of Mission\_id, which is the primary key of the table, mission name (Datatype Text), destination (Datatype Text), launch\_date of the mission (Datatype Date), crew size number of astronauts (Datatype Integer), type of mission (Datatype Text) and target\_id which is a foreign key from the Target table (Datatype Integer).

Graphical user interface, text, application

Description automatically generated

Graphical user interface, text, application

Description automatically generatedTarget table consist of Target\_id, which is the primary key of the table, Target name (Datatype Text), type of target (datatype text), first\_mission (Datatype date) and the total number of missions (datatype Integer).

Finally, the attends table, which consists of two primaries. When someone adds a new attend, it would add one to that astronaut no\_missions by one because he’s travelling to a new mission and the mission table will also be updated because the crew size will have to add one more astronaut. Astronaut\_id and Mission\_id (Datatype Integer).

Graphical user interface, text, application

Description automatically generated

The Website consist of 8 pages where the users will be able to add to the database and view the database data that is already stored in the four tables. Every page has a header at the top with the links to other pages.

Diagram, table

Description automatically generated



The add mission will allow the user to add new mission details to the database. Depending on if the users’ details match the website form requirements to add the data. Every form page will have a button to go back to main page and to view that table to see the registered data.

Graphical user interface

Description automatically generated with medium confidence

Graphical user interface, application

Description automatically generatedThe users will be able to add and view all the tables from the website. When adding a new entry to the attends table it’s important to add both mission\_id and astronaut\_id which is already saved in the database in both mission and astronaut table.

Table

Description automatically generated

# Code and Queries

The website consists of HTML, CSS, Bootstrap and PHP. The website code is commented explaining all the different tags used on the website. Website uses bootstrap framework which makes the website easier to build and it makes the website device friendly by adjusting the website depending on the user’s device.

There’s four form pages for every database table, the code is similar in each page the only difference being the names of the field and the type of data.

A picture containing text

Description automatically generatedGraphical user interface, text, application, email

Description automatically generatedHere’s the picture of mission form page.

For every form html file there’s also a php file which connects to the database and allows the data to be inserted to database. The PHP file contains information about the database like the name, host, username, and password to connect to the database, it also includes a query to insert the data inside the database depending on if the user has entered the correct data or not.

Text

Description automatically generatedThe code is the same for other three files the only difference being the name of the tables and the fields names.

To view the tables there’s also four PHP files containing the connection, query, and the html code to put the details in the table. The code is similar in four pages the only difference is attends and mission table. Attends file have three different queries because it needs to update two more tables mission and astronaut because we are adding new crew into mission and adding one new mission to number of missions of the astronaut. In the mission table the crew size must be more than one, to ensure that I use if statement so that user can only enter more than 1 crew size otherwise it would show an error.

Text

Description automatically generated with medium confidence

Graphical user interface, text, application

Description automatically generated

# Validation

Graphical user interface, text

Description automatically generated with medium confidenceValidation is important part because, if there’s no validation anyone with knowledge can easily access to your database and steal data. Validating data is possible from user side like asking user to enter the data with tag required in the input tag and without entering the data the form wouldn’t send the request and that’s one of the validations used in the code. There are also hints to make it easier for the users to add data.

Another validation is used but this time is inside php which removes all the unnecessary character from the user input. For example, if user inputs James\ it would remove the backslash when user enter the data.

Text

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Text

Description automatically generated

Website Validation to see if there’s any errors on the website.

Graphical user interface, text, application, email

Description automatically generated

Figure W3C VALIDATOR

# ER Diagram

Diagram

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Figure ER Diagram

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**Database Website** [**space.hussainweb.co.uk**](space.hussainweb.co.uk)

**Git-Hub repository** [**https://github.com/akhal8/space.git**](https://github.com/akhal8/space.git)