

**AP<sup>®</sup> COMPUTER SCIENCE PRINCIPLES  
2016 PILOT SCORING COMMENTARY**

Performance Task: Explore — Impact of Computing Innovations  
December 2016

For Sample Responses Receiving a **High** Score

**Sample Response A**

| Criteria  | Points Earned | WHY this sample EARNED this point   | WHY this sample DID NOT Earn this point |
|---|---------------|---|---|
| Criteria 1: The computational artifact identifies the <b>computing innovation</b> and provides an illustration, representation, or explanation of the computing innovation's intended purpose, function, or effect. | 1             | The computational artifact identifies the computing innovation as virtual reality and provides an illustration that explains how data is transmitted between a central processing unit (CPU) and a headset to create virtual reality.   |   |
| Criteria 2: States a plausible fact about the <b>computing innovation's</b> intended purpose or function.   | 1             | The response includes a statement describing how a headset and a CPU work together to seamlessly stream information back and forth to create virtual reality.   |   |
| Criteria 3: Identifies at least ONE effect of the <b>computing innovation</b> .   | 1             | The ability to run simulations using virtual reality is stated as a beneficial effect.  |   |
| Criteria 4: Identifies a beneficial effect AND a harmful effect of the <b>computing innovation</b> . Explains how ONE of the identified effects impacts society, economy, or culture.                               | 1             | <p>The response states a beneficial effect and a harmful effect, as well as one impact to society, economy, or culture.</p> <p><b>Beneficial effect:</b> "...A beneficial effect that virtual reality (VR) has on society is the ability to run simulations using this system."</p> <p><b>Impact of beneficial effect to society:</b> "...For the things in career paths with dangerous situations it is much better to be able to simulate this using a created environment where no one will get hurt but still allows for people in training to learn valuable skills."</p> <p><b>Harmful effect:</b> "... with this being such an immersive technology many people tend to forget about their real life and only focus on the virtual one."</p> |   |
| Criteria 5: Identifies the data that the <b>computing innovation</b> uses. Explains how that data is consumed, produced, OR transformed.  | 1             | <p>The response identifies the data that is used as visual representation with RGB values, user input such as direction of view or 3D location of headset, and the associated sound files.</p> <p>The explanation of how the data is consumed, produced or transformed needs to include only one of these measures but the explanation in this response includes two:</p> <p><b>Explanation of how data is consumed and produced:</b> The response explains how the headpiece calculates the user's relative position and sends this to a CPU in the form of coordinates. The data is then used to track and display movements in the virtual world created.</p>  |   |

| Criteria  | Points Earned | WHY this sample EARNED this point  | WHY this sample DID NOT Earn this point |
|---|---------------|--|---|
| Criteria 6: Identifies one storage, privacy, OR security concern. Explains how the concern is related to the <b>computing innovation</b> .            | 1             | The response includes the following:<br><b>Concern (storage):</b> "This creates issues of how much ram the CPU has and as of now most VR systems require about an 8 GB of ram."<br><b>Explanation of how the concern is related to the computing innovation:</b> "If there is any lag or lack of bandwidth in between the headset and CPU then the user immediately tells out that it is not real and this the new world falls apart. That is why this data stream must be seamless in the communication between the headset and the CPU for the user to receive a great time. This creates issues that you need to be able to transfer huge gobs of data in this connection in as little time as possible." |   |
| Criteria 7: Provides inline citations of at least 3 attributed sources with the written response. The citations must be used to justify the response. | 1             | Three different inline citations are provided in the written response (two in response 2c, and one in response 2d).  |   |
| <b>Total</b>  | <b>7</b>      |  |   |

**Sample Response B:** This sample has been removed from the website and is no longer available.