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Software Development 1

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## Distance, Running Time, and Pace Time Conversion Program

### Abstract:

The Distance Conversion converts one metric distance into another metric distance (i.e. kilometers to miles). The Running Time Conversion is designed to give the user an understanding of how fast they can go over a variety of distances. The Pace Time Conversion is used to find the paces needed (per mile/per 400m) to go a certain speed for a certain distance. In this project I am creating a program that does all of these, giving the user an understanding of how metric distances convert to other metric distances, an accurate look at just how fast they can go, and a look into the paces they need to run to achieve their goals.

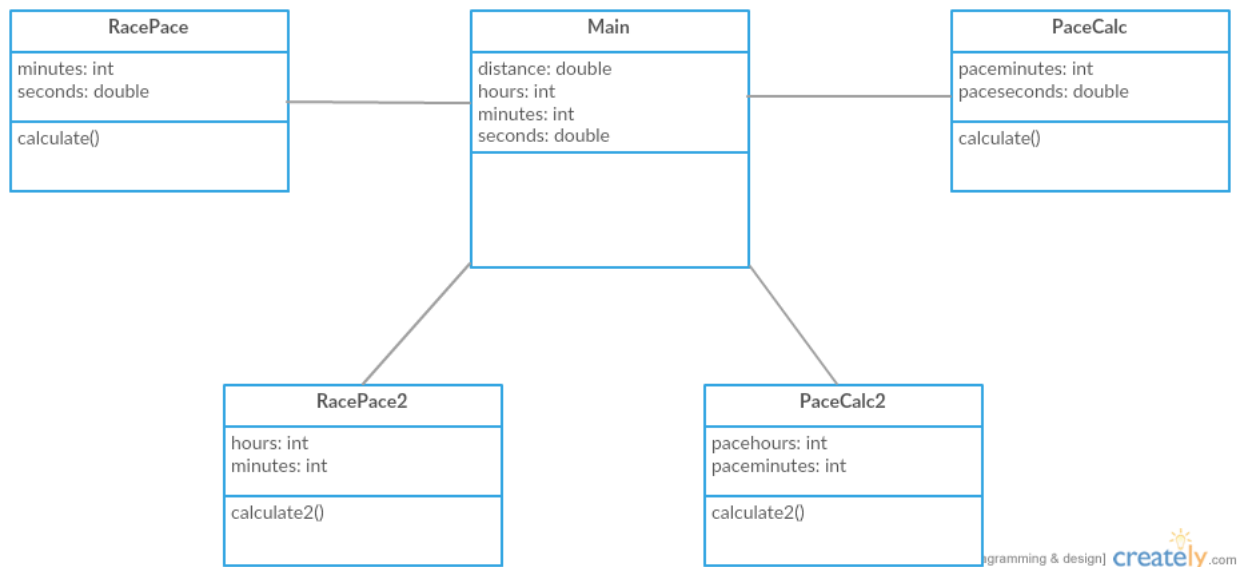
### Introduction:

Running has been a big part of my life since the beginning of high school and is still a very large part of my life now as a college athlete. I wanted to do something that pertained to what I have been doing for much of the past 4 years so I decided to do a three part project with each part pertaining to a certain part of running. The Distance Conversion which converts one metric distance into another metric distance. The Running Time Conversion Program which gives estimated times for multiple distances based on the users own time entered over a certain distance. Lastly, the Pace Time Conversion which gives the user an insight on the paces they

need to go to achieve their goals. Over the course of this project I am making a variety of classes that will help calculate the estimated time the user can achieve in a variety of distances as well as for the paces the user must achieve to run a certain distance.

#### Detailed System Description:

The users interact with the system by entering first entering a number: 1 for the Distance Conversion, 2 for the Running Time Conversion, 3 for the Pace Time Conversion, 4 for more info on each of the conversions, and 5 if you're done using the program. For the Distance Conversion two metric systems must be entered (1 for meters, 2 for kilometers, and 3 for miles) and then the actual distance for the first metric system entered. The system then prints out the conversion of the first metric system to the second metric distance entered. For the Running Time Conversion a distance in meters as well the time it took to complete said distance and the system then prints out rows of multiple distances (400 meter, 800 meter, mile, 2 mile, etc.) as well as estimated time to complete each distance. For the Pace Time Conversion the user enters a distance they wish to or have run in meters as well as the time you wish to complete the distance in or have completed it in. The system then prints out the paces the user should run to achieve the time entered. Lastly, for the info on each of the converters enter 1 for the Distance Conversion, 2 for the Running Time Conversion, and 3 for the Pace Conversion.



## Requirements:

Requires user to enter a number between 1 and 5 and depending on which one is chosen the user will be prompted to enter two distances, a distance and the time it takes time to complete the distance, or just a number and time it takes to complete the distance entered.

## Literature Survey:

Outside of this program there are many other programs online that calculate distance, running time, and pace conversions, however none give back all of these in one, single, easy to use program. Most of the programs out there only give one of the features that this program has or some of these features broken up into a variety of different pages. This program is special in that it gives you all of this information in one easy to use program rather than break it up into a variety of different pages or just not have the features at all.

## User Manual:

In order to use the system correctly, the user must enter a number. The number should be between 1 and 5 but if not the program will just end. For the Distance Conversion enter two numbers from 1 to 3 and then enter the distance you wish to convert from. For the Running Time and Pace Time Conversions enter a distance (ex- 13.1) where miles is understood as well as a time (ex- 1 16 35) where the first number entered is hours, the second is minutes, and the last number entered is seconds. If any words are entered the program will not run.

## Conclusion:

This program is designed with the user in mind giving them all the information they need to perform at their best. The Distance Conversion prints out one metric system converted to another metric system in case you want to know how meters converts to miles. The Running Time Conversion prints out clear and concise running estimates tailored to the user giving them an accurate glance at what they can do over a variety of distances. The Pace Time Conversion gives the user a look at what they need to run for each split to achieve their goals. This project is very significant as it gives so much more than what any other running time conversion program can offer, giving the user the information they need to run as fast as they want to or even show them just what they are capable of.