CASE STUDY: Reading Buses

Year 13 UTC Reading student Jonathan Foot secured a summer job at Reading Buses after catching the attention of their CEO. Jonathan developed a programme, which would drastically improve efficiencies and customer experience in their business.

Jonathan, who is currently studying Computer Science, Physics and Maths A - Levels at UTC Reading, was becoming increasingly frustrated whenever his bus was late. In his free time, he came across the Reading Open Data Application Programming Interface (API), a free and public API for Reading residents. It gives access to live data on buses, roads, parking and roadwork issues.

Jonathan said: "Reading Buses was claiming that the Pink bus services were underperforming and had suggested cutting them. This, along with my bus often being late, sparked the development of my Twitter BOT."

In creating the BOT, Jonathan accredits studying Computer Science at UTC Reading to giving him the right skills to develop this, as well as his strong passion for programming.

> I WANTED TO INVESTIGATE THE PUNCTUALITY OF THE BUSES AND EVEN PROVIDE AN EXPLANATION FOR LOW PASSENGER NUMBERS. TO HELP ME DO THIS, I DEVELOPED A PROGRAMME THAT COULD RECORD ANY STOP OR SERVICE IN READING, MONITORING THE ESTIMATED AND ACTUAL TIME OF ARRIVAL OF EVERY BUS.
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> IF A BUS WAS PREDICTED TO BE OVER FIVE MINUTES LATE, THE BOT WOULD AUTOMATICALLY TWEET TO LET PASSENGERS KNOW. IT WOULD THEN CONTINUE TO SEND OUT TWEETS AND UPDATE THEM IF THIS WAS PREDICTED TO GET WORSE. EFFECTIVELY, I CREATED A COMPUTERISED VERSION OF THE OFFICIAL READING BUSES TWITTER FEED, WHICH IS CURRENTLY MANUALLY OPERATED.
>
> Jonathan Foot
> Year 13 Student

Jonathan's BOT would also automatically generate a weekly infographic to show the overall performance of each bus at various locations, with all necessary information being obtained from one single database.

This programme drew the attention of Reading Buses CEO, Martjin Gilbert and Head of Engineering and Innovation, John Bickerton, which led to Jonathan being invited into the depot to discuss this project further.
After taking a tour of the depot, Jonathan was offered the possibility to return following his exams to explore his project further. Jonathan said: "I am so pleased at the prospect of working with Reading Buses. I love programming and to be offered this opportunity, from what started as a hobby, is incredible."

Jonathan Nicholls, Principal at UTC Reading said: "This is a fantastic example of the way in which UTC Reading students have used their learning within the school to innovate and solve real world problems using technology. I am extremely proud that Jonathan has used his intuition and innovative skills to develop a solution to the problem that has been recognised by Reading buses. Not only does it help Jonathan and Reading buses but the whole community within Reading."

WE ARE REALLY IMPRESSED WITH THE WORK THAT JONATHAN HAS DONE. HIS FIGURES ACTUALLY REFLECT WELL ON OUR OVERALL RELIABILITY, BUT WE ARE CONSCIOUS THAT WE ARE ONLY EVER AS GOOD AS OUR LAST JOURNEY, SO INFORMATION LIKE THIS IS IMPORTANT TO UPDATE OUR CUSTOMERS, AND FOR US TO UNDERSTAND WHERE OUR SERVICES ARE SEEING DISRUPTION. WE'RE LOOKING FORWARD TO SEEING JONATHAN FOR A SHORT PLACEMENT OVER THE SUMMER.

John Bickerton,
Head of Engineering and Innovation at Reading Buses